

**AGRICULTURAL SURPLUS AND
INDUSTRIALIZATION IN VIETNAM
SINCE THE COUNTRY'S
REUNIFICATION**

A Ph.D thesis submitted by
Nguyen Do Anh Tuan
(Vietnam)

in fulfilment of the requirements for the degree of
Doctor of Philosophy in Development Studies
of the Institute of Social Studies
The Hague, The Netherlands

June 2006

Thesis Committee

Promoters:

Professor Marc Wuyts
Institute of Social Studies

Professor Ashwani Saith
Institute of Social Studies

Examiners:

Professor Finn Tarp
University of Copenhagen

Dr Sudipto Mundle
Asian Development Bank

Professor Massoud Karshenas
Institute of Social Studies

This dissertation is part of the research programme of CERES, Research School for Resource Studies for Development.
Funded by the Netherlands Fellowship Programme (NFP).

© Copyright Shaker Publishing 2006

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

Printed in The Netherlands.

ISBN 10: 90-423-0303-4
13: 978-90-423-0303-4

Shaker Publishing BV
St. Maartenslaan 26
6221 AX Maastricht
Tel.: 043-3500424
Fax: 043-3255090
[http:// www.shaker.nl](http://www.shaker.nl)

In deep gratitude of
my teacher, Dr. Nguyen Ngoc Luu,
who passed away in May 2003

TABLE OF CONTENTS

TABLE OF CONTENTS	IV
LIST OF TABLES	VII
LIST OF FIGURES.....	X
LIST OF SYMBOLS.....	XI
LIST OF ABBREVIATIONS	XVI
ACKNOWLEDGEMENTS	XVIII
CHAPTER 1. INTRODUCTION.....	1
1.1. RATIONALES	1
1.2. OBJECTIVES	3
1.3. TIMEFRAME OF THE STUDY.....	4
1.4. PROBLEM STATEMENTS AND HYPOTHESES	6
1.5. APPROACH OF THE STUDY	13
1.6. STRUCTURE OF THE STUDY.....	17
ENDNOTES OF CHAPTER 1	19
CHAPTER 2. REVIEW OF THEORIES ON THE INTERACTION BETWEEN AGRICULTURE AND INDUSTRY.....	21
2.1. INTRODUCTION	21
2.2. THE RUSSIAN DEBATE ON INDUSTRIALIZATION UNDER THE SAVING- CONSTRAINT.....	25
2.2.1. Saving mobilization in a closed economy	25
2.2.2. How to transform saving into investment goods?	29
2.3. LEWIS MODEL - INDUSTRIALIZATION AND THE LABOR TRANSFER PROCESS ..	34
2.4. DEMAND CONSTRAINT	37
2.4.1. Balanced versus unbalanced growth	37
2.4.2. Mundle's argument on demand-constraint imposed by agriculture	39
2.4.3. Demand constraint and forced saving mechanism	41
2.5. MARKETED SURPLUS CONSTRAINT	44
2.6. AGRICULTURE- AND EMPLOYMENT-BASED GROWTH STRATEGY	49
2.7. CONCLUSIONS AND IMPLICATIONS.....	51
ENDNOTES OF CHAPTER 2	59
CHAPTER 3. DEVELOPMENT STRATEGIES AND VIETNAM'S ECONOMIC DEVELOPMENT	65
3.1. THE PRE-REFORM PERIOD 1976-88: SOCIALIST INDUSTRIALIZATION AND ECONOMIC CRISIS.....	65

3.1.1. The 1976-80 period: Reunification, socialist transformation and economic crisis.....	69
3.1.2. The 1981-84 period: The partial reform and re-centralization.....	75
3.1.3. The 1985-88 period: Money, wage and price reform, and economic crisis	81
3.2. THE POST-REFORM PERIOD 1989-2000: TRANSFORMATION TO A MARKET ECONOMY AND INDUSTRIALIZATION	83
3.2.1. The 1989-92 period: Structural adjustment and stabilization.....	83
3.2.2. The 1993-96 period: Expansion of foreign trade and FDI	90
3.2.3. The 1997-2000 Period: Regional crisis and economic sow-down	92
3.3. CONCLUSIONS.....	94
APPENDIX OF CHAPTER 3	103
ENDNOTES OF CHAPTER 3	106
CHAPTER 4. ACCOUNTING AND ANALYTICAL FRAMEWORK FOR THE INTERSECTORAL RESOURCE FLOWS.....	111
4.1. ACCOUNTING FRAMEWORK OF ISRFs	112
4.1.1. The demarcation of sectors	112
4.1.2. Concepts of ISRFs	112
4.2. ANALYTICAL FRAMEWORK FOR ISRFs IN VIETNAM	120
4.2.1. Agricultural marketed surplus	122
4.2.2. Extraction through terms of trade.....	127
4.2.3. Net agricultural surplus and agricultural saving.....	129
4.2.4. Saving surplus	131
4.3. CONCLUSIONS AND IMPLICATIONS.....	132
APPENDIX OF CHAPTER 4	139
Introduction to SAM accounting framework	139
ENDNOTES OF CHAPTER 4	145
CHAPTER 5. FINANCIAL MECHANISM AND ROLES OF VIETNAM'S AGRICULTURE IN INDUSTRIALIZATION.....	147
5.1. FINANCING INDUSTRIALIZATION IN VIETNAM	147
5.1.1. The pre-reform period	147
5.1.2. The post-reform period	155
5.2. AGRICULTURAL CONSTRAINTS ON INDUSTRIALIZATION.....	163
5.2.1. Foreign exchange constraint	164
5.2.2. Wage goods constraint	166
5.2.3. Demand constraint	179
5.3. CONCLUSIONS AND IMPLICATIONS.....	182
APPENDIX OF CHAPTER 5	186
ENDNOTES OF CHAPTER 5	191
CHAPTER 6. ESTIMATE OF THE INTERSECTORAL RESOURCE FLOWS IN VIETNAM DURING 1976-2000	193
6.1. DATA USE.....	193

6.2. ESTIMATE OF GDP AND GDP DEFLATOR	196
6.3. THE COMMODITY SIDE OF ISRFs	207
6.4. THE FINANCIAL SIDE OF ISRFs	223
6.4.1. Net Factor Payment Transfer: $(F_a - Y_a) = (F_{ga} + F_{na} - F_{an})$	223
6.4.2. Net State Capital Transfer: $(K_{ga} - K_{ag})$	229
6.4.3. Net Private Capital Transfer: $(K_{na} - K_{an})$	231
6.4.4. Net State Current Transfer: $(T_{ga} - T_{ag})$	244
6.4.5. Net Private Current Transfer: $(T_{na} - T_{an})$	246
6.5. ESTIMATED RESULTS OF ISRFs	247
6.5.1. Commodity side	247
6.5.2. Terms of trade effects	250
6.5.3. Financial side	259
APPENDIX OF CHAPTER 6	263
6.A.1. Statistical data	263
6.A.2. Justification for the estimated results	289
ENDNOTES OF CHAPTER 6	296
CHAPTER 7. ANALYSIS ON THE DETERMINANTS OF INTERSECTORAL RESOURCE FLOWS IN VIETNAM	299
7.1. AGRICULTURAL GROWTH	301
7.1.1. Trends in agricultural growth	301
7.1.2. Factors contributing to agricultural growth	304
7.1.3. Investment and agricultural growth	311
7.2. COMMODITY SIDE OF ISRFs	317
7.3. FINANCIAL SIDE OF ISRFs	326
7.3.1. Taxation	331
7.3.2. State current transfer	334
7.3.3. Non-farm income	336
7.3.4. Agricultural saving	342
7.3.5. Transfer of saving surplus	347
7.4. CONCLUSIONS	352
APPENDIX OF CHAPTER 7	355
ENDNOTES OF CHAPTER 7	363
CHAPTER 8. MAJOR FINDINGS AND POLICY IMPLICATIONS	367
ENDNOTES OF CHAPTER 8	372
BIBLIOGRAPHY	373

LIST OF TABLES

Table III.A.1. Macroeconomic Accounts, 1976-2000	105
Table IV.A.1. A Schematic Representation of SAM.....	139
Table IV.A.2. Social Accounting Framework for Intersectoral Resource Flows	142
Table V.1. Financial Mobilization and Relocation, 1976-88.....	149
Table V.2. Budget Operation, 1976-88.....	153
Table V.3. Financial Mobilization and Relocation, 1989-2000	156
Table V.4. Budget Operation, 1989-2000	159
Table V.5. Structure and Growth of Population and Labor Force, 1976-2000.....	169
Table V.6. Inflation by Markets and Sectors, 1976-87	173
Table V.7. Share of Markets in Internal Trade by Sectors, 1976-87	174
Table V.8. Share in Total Non-Agricultural Employment of Productive Activities, 1989-97	176
Table V.9. Growth and Share of Non-State Sector in Total Employment of Non- Agriculture, 1989-97.....	177
Table V.A.1. Macroeconomic Indicators, 1976-2000	186
Table V.A.2. State Budget Operation, 1976-2000.....	187
Table V.A.3. Revenue Sources of State Bank, 1976-86.....	188
Table V.A.4. Composition of Total Export, 1976-2000	189
Table V.A.5. Population and Labor Force, 1976-2000.....	190
Table VI.1. Agricultural NI and GDP, 1976-85.....	197
Table VI.2. GDP of Agriculture and Non-Agriculture, 1976-2000.....	200
Table VI.3. Growth of NI, 1976-86.....	201
Table VI.4. GDP of Agriculture and Non-Agriculture, 1976-2000.....	201
Table VI.5. GDP Deflators, 1976-2000	203
Table VI.6. Proportion of Intermediate Inputs in Total Output, 1976-85.....	204
Table VI.7. Gross Output Classified by Sectors, 1976-2000.....	205
Table VI.8. Delivery of Agricultural Goods to the State, 1976-88.....	208
Table VI.9. Share of State and Private Sectors in Agricultural Retail Trade, 1976-88	209
Table VI.10. Agricultural Marketed Surplus, 1976-88	210
Table VI.11. Consumption of Agricultural Goods at Retail Prices, 1989-2000.....	212
Table VI.12. Consumption of Agricultural Goods at Producer Prices, 1989-2000	214
Table VI.13. Share of Agriculture and Non-Agriculture in Total Consumption of Agricultural Goods, 1989-2000.....	215
Table VI.14. Consumption of Agricultural Goods by Sectors, 1989-2000.....	216
Table VI.15. Gross Output of Agro-Processing Industry and Other Non-Agricultural Sectors, 1989-2000	217
Table VI.16. Intermediate Inputs Transferred from Agriculture to Non-Agriculture, 1989-2000.....	219
Table VI.17. Direct Agricultural Exports, 1989-2000	220
Table VI.18. Indirect and Total Agricultural Export, 1989-2000	221
Table VI.19. Agricultural Marketed Surplus, 1989-2000.....	222
Table VI.20. Delivery of State Farms, 1976-88.....	224

Table VI.21. Distribution of Agricultural GDP, 1976-2000	225
Table VI.22. Factor Income Inflows to Agriculture, 1976-2000	227
Table VI.23. Net Factor Income Outflows from Agriculture, 1976-2000.....	229
Table VI.24. State Investment, 1976-2000.....	230
Table VI.25. Deposits Held by Agricultural Sector, 1975-2000.....	231
Table VI.26. Change in Cash Hold by Agricultural Sector, 1976-2000.....	234
Table VI.27. Investment by Agricultural Institutions in Non-Farm Activities, 1989- 2000.....	235
Table VI.28. Capital Outflows from Agriculture, 1976-2000.....	236
Table VI.29. Credit to Agricultural Sector, 1976-89	237
Table VI.30. Outstanding Credit to Agricultural Sector, 1990-95.....	238
Table VI.31. Outstanding Credit to Agricultural Sector, 1996-2000	239
Table VI.32. Registered Capital of FDI, 1988-2000	240
Table VI.33. Flows of FDI into the Agricultural Sector, 1988-2000	241
Table VI.34. Private Capital Inflows to Agriculture, 1976-2000.....	242
Table VI.35. Net Private Capital Outflows from Agriculture, 1976-2000.....	243
Table VI.36. State Current Expenditure in Agriculture, 1976-2000	245
Table VI.37. Commodity Side of ISRFs at Current Prices, 1976-2000	248
Table VI.38. Real ISRFs at Domestic Prices, 1976-2000.....	254
Table VI.39. Real ISRFs Compared to the World Terms of Trade, 1976-2000	256
Table VI.40. Financial Side of ISRFs at Current Prices, 1976-2000	260
Table VI.A.1. GDP by Expenditure, 1976-2000	263
Table VI.A.2. GDP, GNP, Gross National Disposable Income (NDI), Consumption & Saving, 1976-2000	264
Table VI.A.3. Total Income of Agricultural Sector, 1976-2000.....	265
Table VI.A.4. Household Gross Disposable Income by Sectors, 1989-2000	266
Table VI.A.5. Money Demand, 1975-2000.....	267
Table VI.A.6. Household Deposits in the Banking System, 1975-2000.....	268
Table VI.A.7. Sources of Monthly Agricultural Household Income, 1976-88	269
Table VI.A.8. Sources of Monthly Agricultural Household Income, 1989-99	269
Table VI.A.9. Monthly Expenditure of Agricultural Households.....	270
Table VI.A.10. Monthly Income, Expenditure and Saving of Agricultural Households	271
Table VI.A.11. Monthly Income, Expenditure and Saving of Non-Agricultural Households.....	272
Table VI.A.12. Labor Force Classified by Sectors, 1976-99.....	273
Table VI.A.13. State Employment Classified by Sectors, 1976-2000	274
Table VI.A.14. Population Classified by Sectors, 1976-2000	275
Table VI.A.15. Commodity Side of ISRFs at Current Prices, 1976-2000	276
Table VI.A.16. Commodity Side of ISRFs at Current Prices, 1976-2000	277
Table VI.A.17. Commodity Side of ISRFs at Current Prices, 1976-2000	278
Table VI.A.18. Financial Side of ISRFs at Current Prices, 1976-2000	279
Table VI.A.19. Financial Side of ISRFs at Current Prices, 1976-2000	280
Table VI.A.20. Financial Side of ISRFs at Current Prices, 1976-2000	281
Table VI.A.21. Real ISRFs at Domestic Prices, 1976-2000	282
Table VI.A.22. Real ISRFs Compare to the World Terms of Trade, 1976-2000	283

Table VI.A.23. Agricultural Terms of Trade, 1976-2000 (GDP Deflator 1992 = 100)	284
Table VI.A.24. Agricultural Terms of Trade, 1976-2000 (CPI 1992 = 100)	285
Table VI.A.25. Agricultural Terms of Trade, 1976-2000 (world market prices 1992 = 100)	286
Table VI.A.26. Prices of Rice and Urea, 1989-2000	287
Table VI.A.27. Deviation between CPI-Based and GDP Deflator-Based Terms of Trade, 1976-2000	288
Table VI.A.28. Net Agricultural Surplus and ISRFs, 1976-2000	294
Table VII.1. Agricultural Labor Productivity, 1976-99	303
Table VII.2. Composition of Agricultural Crops, 1976-2000	306
Table VII.3. Agricultural Growth Accounting, Using Jamal and Jansen's Elasticities	308
Table VII.4. Agricultural Growth Accounting, Using Nguyen and Goletti's Elasticities	309
Table VII.5. Share of Investment over Agricultural Output, 1976-2000	313
Table VII.6. Determinants of Agricultural Marketed Surplus, 1976-99	317
Table VII.7. Composition of Commodity Inflows to Agriculture	323
Table VII.8. Composition of Expenditure of Agricultural Households, 1976-99	324
Table VII.9. Channels of Financial Flows, 1976-2000	328
Table VII.10. Composition of Factor Payment Flows, 1976-2000	329
Table VII.11. Composition of State Current Expenditure in Agriculture, 1976-2000	331
Table VII.12. Composition of Agricultural Households Income in the Pre-Reform Period	337
Table VII.13. Composition of Agricultural Households Income in the Post-Reform Period	338
Table VII.14. Saving of Agricultural Sector and Agricultural Households, 1976-2000	342
Table VII.15. Composition of Capital Transfer, 1976-2000	347
Table VII.A.1. Agricultural Output and Input, 1976-2000	355
Table VII.A.2. Composition of Agricultural Crops, 1976-2000	356
Table VII.A.3. Sources of Investment in Agriculture, 1976-2000	357
Table VII.A.4. Composition of State Investment in Agriculture, 1976-99	358
Table VII.A.5. Composition of Total and State Investment Classified by Sector, 1976-2000	359
Table VII.A.6. Factor Affecting the Commodity Side of ISRFs, 1976-2000	360
Table VII.A.7. Saving of Agricultural Sector and Saving of Agricultural Households, 1976-2000	361
Table VII.A.8. Composition of Agricultural Marketed Surplus, 1976-88	362
Table VII.A.9. Composition of Agricultural Marketed Surplus, 1989-2000	362

LIST OF FIGURES

Figure III.A.1. Economic Growth, 1976-2000	103
Figure III.A.2. Inflation, 1976-2000	104
Figure III.A.3. Food Production per Capita, 1976-2000 (kg)	104
Figure V.1. Growth, Investment and Saving, 1976-2000	148
Figure V.2. Composition of GDP by Uses and Agricultural Export, 1976-2000	165
Figure V.3. Composition of Population and Labor Force, 1976-2000	167
Figure V.4. Growth of Population and Labor Force, 1976-2000	168
Figure V.5. Wage of State Administrative Staffs and Workers, and Terms of Trade, 1976-2000	172
Figure V.6. Monthly Real Wages in Non-Agricultural Sector, 1990-2000	178
Figure VI.1. Commodity Side of ISRFs as Share of Agricultural Output, 1976-2000	248
Figure VI.2. Terms of Trade, 1976-2000 (index, 1992 = 100)	251
Figure VI.3. Real Net Resource Inflows, 1976-2000	254
Figure VI.4. Real Net Resource Inflows Compared to the World Terms of Trade, 1976-99	256
Figure VI.5. Composition of Net Resource Inflows as Share of Agricultural GDP, 1976-2000	259
Figure VII.1. Growth Pattern of Agricultural Labor Productivity, 1976-99	302
Figure VII.2. Total and State Investment in Agriculture, 1976-2000	312
Figure VII.3. Composition of State Investment in Agriculture, 1976-99	314
Figure VII.4. Determinants of Agricultural Marketed Surplus, 1976-2000	318
Figure VII.5. Purchases of Non-Agricultural Goods by Agricultural Institutions, 1976- 2000	322
Figure VII.6. Channels of Financial Flows, 1976-2000	327
Figure VII.7. Financial Deepening, 1986-2000	348

LIST OF SYMBOLS

a	Higher proportion of agricultural product in the exchange with non-agricultural product in the domestic market, compared to that in the world market, due to the policies of setting relatively low prices for agricultural product in the domestic market
A	Matrix of intermediate demand of activities
A_{aa}	Intermediate inputs transfer from agriculture to agriculture
A_{an}	Intermediate inputs transfer from agriculture to non-agriculture
A_{and}	Transfer of agricultural intermediate inputs for direct use in non-agricultural sector (excluding agro-processing industries)
A_{anp}	Transfer of agricultural intermediate inputs for use in non-agricultural sector (excluding agro-processing industries) indirectly through agro-processing industries
A_{na}	Intermediate inputs transfer from non-agriculture to agriculture
A_{nn}	Intermediate inputs transfer from non-agriculture to non-agriculture
AS	Net agricultural saving surplus, measured as the net capital transfer from agriculture to other sectors of the economy
b	Higher proportion of agricultural product in the exchange with non-agricultural product in the domestic market, compared to that in the world market, due to the relative inefficiency of domestic agricultural trading firms
C	Consumption, i.e. current expenditure by institutions on output of activities
C_a	Consumption of agricultural goods at purchaser price
C_{aa}	Self-consumption of agricultural goods by agricultural institutions
C_{ad}^f	Direct consumption of agricultural goods without processing
C_a	Consumption of agricultural goods at producer price
C_{ag}	Purchases of agricultural consumption goods by the government
C_{an}	Purchases of agricultural consumption goods by non-agricultural institutions
C_{ap}^f	Consumption of agro-processing goods at purchaser price
C_{ap}	Consumption of agro-processing goods at producer price
C_{na}	Purchases of non-agricultural consumption goods by agricultural institutions

C_{ng}	Purchases of non-agricultural consumption goods by the government
C_{nn}	Purchases of non-agricultural consumption goods by non-agricultural institutions
D_a	Deposits held by agricultural institutions on the banking system
D_h	Deposits held by household sector on the banking system
DS	Domestic saving; $DS = GNP - C$
DY_{ah}	Gross disposable income of agricultural households.
It is assumed that $DY_{ah} = Y_a$	
DY_h	Gross disposable income of household sector
DY_{nh}	Gross disposable income of non-agricultural households
E	Total export to abroad
E_a	Export of agricultural products to abroad
E_{ad}	Direct export of agricultural product
E_{ap}	Indirect export of agricultural product through agro-processing industries
E_n	Export of non-agricultural products to abroad
F	Factor income payment made by activities
F_a	Agricultural value-added
F_{aa}	Agricultural value-added retained by agricultural institutions
F_{an}	Non-agricultural value-added distributed to agricultural institutions
F_{ga}	Agricultural value-added distributed to the government
F_{gn}	Non-agricultural value-added distributed to the government
F_{gsa}	Delivery from State farms to the State
F_n	Non-agricultural value-added
F_{na}	Agricultural value-added distributed to non-agricultural institutions
F_{nn}	Non-agricultural value-added retained by non-agricultural institutions
GDP	Gross domestic product
GDP_a	Agricultural gross domestic product
gdp_a	Share of agriculture over total GDP
GDP_{af}	Gross domestic product of agriculture and forestry
GDP_n	Non-agricultural gross domestic product
gdp_n	Share of non-agriculture over total GDP
GNP	Gross national product; $GNP = GDP + NFP$

GO	Gross output
GS	Gross national saving; $GS = NDI - C$
I	Investment, i.e. capital expenditure by institutions on output of activities, including stock-building
I_1	Investment in Department I that produces investment goods
I_2	Investment in Department II that produces consumption goods
I_{aa}	Purchases of agricultural investment goods by agricultural institutions
I_{ag}	Purchases of agricultural investment goods by the government
I_{an}	Purchases of agricultural investment goods by non-agricultural institutions
I_{na}	Purchases of non-agricultural investment goods by agricultural institutions
I_{ng}	Purchases of non-agricultural investment goods by the government
I_{nn}	Purchases of non-agricultural investment goods by non-agricultural institutions
K	Capital transfer between institutions
K_{ag}	Capital transfer from the government to agricultural institutions
K_{an}	Capital transfer from non-agricultural to agricultural institutions
K_{ga}	Capital transfer from agricultural institutions to the government
K_{gn}	Capital transfer from non-agricultural institutions to the government
K_{na}	Capital transfer from agricultural to non-agricultural institutions
K_{ng}	Capital transfer from the government to non-agricultural institutions
M	Total import from abroad
M_a	Purchases of non-agricultural goods by agricultural institutions, including intermediate inputs, consumption and investment goods
NCT	Net current transfer from abroad
NDI	National disposable income; $NDI = GNP + NCT$
NFP	Net factor payment from abroad
NI	National Income (under MPS)
NI_a	National income contributed by agriculture
NI_{af}	National income contributed by agriculture and forestry; $NI_{af} = NI_a + NI_f$
NI_f	National income contributed by forestry

NIT_{ga}	Net agricultural production tax or net indirect tax paid by agricultural sector to the State
NS_a	Net agricultural surplus, referring to resources made available by the agricultural sector for investment within the sector itself and utilization in other sectors, including export
P_{ad}	Price of agricultural product in the domestic market
P_{aw}	Price of agricultural product in the world market
P_{nd}	Price of non-agricultural product in the domestic market
P_{nw}	Price of non-agricultural product in the world market
Q	Gross output
Q_a	Agricultural gross output
Q_n	Non-agricultural gross output
Q_{no}	Gross output of non-agricultural sector (excluding agro-processing industries)
Q_{np}	Gross output of agro-processing industries
R	Net resource outflows (in terms of physical goods only) from agriculture at current prices
r	Real net resource outflows from agriculture at domestic based-year prices
r^*	Real net resource outflows from agriculture, calculated by comparing the differences between agricultural terms of trade in the domestic and world markets
R'	Net resource outflows (in terms of both goods and services) from agriculture at current prices
S	Saving of institutions
s^*	Share of agricultural saving over total saving of household sector
S_a	Saving of agricultural institutions
S_{ah}	Saving of agricultural households
s_{ah}	Saving rate of agricultural households; $s_{ah} = S_{ah}/Y_{ah}$
S_g	Saving of the government
S_h	Saving of household sector
s_h	Saving rate of household sector; $s_h = S_h/Y_h$
S_n	Saving of non-agricultural institutions
S_{nh}	Saving of non-agricultural households
s_{nh}	Saving rate of non-agricultural households; $s_{nh} = S_{nh}/Y_{nh}$
T	Current transfers between institutions
T_{ag}	Current transfer from the government to agricultural institutions
T_{an}	Current transfer from non-agricultural to agricultural institutions

T_d	Price ratio between agricultural over non-agricultural products (agricultural terms of trade) in the domestic market; $T_d = P_{ad}/P_{nd}$
T_{ga}	Current transfer from agricultural institutions to the government
T_{gn}	Current transfer from non-agricultural institutions to the government
T_{na}	Current transfer from agricultural to non-agricultural institutions
T_{ng}	Current transfer from the government to non-agricultural institutions
TT	Extraction of agricultural resources through the terms of trade mechanism, calculated at domestic based-year prices
TT^*	Extraction of agricultural resources through the terms of trade mechanism, calculated by comparing the differences between agricultural terms of trade in the domestic and world markets
T_w	Price ratio between agricultural over non-agricultural products (agricultural terms of trade) in the world market; $T_w = P_{aw}/P_{nw}$
ν	Incremental capital output ratio (ICOR)
X_a	Agricultural marketed surplus, including sales of agricultural intermediate inputs, consumption and investment goods
Y	Total income
Y_a	Total income of agricultural institutions
Y_{ah}	Income of agricultural households
Y_g	Total income of the government
Y_h	Total income of household sector
Y_n	Total income of non-agricultural institutions
Y_{nh}	Income of non-agricultural households
α	Proportion of initial investment devoted to Department I or average investment (saving) rate
α'	Marginal investment (saving) rate
ΔD_a	Changes in deposits held by agricultural institutions on the banking system
ΔD_{ah}	Changes in deposits held by agricultural households on the banking system. It is assumed that $\Delta D_{ah} = \Delta D_a$
ΔD_h	Changes in deposits held by household sector on the banking system
ΔD_{nh}	Changes in deposits held by non-agricultural households on the banking system

LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AFTA	ASEAN Free Trade Area
ALP	Agricultural Labor Productivity
ASEAN	Association of Southeast Asian Nations
BIDV	Bank for Investment and Development of Vietnam
CIEM	Central Institute for Economic Management (of Vietnam)
CMEA	Council of Mutual Economic Assistance
CPI	Consumer Price Index
DRV	Democratic Republic of Vietnam
FAO	Food and Agriculture Organization of the United Nations
FYP	Five Year Plan
GAO	United States General Accounting Office
GOLA	General Office of Land Administration (of Vietnam)
GSO	General Statistical Office (of Vietnam)
IDS	Institute of Development Studies
IEA	International Economic Association
IFPRI	International Food Policy Research Institute
ILO	International Labor Organization
IMF	International Monetary Fund
ISRF	Intersectoral Resource Flow
ISS	Institute of Social Studies
IWE	Institute of World Economy (of Vietnam)
MAFPI	Ministry of Agriculture and Food Processing Industry (of Vietnam)
MARD	Ministry of Agriculture and Rural Development (of Vietnam)
MPI	Ministry of Planning and Investment (of Vietnam)
MPS	Material Product System
NCSSH	National Center of Social Sciences and Humanity (of Vietnam)
NEP	New Economic Policy
ODA	Official Development Assistance
OECD	Organization of Economic Cooperation and Development
OVG	Office of Vietnamese Government
PCF	People's Credit Fund
SAM	Social Accounting Matrix
SBV	State Bank of Vietnam

SD	Statistical Data
SIDA	Swedish International Development Agency
SNA	System of National Account
SOCB	State-Owned Commercial Bank
SOE	State-Owned Enterprise
SPC	State Planning Committee (of Vietnam)
SRV	Socialist Republic of Vietnam
SSE	Stockholm School of Economics
SYB	Statistical Yearbook
TFP	Total Factor Productivity
UNCTAD	United Nation Conference on Trade and Development
UNDP	United Nation Development Program
UNIDO	United Nation Industrial Development Organization
USSR	Union of Soviet Socialist Republics
VBA	Vietnam's Bank for Agriculture and Rural Development
VBP	Vietnam's Bank for the Poor
VCP	Vietnamese Communist Party
VIA	Vietnam's Institute of Agronomy
VIETCOMBANK	Vietnam's Bank for Foreign Trade
VLSS	Vietnam Living Standard Survey
VND	Vietnamese Dong (Vietnamese currency)
WIDER	World Institute of Development Economic Research

ACKNOWLEDGEMENTS

Ph.D projects are undeniably long and difficult to undertake. This thesis could not have been completed without the support of many people. However, I take all responsibility for the information, interpretation and arguments presented in this thesis.

First of all, I would like to reserve a special space for my late teacher - Dr. Nguyen Ngoc Luu. I had never imagined myself following an intellectual career before I met Dr. Nguyen. He inspired me to think about social problems, and opened my mind to the world of development studies. I am grateful for his strict guidance and constant support. I am also grateful to his family, who has supported me in countless ways during the time I stayed in Holland.

I would also like to thank my promoters Professor Marc Wuyts and Professor Ashwani Saith for their continuous support and during the long and hard process of completing this thesis. Professor Marc Wuyts has been an excellent recipient of my thesis, and has offered invaluable insight throughout the process. Professor Ashwani Saith has opened new perspectives for my analysis, and I am thankful for his rigorous suggestions.

I would like to thank Ben White, Eric Ross and Graham Pyat for their course work assistance during my first year in the Ph.D program. I also acknowledge the intellectual support of the ISS academic staff. I am especially thankful for the help from Massoud Karshenas, Karel Jansen, Howard White, Truong Thanh Dam, and Max Spoor.

I am grateful for the generous support from the Netherlands Fellowship Program of the Ministry of Foreign Affairs. I am also indebted to many ISS administrative staff members that have made my stay in the ISS such a pleasant experience. I would like to give special thanks to Dita Dirks, Maureen Koster, Ank van den Berg, and Linneke Warnars.

As for the fieldwork in Vietnam, I would like to thank Mr. Lam Ngoc Hai, the former Head of General Information Department of Vietnam's General Statistical Office, for giving me access to crucial sources of data. Special thanks also go to my friends working for Vietnam's Ministry of Agriculture and Rural Development for collecting various reading materials on Vietnam: Tran Cong Thang, Pham Thi Ngoc Linh, Pham Quang Dieu and Pham Sy Hieu. I also acknowledge the support of Vietnam's Library of Social Science for data and information collection.

I am also grateful to have had such good friends who have supported me throughout this process, including Mathew Kurian, Claudias Preville, Le Thi Van Hue, Nguyen Huu Dzong, Nguyen Van Phuc and Omu Kakujaha-Matundu.

I would like to thank my family for their enormous support. They have helped me in countless ways. My love and dedication goes to my dear parents, who have been always the biggest supporters in my life. I also would like to reserve a special space for my lovely wife and my wonderful son, who have encouraged my strength and perseverance throughout the long and lonely Ph.D process.

Nguyen Do Anh Tuan

June 2006

1 Introduction

1.1. Rationales

Since the earliest stages in the study of economics, the interaction between agriculture and industry has been recognized as a central issue. As expressed by Martin (1991: 43-4):

In political economics, the relations between industry and agriculture have been debated intermittently for well over 200 years. Hence, I think that at least a brief historical reminder is appropriate. In 1767, Sir James Stewart sharply attacked the rural bias of the then dominated French school of Physiocrats and for the sake of a 'proper' balance between agriculture and industry advocated a shift to the latter. Adam Smith took a similar line a little later. He was followed by Ricardo who attacked the British landed aristocracy for trying to block and sabotage industrial progress.

This interaction becomes more crucial as countries try to set conditions for industrialization and structural transformation from agrarian to industrial economies. During this process, the major problem is to determine from which sector resources should be extracted to finance industrialization, given limited resources from abroad¹.

Since the country's reunification in 1975, Vietnam has been strategizing for a structural transformation from a poor agrarian country to an industrialized one. The key question of external and internal resource mobilization for capital formation has always pressed Vietnam's policy makers.

For external capital mobilization, it is claimed that foreign aid, especially from the former Eastern European socialist countries under the Council of Mutual Economic Assistance (CMEA), financed a significant proportion of capital expenditure under the centrally planned system during 1975-88 (Spoor 1988). With Vietnam's economic reform, subsequent introduction to a market economic system in 1989, and the collapse of the CMEA, the country witnessed the decline and end of those external resource inflows. Yet, in the earliest period of the reform, Viet-

nam was successful in calling for the contribution of foreign capital in the forms of ODA, government loans and, especially, foreign direct investment (FDI), which amounted to 40 percent of gross investment. FDI alone accounted for about 30 percent of gross investment during 1994-97, when growth rate was 9 percent - higher than any year since the country's reunification in 1975 (Sepehri and Akram-Lodhi 2002, World Bank 1995a, 1997).

Nevertheless, in the medium- and long-term, the significance of external finance will decline². Even in the short-term, FDI inflow to Vietnam has been declining since 1996 as market 'niches' in Vietnam have been significantly explored and foreign investors have faced many difficulties both due to the poor infrastructure and complicated procedures made by Vietnamese authorities. By March 1998, US\$ 681 million of FDI was delayed or suspended due to the financial crises and currency devaluations in the East Asian region³. By giving more favorable treatment to foreign investors, Vietnam's government hopes to maintain the existing FDI and not to grasp new FDI. Investment rate decreased considerably in 1998-2000 as a result of declining FDI, which currently accounts for less than 20 percent of gross investment. This stunted economic growth to 5 percent during 1998-2000. In order to double the income per capita in the 10 years of 2000-10, Vietnam needs to maintain the investment rate at more than 30 percent. Due to the decline in FDI, Vietnam must reopen and re-evaluate the search for internal resources to finance industrialization.

As a result, internal resource mobilization for industrialization has raised much concern to Vietnam's policy makers, in which the balance between agriculture and industry has always been of great academic and strategic interests⁴. Currently Vietnam is facing miscommunication between the ruling Vietnamese Communist Party (VCP) and the agricultural farmers. The VCP realizes there needs to be a promotion of 'the internal strength of the country', which is constituted by the mobilization of internal capital. However, since the farmers lack the capital in this interaction, they always request 'credit, credit, credit!'

This situation reflects the conflict between the choices and constraints in policy-making for the VCP and the State⁵. Guided by Marxist-Leninist ideologies, the VCP prefers quick industrialization, hence requiring policies to squeeze the agricultural sector for rapid industrial

capital accumulation⁶. In contrast, the power base of the VCP has historically been attached in the peasantry and in the grassroots populace of hamlets and villages. This has caused tension in policy decisions regarding the interaction between agriculture and industry in Vietnam. On the one hand, the Party's policies pay due attention to the rural population, who still predominately live off of an underdeveloped agricultural system. On the other hand, the goals of building industrialized socialism remained the top priority on the agenda. As a result, Vietnam's development strategies are being tensely suspended between the immediate needs to improve the welfare of the rural population and the ambitions of quick industrialization.

In this context, this study explores the following questions:

1. To what extent has Vietnam's agriculture been mobilized to finance industrialization?
2. What are the determinants for this resource contribution?
3. What is the relationship between resource contribution from agriculture and macroeconomic performance in Vietnam?

1.2. Objectives

The following study aims to achieve four objectives:

1. To estimate the intersectoral resource flows (ISRFs) between agriculture and industry in Vietnam
2. To find out the determinants of ISRFs through the case of Vietnam
3. To set up the macroeconomic and institutional context of the ISRFs in Vietnam
4. To draw policy implications

1.3. Timeframe of the Study

The period of 1976-2000 was chosen for two reasons. *First*, since the country was reunified in 1975, economic data has only been collected effectively for the entire country since 1976.

Secondly, during the period 1976-2000 Vietnam's economy faced fundamental changes. The period in this study can be divided into two sub-periods. The first period is from 1976 to 1988 (called the 'pre-reform' period), which is characterized by the centrally planned socialist mode of production, which prioritized the development of heavy industries. The latter period spans from 1989 to 2000 (called 'post-reform' period), which witnessed a drastic move towards the development of a functional market economy. This period is defined by an increased emphasis on the development of agriculture, light industries, and the export sector. These changes have impacted the interaction between agriculture and industry and the direction and magnitude of the resource flows between sectors. It is, therefore, expected that important economic theoretical and policy implications be extracted from the analysis of the changes in macroeconomic aggregates, institutional frameworks, and resource contributions by the agricultural sector from Vietnam's pre- to post-reform periods.

In order to analyse the changes between the pre- and post- reform periods, a historical context must be briefly outlined⁷.

During 1976-88, Vietnam's economy was characterized by the centrally planned socialist model, in which the State played the dominant role in resource mobilization and allocation. The central State controlled most of industrial sector through State-owned enterprises (SOEs) particularly concentrated in heavy industries, although local management for handicrafts and light industries was maintained. Collective system dominated the agricultural sector, where cooperatives controlled all the land, labor, means of production, and surplus agricultural products. Banking systems were also monopolized by the State. Banks existed solely as accountant units. Saving mobilization capability was very limited. The bank functioned to finance the State budget and SOEs. Internal trade was restricted extensively under the control of State trading agencies. External trade was limited mostly within the CMEA block, in which the Soviet Union was the most important trade partner and the biggest source of foreign aid for Vietnam. Price was fixed by the State, the work-point sys-

tem was applied to the agricultural cooperatives while urban consumer followed the rationing system of distribution. Under this institutional framework, the State focused on the development of heavy industries by mobilizing and allocating resources primarily for this sector. This economic model, however, rendered poor economic performance with low growth, high inflation, food shortages, and serious economic imbalance.

The economic crisis in the mid-1980s was the major cause for the *Doi Moi* (economic reform) initiated in the Sixth Congress of the VCP, held in December 1986. Yet, it is broadly agreed that the effects of the reform and the changing nature of Vietnam economy was firmly established only from 1989. The reform was aimed towards market liberalization, privatization, stabilization and export promotion. This fundamental reform created changes in policy measures even more drastically than the usual package of Structural Adjustment and Stabilization Program. Notably, Vietnam did not receive any direct support from the World Bank and IMF in the early phase of its economic reform process. In general, the *Doi Moi* was a pragmatic economic reform that did not attempt to cause any significant change in the political system dominated by the VCP. The ultimate purpose of the reform initially was to stabilize the economy under high inflation and economic imbalance by increasing output of food and industrial consumption goods, and promoting export.

In the post-reform period, the rationing system was abolished. Price liberalization was accompanied by the opening of markets for both internal and external trade. With the stabilization program in place to reduce budget deficit, direct subsidies to State-owned enterprises ended. SOEs were given autonomy in doing business and were gradually given equal footing in the economy. Under Resolution No. 10 in 1988, the co-operative system was dismantled. Peasant households became the dominant economic agents in rural area. Land was relocated to peasant household with long-term land-use-rights. They owned all surplus from production, and were free to sell it in the free markets. The mono-bank system was abandoned for a two-tier financial system, which played a more active role in mobilizing and allocating resources in the economy. Nominal interest rate was kept at high level to ensure positive real interest rate. The opening of FDI inflows and resumption of World Bank and IMF loans to Vietnam in the early 1990s brought important financial re-

sources for the country. More importantly, in the new Constitution issued in 1992, the State officially opened access for the development of private sector. Consequently, the market-oriented reform since 1989 has brought about good economic performance. Economic growth was relatively high along with low inflation and food surplus for export in the post-reform period.

1.4. Problem Statements and Hypotheses

Both intellectuals and policy makers agree that the centrally planned system in place during 1976-88 could not have stimulated steady growth while being primarily invested in the heavy industries. In this system, the development of centrally-managed SOEs in heavy industries was limited by two factors. First, immediately after the war, the development of heavy industry was dependent on high imports of investment goods financed by foreign aid from CMEA countries, particularly the Soviet Union. Second, the emphasis on heavy industry growth was ensured only if the State could have monopolistic controls over food, consumption goods, and other intermediate inputs supplied by agriculture and light industry, in order to utilize the existing capacity of SOEs in heavy industries.

On the one hand, the development of the heavy industry brought high investment rates, subsequent high saving rates and exorbitant tax burdens on agricultural cooperatives and locally-managed light industry SOEs, causing a drastic depression in consumption to subsistence levels. In addition, the high saving rate could be generated by setting low terms of trade against agriculture. As most of State budget was contributed by the centrally-managed SOEs in heavy industries, the low prices of wage goods and intermediate inputs from agriculture also enhanced the dominant power of the State to control the economy. These all together required the procurement system to be set up with the monopolistic State trading agencies. On the other hand, attention had also been paid to the development of agriculture, which was intended as the basis of large-scale collectivization with massive investment from the State, and on the basis of the establishment of large-scale State-farms for export.

Under this development strategy, economic structure was imbalanced, however, and led to serious shortages of food and other consumption

goods. The free market emerged spontaneously within the centrally planned system. By offering higher prices, this market eroded the monopoly power of State trading agencies. However, due to foreign aid, the centrally planned system continued to operate. The withdrawals of Chinese and Western aid in the late 1970s left Vietnam with serious shortages of food and consumption goods. Though it was covered somewhat by CMEA foreign aid, such shortages were not addressed as most of CMEA aid was to finance the import of investment goods and intermediate inputs⁸. Because exports, mostly coming from natural resource exploitation and agriculture, were limited, it was very difficult for the State to import food and consumption goods that were not supplied sufficiently by domestic production. As a result, "fence-breaking" became widespread and eroded the central control of the State over resources further.

The critique of the centrally planned model in Vietnam argued that it was not applicable as long as the macroeconomic structure was imbalanced⁹. The underdevelopment of agriculture was the main cause for the shortages of food and other consumption goods. In addition, the failure of agriculture to supply foreign exchange earnings was the main obstacle for the utilization of SOEs' capacity as it constrained the import capability of important intermediate inputs and consumption goods. The stagnation in agricultural production was attributed to four factors. First, investment was not sufficient to push up agricultural growth. Second, resources were squeezed from agriculture by imposing high tax rates and setting low terms of trade for agricultural products. Third, the egalitarian distribution of income and mismanagement in agricultural cooperatives gave low incentives for agricultural growth and wasted resources. Fourth, the underdevelopment of light industries and shortages of industrial consumption goods discouraged peasant households to exchange with State trading agencies.

The intensive reform since 1989 had totally changed the nature of Vietnam's economy. The market mechanism replaced mandatory planning in resource allocation. From the perspective of the VCP, this reform liberalized all productive forces and utilized all slack in the economy, leading to high economic growth. The role of the State in resource allocation became increasingly limited as it aimed to achieve economic stabilization. In addition, the reform significantly improved incentives

for economic units, or in other words, it utilized resources more efficiently. Further more, the declining role of the State budget crowded in domestic private and foreign resources to finance development.

Nevertheless, it is not entirely clear whether the post-reform period actually witnessed any change in the direction and magnitude of resource allocation between sectors or whether the successful performance of the economy was mostly the result of improved utilization of resources within sectors. Some speculations need to be made in an attempt to clarify the views of the so-called 'conservatives' and 'reformists' on this issue among the members of the VCP and the intellectual community.

On the conservative side¹⁰, State intervention has tried to drive more resources for agricultural development since the reform program in 1986 prioritized the three programs of food, consumption goods and export. Particularly, investment priority was planned to move from heavy industry to agriculture and light industry. More importantly, price liberalization in 1987-89 increased the terms of trade for agricultural products considerably. It may be argued further that such changes brought the increased availability of food, consumption goods, and foreign exchange that was necessary in stabilizing the economy. This increase in agricultural production had important effects on industrial growth as it maintained a stable supply of wage goods, intermediate inputs, and foreign exchanges needed for the import of industrial sector. Moreover, as growth was constrained by demand shortages, the State made efforts to promote agricultural growth and rural industrialization in order to address the problem of low rural income. As a result, the reform succeeded in improving efficiency of resource utilization within sectors and resource allocation between sectors. Further economic growth would mainly require the expansion of investment. The conservatives imply that economic policies should be more open to FDI and encourage the mobilization of domestic saving through financial institutions for investment in the industrial sector, particularly in industrial SOEs.

In contrast, the reformists often saw few changes in resource allocation between sectors in the post-reform period¹¹. Reformists argue that the State still tried to protect SOEs that mostly concentrated in heavy and import-substitution industries (Dapice 2003, Kokko 1997, Kokko and Zejan 1996, Luong, V.H. 1992, Mashina 2002, Watts 1998). This premise was based on five points:

- Despite the reform's success in improving agricultural terms of trade, the state's monopolization of the agricultural export continued to squeeze agriculture. Combined with the overvalued exchange rate, this lowered the prices paid to peasant households, in comparison with agricultural prices in the world market.
- Tax burdens and other contributions to the State still threatened the earnings of peasant households.
- Although investments from the State budget did decrease, the State still used direct credit from State-owned commercial banks (SOCBs), playing a key role in the financial sector, to support SOEs. As financial resources of SOCBs came from saving of the private sector, it implies State intervention to drive resources towards SOEs.
- Most FDI participated in joint-ventures with SOEs, which were the only domestic institutions that were allowed to contribute land as capital in joint-ventures with foreign partners.
- SOEs were protected under trade regulations that favored import-substitution industries.

Overall, the reformists argued that high economic growth in the post-reform period was mainly due to the improvement of microeconomic efficiency. Further growth of the economy requires changes in the macroeconomic structure to prioritize the development of the agricultural sector.

This brief summary prompts further discussion and exploration in four topics related to the intersectoral resource flows. First, it is agreed that the State did try to extract resources from agriculture by fixing low terms of trade and high tax rates on agriculture in the pre-reform period. During the post-reform period, there was no clear solution to the questions of resource flows between agriculture and the rest of the economy. The conservatives may say that conditions had been improved for agricultural development with certain incentives from Resolution No. 10 that heightened terms of trade and increased investment from food and agricultural export programs. In contrast, the reformists claim that although agriculture may have been squeezed less after the reform, it would not necessarily lead to net resource inflows to agriculture. Simultaneously, other mechanisms had been established in the new market

system to withdraw resources from agriculture. This will be discussed further below.

Second, the reform had changed the mechanism of resource extraction from agriculture. In the pre-reform period, the major tool of the State was the procurement system that fixed low agricultural terms of trade. Such price scissors had two important results. They, first, gave the State complete control over agricultural products, particularly food, which served the demand of industrial production (in terms of labor and intermediate inputs) that had been built up by aid-financed imports of investment goods. Besides, low terms of trade allowed the State to centralize financial resources by increasing the profitability of SOEs. This was the result of low prices of inputs such as wage goods and raw materials supplied by agriculture.

In the post-reform period, extraction of resources from agriculture was done under market mechanism, instead of by the State. Because the State, however, did maintain a monopoly over agricultural exports and the overvalued exchange rate, it could still somewhat influence the agricultural terms of trade in the domestic market. In addition, financial resources could be extracted from agriculture through financial institutions as the State generated more profitable opportunities for investments in the import-substitution protected industries. Nevertheless, attention was also paid to agricultural growth that was expected to come from the liberalization of all productive forces of peasant households after de-collectivization. This implies that agricultural growth, combined with relatively low agricultural terms of trade, would have generated higher saving, higher investment, and higher overall growth in the industrial sector.

Third, important implications for further research can be drawn from the change in economic growth between the pre- and post-reform periods. Immediate questions arise over the reasons of such a change. Did the growth result from the improved efficiency of economic institutions or from the changing macroeconomic structure that increasingly prioritized agricultural development? To answer this question, the agricultural terms of trade, agricultural tax rates, and agricultural investments that accompanied economic reform, must be analysed in conjunction with changes in economic institutions.

The conservatives argued that it was the combination of both the changes in economic institutions and economic structure that brought about higher economic growth after the reform. Further growth would require increased FDI and mobilization of domestic saving for the development of industrial SOEs. In contrast, the reformists argue that the improvement in economic growth was mainly due to changes in economic institutions, and further growth would require changes in economic structure.

Nonetheless, these arguments were only based on the assumption that financial resources, directly transferred from agriculture, were the major source for non-agricultural growth. Yet, a controversy appears that if economic growth is a zero-sum game, meaning that if non-agricultural sectors grew at the expense of agriculture, it is very difficult to explain high agricultural growth in the post-reform period. It, in turn, suggests that there is a complementarity in place between agriculture and non-agriculture in the development process, implying that only with high economic growth could agriculture have played a role in industrialization.

A fourth implication questions the actual role of Vietnam's agriculture in industrialization. In the pre-reform period, the State expected that agriculture could play at least three roles: supplying enough food for the growing labor force in non-agriculture, providing a sufficient amount of intermediate inputs for industrial enterprises, and creating foreign exchange through exports, as a means of meeting the increasing demand for imports of consumption goods and intermediate inputs. In addition, the sufficient provision of wage goods was considered to be necessary for the utilization of industrial SOEs, the control of the State over commodity funds, and economic stability. Since low agricultural growth was accompanied by low non-agricultural growth in the pre-reform period, the high extraction rate of agricultural resources restricted the roles that agriculture could play in industrialization.

In the post-reform period, high agricultural growth was accompanied by high non-agricultural growth. It is argued that the dynamic agricultural growth enhanced industrialization. Agriculture began to supply food and intermediate inputs to non-agriculture, provide an important source of foreign exchanges through exports, and increase the demand for domestic industrial products. This implies that the extraction rate of agricultural resources was lessened in the post-reform period compared to that in the

pre-reform period and/or resources were utilized more efficiently in the post-reform period. It can be argued that with some net inflows to agriculture in the early stages of economic reform, the dynamic growth of agriculture itself could create financial resources for the growth of non-agriculture. It could be thus argued that the increasing rate of domestic saving and investment since 1993 may have partially come from agriculture.

Consequently, this short review of the current debate on Vietnam's economic policy gives rise to three major hypotheses for this study:

1. *There were real net resource outflows from agriculture in the pre-reform period. In the post-reform period, the extraction of agricultural resources was lessened.*

Sub-hypotheses

1.1. Price scissors were the major tool to extract agricultural resources in the pre-reform period. In the post-reform period, resource outflows from agriculture mostly came through the financial system.

1.2. The State imposed heavy taxation on agriculture in both the pre- and post-reform period.

1.3. Agricultural investment was not sufficient to increase sector growth in the pre-reform period. In contrast, in the post-reform period, the private investment exhibited higher preference in agriculture.

1.4. The State played the major role to extract agricultural resources in the pre-reform period. However, the financial contribution from agriculture mostly went through private channels in the post-reform period.

2. *High levels of resource extraction impeded agricultural growth in the pre-reform period. In contrast, decreasing extraction of resources in the post-reform period stimulated agricultural growth.*

3. *The high level of agricultural resource exploitation was the major cause for economic imbalance and low economic growth in the pre-reform period. In contrast, lessened resource extraction from agriculture enhanced economic stability and growth in the post-reform period.*

Sub-hypotheses:

3.1 Though extraction rate was high in the pre-reform period, low agricultural growth could not sustain the high volume of agricultural resource extraction. This explains why domestic saving and investment was low, and so was economic growth in the pre-reform period. In contrast, volume of resource transfer from agriculture was maintained at a higher level in the post-reform period though the extraction rate was lessened, due to higher agricultural growth. This was an important capital resource to finance industrialization in the post-reform period.

3.2. In addition, low agricultural growth in the pre-reform period prevented it from playing important roles in industrialization. These roles include supplying wage goods and intermediate inputs as well as providing foreign exchange through exports. In contrast, high agricultural growth in the post-reform period enhanced its roles in industrialization not only in terms of ensuring a sufficient amount of agricultural marketed surplus and foreign exchange, but also by establishing an increased domestic demand for industrial products.

1.5. Approach of the Study

A shortcoming of the theoretical debate as well as policy options of investment priority between sectors is the lack of empirical evidence used to understand the causal mechanism of the intersectoral resource flows (ISRFs) process along with long-term structural change. Therefore, policy suggestions are often arbitrary and misleading (Karshenas, 1995: 2). It raises three issues. First, a definition of agricultural surplus should be addressed, taking into account all kinds of flows between sectors in the economy. The estimate of this surplus requires hard work under the limitation of data availability in a specific country. This estimate is a good

starting point to re-investigate controversies in both theoretical and policy debates. Second, the issue of financing industrialization by agricultural surplus should be looked at from a specifically historical point of view. In the long-term process of structural changes, financial resources for industrialization may come from a variety of sources at different stages of development and under different patterns. Therefore, it gives rise to the third issue. Besides using the estimated result of the ISRF to clarify the theoretical debate, one should interpret it by linking it to specific constraints imposed on economic growth, development strategies and institutional framework of the studied country. This is expected to help understand both the allocation of resources between sectors and the utilization of resources within sectors.

The study will try to combine both approaches of Karshenas (1995) and Ishikawa (1988) in determining the pattern of surplus flows between sectors. Simply, policy makers can increase agricultural surplus, if they wish, by one among or both three ways: (i) raising the potentially producible aggregate output of agriculture to a maximum extent; and/or (ii) depressing both current and capital expenditure of farm households within agriculture to an essential level; and/or (iii) extracting and transferring the existing surplus. The first two ways involve with the generation of agricultural surplus. The last one concerns the extraction of this surplus.

Karshenas puts more emphasis on the generation of agricultural surplus by accelerating agricultural production to a maximum extent by enhancing factors of dynamically technological changes. These factors include incentives for producers (land, tax, and price systems), state investment and creation of opportunities for investment in agriculture. Then the transfer of this potential surplus through intersectoral boundaries depends on the opportunities and rate of return of investment between sectors. As a result, financial mechanism and institutions involved in the ISRF, adjust accordingly to reallocate the existing surplus among sectors. Hence, for Karshenas, the utilization of resources within each sector to maximize sectoral aggregate output is more important than the allocation of resources among sectors.

Meanwhile, Ishikawa focuses more on the extraction of surplus resources. Resource mobilization and allocation between sectors should be done in an optimal way to address binding constraints of economic

growth. For instance, Ishikawa (1988) suggests that in the initial stage of development, when food shortage is the major constraint on economic growth, resources must flow to agriculture to stimulate agricultural growth in order to provide enough food for the expansion of industrial production and employment. In addition, when the market system is underdeveloped, the government should direct the resource flows between sectors. Furthermore, he also assumes that government interventions are conditioned by the binding constraints imposed on the economy, and then government should set up an appropriate development model and mechanism of resource mobilization and allocation to address those constraints. Implicitly, Ishikawa does not take into consideration the institutional framework and the reaction of economic agents to government interventions. Therefore, no attention is paid to the impacts of government-driven intersectoral resource transfers on the generation of agricultural surplus as well as characters of development in each sector. Consequently, Ishikawa envisages that resource mobilization and allocation between sectors plays the most important role in economic development.

In Kashenas's approach, there are three major shortcomings. First, growth of agricultural production, and hence potential agricultural surplus, also depends on the momentum and pattern of development in the other sectors of the economy under different development strategies. Second, measures to extract and transfer agricultural surplus through the intersectoral boundaries largely impacts agricultural surplus, under different mechanisms of saving mobilization and resource reallocation among sectors. Third, suppose that there exists agricultural surplus, who will transfer this surplus for industrial investment under the absence of financial market? If no one does, a possible result is that this surplus will be used for consumption only. Then, the potential agricultural surplus, which is considered important for financing industrialization, will never be actualized.

On the other hand, Ishikawa's sole emphasis to contextualize ISRF process under development strategies and saving mobilization mechanisms raises three criticisms. First, he does not explain clearly how agricultural surplus can emerge. Second, the effects of government-driven intersectoral resource transfers on the generation of agricultural surplus are not addressed in Ishikawa's work either. Third, no analysis is placed

on the behavior and reaction of institutions that generate, extract and transfer agricultural surplus.

As a result, the study cannot look at only the intersectoral resource flows *per se*. Instead, investigation on ISRFs should be closely linked to specific constraints imposed on economic growth. In addition, those constraints should be defined in a specific model of economic development, which in turns take its own mechanism of resource mobilization and allocation between sectors. This point is particularly important for this study, which tries to investigate changes in the direction, magnitude and patterns of ISRFs from the centrally planned to the market-oriented economy in Vietnam.

It should be noted that the actual direction and magnitude of ISRFs is not always the result of policy intention in a specific economic model. This is because the pure statistical study of ISRFs only can show the *ex-post* result, rather than the *ex-ante* implications for the intersectoral resource mobilization and allocation and its impacts on economic growth. Therefore, we need to clarify policy intention on the direction and pattern of ISRFs from its inception.

It is also worth noting that policy intention does not always serve to address the binding constraints on economic growth because this intention may be strongly affected by other factors. These factors include political forces and/or international environment, and should be referred to as the background for the analysis. In addition, for a specific study devoted to the interaction between agriculture and industry, the actual constraints imposed by agriculture on industrial growth should be clearly determined.

Furthermore, government interventions on ISRFs are also challenged by the institutional constraints on the generation and extraction of resource surplus. An incorrect policy intention that deals with the binding constraints on economic growth may still lead to a right *ex-post* pattern of ISRFs for economic growth and *vice versa*. This is due to the unintended effects of policy interventions on economic institutions and development within each sector of the economy. Therefore, policy implications from the study should consider carefully the relationship between economic performance and development strategies in a close connection with actual binding constraints imposed by agriculture on economic growth, *ex-*

post results of the intersectoral resource flows and institutional framework.

Consequently, four points will be concerned to analyse and draw policy implications from the estimate of intersectoral resource flows in Vietnam. *First*, we need to determine the points in time that mark the shift in socio-economic development (hence alter the background), including initial conditions, intended development strategies, institutional framework and actual economic performance. *Second*, upon these premises, *inter alias*, mechanism of saving mobilization and resource reallocation among sectors will be sketched out. *Third*, we need to determine the actual constraints imposed by agriculture on industrial growth. *Fourth*, analysis on the *ex-post* result of ISRFs should take into account the impacts of policy interventions on the generation and transfer of resource between sectors under specific institutional framework.

1.6. Structure of the Study

After the Introduction, the Thesis will go through seven chapters. Chapter 2 reviews the theories in the interaction between agriculture and industry in development process. Concentration is put on structural view that asserts the distinction between agriculture and industry in the development process. The chapter concludes by showing key points that should be focused on in an empirical investigation of the interaction between agriculture and industry. Chapter 3 shows the background of the study, which specifies the initial conditions, development strategies and changes of economic institutions in Vietnam during 1976-2000. This description has important implications that help set up the analytical framework in the next chapter. In Chapter 4, first the accounting framework for the ISRFs is constructed. Next, it specifies the analytical framework for ISRFs in the case of Vietnam by outlying factors affecting the direction and magnitude of ISRFs in the pre- and post-reform period. Chapter 5 deals with macroeconomic aggregates, roles of agriculture and the interrelationship between agricultural growth and economic performance in Vietnam during 1976-2000. In Chapter 5, firstly the mechanism of resource mobilization and relocation is specified for the pre- and post-reform period. With this method, it characterizes the issue of financing industrialization in Vietnam under different development

priorities and institutional framework in each period. Secondly, the actual constraints imposed by Vietnam's agriculture on industrial development are specified for the two periods during 1976-2000. This helps to identify the necessary measures to deal with such constraints, regarding the direction and magnitude of ISRFs, in a specific socio-economic context. Chapter 6 attempts to estimate, justify and describe the trends of ISRFs in Vietnam during the studied period. Chapter 7 analyses the determinants of ISRFs, following the analytical framework proposed in Chapter 4. Chapter 8 concludes the thesis by giving conclusions and policy implications.

Endnotes of Chapter 1

¹ This problem has been raised by as far as the Russian debates in the early 1920s on the methods to appropriate agricultural surplus to finance industrialization (Bhaduri 1993, Domar 1972, Ellman 1975, Harrison 1985, Mitra 1977, Preobrazhensky 1972, and Saith 1991).

² As other developing countries, Vietnam has been calling for private foreign investment (mainly in the form of FDI) in the 1990 decade, instead of government borrowing like ODA and bilateral borrowing.

However, the caution to FDI has been noted even in the flourish year of FDI of the early 1990s. Clive Crook (*The Economist*, September 25th, 1993: 26-36) - deputy editor of *The Economist* - argued under the title 'The third world needs the global market for capital - but cannot always rely on its co-operation' that: *'Development economics has traditionally emphasized the gap between the third world's capital requirements and the saving it can generate for itself... This preoccupation with the scale and form of capital flows from the industrial countries to the third world is justified only up to a point. It matters more that the developing countries put their own saving to better use.'*

³ The financial crisis in East Asia generates three negative effects on FDI in Vietnam:

1. Most FDI in Vietnam is originated within the East Asian region, hence suffering the commonly negative effects of the financial crisis. In addition, foreign investors outside the region are doubt about the economic stability in Vietnam.
2. As neighboring countries devalue their currency, it is better if foreign investors move to their subsidiaries in other countries to reduce costs of production.
3. For export-oriented foreign investors, the existing overvalued exchange rate in Vietnam, relatively to its neighboring countries, makes its products less competitive in the export market.

For more details, see Vietnam Economic Times, March, 1998.

⁴ For instance, Do Muoi (Vietnam Communist Party 1996: 23-4) - the former General Secretary of the ruling Vietnamese Communist Party - Stated in the 8th Party's Congress in 1996 that:

'Industrial development policies should be concretely related to the development policies of the other economic sectors, in order to promote comprehensive socio-economic development. Especially [we should] concern with the formation of mutual-benefiting and equally co-operative relations between industry and agriculture between urban and rural areas, between workers and peasants in the process of industrialization and modernization.'

⁵ For more details, see Fforde (1994) and Turley (1994).

⁶ Lang (1985: 2-3) suggested that the two foremost important issues for debates within the Vietnamese Communist Party (VCP) after the country unification

were: (i) How to get financial resources to build the productive forces of socialism?; and (ii) Should priority be accorded to heavy industry or to agriculture and light industry to provide surplus for capital formation? Particularly, the VCP confronted with a serious problem of food shortage after the War, hence some attention should have been paid to agricultural sector. Nevertheless, as Lang noted, *'The problems had to be tackled not only resolutely and quickly, but within the context of an overall socialist blueprint which imposed constraints on the available courses of action.'* This subject was analysed clearly in White (1982: 8-12).

⁷ Detailed description of Vietnam's economic reform will be shown in Chapter 3.

⁸ During 1976-88, means of production (consisted of investment goods and intermediate inputs) accounted for 83 percent of total import, and investment rate followed quite well changes in import (GSO, various years).

⁹ Typical critique of centrally planned model may be seen in Truong Chinh (1986), Vo, N.T. (1990), Chu, V.L. *et al.* (1992), Fforde and de Vylder (1996).

¹⁰ For more details, see VCP (various years), Dao, D.T. (1994), Do, M. (1997), Vu, O. (1998).

¹¹ Fforde and de Vylder (1996) argue that the 1989 reform just removed the plan distortion. Further reforms are needed to remove market distortion.

2 Review of Theories on the Interaction between Agriculture and Industry

2.1. Introduction

Alternative theories¹ on the interaction between agriculture and industry always have to confront the two basic questions: (i) Is there any difference between agriculture and industry? and (ii) How do they interact with each other in the development process?

Traditionally, neoclassical economists have not been concerned with this interaction. Most emphasis has been given to micro level economic studies that focus on individual agents with given resource endowment and their pursuit of return maximization (i.e., producers maximize profits, given technological possibilities, and consumers maximize utility, given their preferences). Under the assumption of full employment of resources, economic problems are seen essentially as the result of the inefficient allocation of given resources. A perfectly competitive market is expected to solve this economic problem through price mechanisms, provided, however, that every individual has free access to the market, and is responsive to price signals. Economic growth is attributed to technological progress and capital formation. Any attempt to push up higher growth in the industrial sector will be at the expense of lowering growth in agricultural sector, *ceteris paribus*. From this neoclassical perspective, economic equilibrium will be reached after the adjustment of the terms of trade in favor of the agricultural sector. It is seen that intervention will result in the inefficient allocation of given resources, hence create deadweight loss. Therefore, neoclassical economists believe that there is no need to treat agriculture differently than any other sector in the economy.

Opposing neoclassical economics, there is a structural view that economic growth is regarded as one aspect of the transformation of the structure of production. Economic growth and development should par-

allel the entire industrialization process, including a secular decline in the importance of agriculture in the economy and a shift of resources towards non-agricultural activities². Two basic factors are responsible for this transformation process. First is the operation of Engel's law that income elasticity of demand for unprocessed food is less than one and declines with higher incomes; hence the demand for raw agricultural products grows more slowly than general consumption. Second, agricultural production can expand substantially with a declining farm labor force³. As reviewed by Martin (1991: 36), such decline in the number of farmers is 'made possible by the fact that the productivity of agriculture had increased much faster than the demand for agriculture's principle output - food - had increased with rising income. Agriculture therefore was able to release more and more people for other work.'

From this structural view of economic growth, the need to distinguish between agriculture and industry particularly in developing countries arises. This concept of 'dualism' has already been substantially discussed⁴. Generally, there are three versions of dualism, namely geographical, technological, and organizational dualism, which stem from the asymmetry between agriculture and industry in developing countries. In the simplest form, geographical dualism is reflected in the difference in location; agriculture being predominantly rural and industry mostly urban.

Technologically, agricultural products and non-agricultural products are different in kind and cannot readily be substituted for each other. The agricultural sector produces food, which, apart from some requirements for seed, can be only used for consumption. Industry produces different kinds of consumption goods as well as investment goods for use in either sector. In addition, the methods of production are quite different in the two sectors. Land is a scarce resource in agriculture meanwhile it is less important in industry. The different types of capital used in the two sectors are of unequal forms, and are not easily transferable between them. In these economies, agriculture is mostly 'traditional' and uses a 'backwards' method of production with high ratios of labor to capital and land, and very low labor productivity. Industry is relatively 'modern' and 'advanced'.

Organizationally, agriculture is largely peasant-owned, uses relatively little wage labor or rented land, and retains much of its output for self-consumption. Industry is largely capitalistic in the sense that wage labor

works with capital, whether privately or publicly owned, and the output is sold, with some consideration for profit or surplus. Peasant behavior is considered irrational in the sense that they are not responsive to changes in price and technology. They are concerned most with self-sufficiency, rather than profit maximization under the highly risky conditions of agricultural production. The high risk also prevents peasants from adopting modern technology, which may potentially increase agricultural productivity. Therefore, there is no immediate need for the peasants to voluntarily sell agricultural products, in order to buy modern inputs for agricultural production. In addition, under high population pressure on minimal land area combining with the use of backwards technology, the agricultural real wage rate is determined by institutional sharing arrangements, which reflects traditional or subsistence-related consumption patterns, rather than marginal productivity calculus. As a result, agriculture is accrued to 'non-commercialized' sector, coexisting with a 'commercialized' industrial sector.

In the long run, economic development is analogous to the disappearance of such dualism alongside industrialization, modernization, commercialization and urbanization, in which the industrial sector plays a leading role. During this process of changes, agriculture and industry interact with each other through intersectoral labor, intersectoral financial and intersectoral commodity markets.

Both classical and post-Keynesian economists follow this structural view, but from different perspectives. In classical theories, industry is seen as the leading sector for economic growth. These theories are based on the assumption of economies of scale in the industrial sector, and agricultural stagnation due to the limitation of land. Industrial growth is supply-constrained; meanwhile there exists some 'slacks' within the agricultural sector, apparent either in the idle potential saving of landlords or in surplus labor in the agricultural sector. Therefore, industrial growth can be accelerated by taking up the 'slacks' from the agricultural sector. As a result, higher economic growth may be achieved without any cost of lowering agricultural growth. In classical economics, the interaction between agriculture and industry is often seen in the intersectoral labor and intersectoral financial markets, in which agriculture helps release the supply constraints on industrial growth through providing necessary factors of production such as capital and labor.

In post-Keynesian perspectives, economic growth is demand-constrained. Although industry is still seen as the leading sector for economic growth, agriculture may set up a binding constraint as it accounts for the dominant share of the domestic market for industrial products. In addition, the market is imperfect; particularly this imperfection is more serious in developing countries, hence equilibrium growth rates between sectors cannot be settled through the terms of trade mechanism. Agricultural supply is fixed in the short-run. Increased industrial growth requires higher demand for wage goods (food), which will raise the price of food. If industrial producers adjust by increasing industrial prices to maintain a certain level of profitability (a possible option due to their monopoly power and excess capacity in the industrial sector), the whole economy will face high inflation and stagnation. Therefore, government intervention is necessary to remove obstacles imposed by market imperfection in the growth process. The binding constraints imposed by the agricultural sector need to be carefully considered. Overall, post-Keynesian economists see the interaction between agriculture and industry mainly in the commodity markets where agriculture may foster industrial growth through providing necessary inputs for industrial sector and constituting the market for industrial products.

Against this background, this chapter will mainly review classical and post-Keynesian theories, which recognize the difference and interaction between agriculture and industry in the development process. For each school of thought, this review will include its representative authors in a discussion of the possible constraints imposed by agriculture on the industrial growth process. Classical approaches to industrialization will be discussed in Section 2 and 3, regarding the financial and labor interlinkages between agriculture and industry. Section 2 will present the Russian debate, concerning the question of how to accelerate industrial growth under the saving-constraint and the limit on investment capacity. The Lewis model will be discussed in Section 3 in relation to the transfer of labor from agriculture to industry in conjunction with industrial growth under the saving-constraint. Sections 4 and 5 explore the post-Keynesian approach, which emphasizes the linkages between agriculture and industry in the commodity markets. The demand-constraint imposed by agriculture on industrial growth will be discussed in Section 4, including the 'Balanced versus Unbalanced Growth' debate, Mundle's argument, and

the models of Thirlwall and Taylor. Section 5 will present Kaleckian approach to financing industrialization, in which agriculture is exercised as the marketed-surplus constraint. In Section 6, the criticisms from Mellor on contemporary theories on the interaction between agriculture and industry will be presented. It will be shown that the majority of development intellectual thinking regards the leading role in economic growth as unique for the industrial sector. Role of agricultural sector is seen as passive in the growth process. Instead, Mellor argues for a growth strategy, which centers on the agricultural sector and addresses the prevailing unemployment in developing countries. Section 7 will end this chapter by drawing conclusions and implications for research on the intersectoral resource flows.

2.2. The Russian Debate on Industrialization under the Saving-Constraint

2.2.1. Saving mobilization in a closed economy

The Russian debate over the method of financing industrialization was one of the earliest discussions on the interaction between agriculture and industry. The Soviet Union was born out of a system at a relative low stage of industrialization, and industrial workers – the core of the revolution – were only a tiny fraction of the total population. The rural sector, although far from being fully commoditized, was significantly differentiated, and was economically and politically dominated by the rich peasantry (*the kulak*) (Saith 1991: 266). Attempts to create a centrally planned system during the War Communism had brought the revolution to the brink of disaster by the end of 1920 (Storm 1992: 25).

Under these conditions, the New Economic Policy (NEP) was introduced in the spring of 1921. Under the NEP the peasantry enjoyed major benefits. They were able to retain a larger share of what they produced, as there was a sharp decline in their compulsory obligation. Meanwhile, the urban workers were constantly threatened by food shortages, which were partially caused by the shortages of manufactured consumption goods as food producers preferred to retain marketable output rather than exchange it for cash that could not be spent (Harrison 1985: 85).

Against this background, Preobrazhensky (1972) raised the concept of ‘primitive socialist accumulation’ referring to the transfer of resources from the pre-socialist form of production into the socialist sector of the economy⁵. The socialist sector was relatively small with a few large-scale industrial enterprises. Meanwhile, agriculture - dominated by the *kulak* - counted for a large share in the economy. Hence, the transition into a socialist structure was synonymous with industrialization, and required the transfer of resources from agriculture. It was necessary for this accumulation be used for industrialization, or the development of heavy industries in the socialist sector, for the completion of three objectives. First, the development of heavy industries played a decisively important role in building the defense capacity of the country under external conflicts with the capitalist system. Second, the young socialist country gave itself the task of ‘catching up’ with the advanced capitalist countries in order to demonstrate the superiority of the socialist mode of production, in which high economic growth required a high level of accumulation and the development of heavy industries. Third, it was feared that voluntary exchange with the peasantry sector under the NEP might lead to the recovery of a small capitalist class at the expense of the socialist sector (Saith 1991).

Preobrazhensky argued that in a closed economy, the only way for the socialist sectors (i.e., industry) to expand was at the cost of the private sector through a process of unequal exchanges of material resources in which the losing private sector (i.e., mainly agriculture) delivered more resources than it received. Specifically, by making the exchange of agricultural goods for essential industrial consumption goods unfavorable for the peasants, they were made to part with the amount of agricultural surplus required for industrialization. This was done by administratively holding down agricultural prices or by imposing heavy indirect commodity taxes on essential industrial consumption goods purchased by the peasant.

Within the agricultural sector, Preobrazhensky argued, most of the burden of socialist accumulation would place on the *kulak* as they were in the position to exercise the monopsony power *vis-à-vis* the poor peasants in the labor market since opportunities for employment had not yet expanded satisfactorily in the non-farm sectors. At the same time the danger that, in response to declining terms of trade, the peasant would

cut back sales of foodstuffs or withdraw from the market altogether was averted by the introduction of a more rational farm organization

Opposing Preobrazhensky, Bukharin⁶ upheld the extension of the NEP policy, i.e., voluntarily equal exchange between industrial and agricultural sectors. His case rested on Lenin's proposition that the success of socialist transition would depend on the 'class alliance' between the proletariat and the peasantry. Particularly, an undue burden should not be put on the upper strata of the peasantry sector since the foundation of the socialist polity could be greatly endangered if cooperation was not forthcoming from the surplus-raising farmers. In addition, primitive socialist accumulation under the existing conditions in Russia meant the mobilization and militarization of labor beyond the ranks of the existing proletariat class; hence it required an increasing marketed surplus from the peasantry.

The cooperation from the peasantry, Bukharin argued, required a fair exchange between the socialist and peasantry sectors, and would naturally result in an improved peasantry, by separating the⁷ voluntarily collectivized peasantry, under the laws of the market economy, from the in-compliant peasantry. Fair prices for farm products would encourage the small peasant-proprietor to sell foodstuffs to the State and to buy modern industrial inputs. With State assistance of credit provision, small peasants would discover the advantage of this cooperation and proceed to collectivize their farms owing to the benefits of economies of scale. At the same time, the *kulak* would be at a severe disadvantage in competing with the cooperative institutions set up by the small peasants as they were denied to the assistance of the State. The *kulak* would soon begin to realize that they would lose in the competition with the cooperative institutions of small peasants, so they would be better by joining with those institutions. At this point, the socialist transition would be completed as the alliance between the small peasants and the proletariat was established.

Ellman's empirical study (1975) shows that agricultural surplus was insignificant in financing Russian industrialization (during 1928-32) in terms of commodity contribution. Most investment within the industrial sector was financed by itself. The agricultural sector mainly financed industrialization in the form of labor transfers for the industrial sector with low real wages. This was enhanced by agricultural collectivization which

made it easy to transfer labor to the urban sector and to set low terms of trade for agricultural products, particularly grains, in order to keep real wages of industrial workers low. This raised surplus within the industrial sector for investment⁸. In addition, the State established the procurement system in the agricultural sector to extract basic wage goods for the urban sector. As a result, most of shocks from bad harvests were absorbed by cooperative members as delivery rate was still kept high to ensure food for industrial workers under the rationing system.

In the Soviet Union, Harrison (1985: 96-7) observed that most of the burden of financing industrialization was put on the collective system within the agricultural sector. The majority of the State investments went to State farms and the terms of trade set for this sector were far more favorable than that of the collective sector. In China, where the commune system played the dominant role in rural areas and ensured the basic needs of the rural population, it is observed that labor mobilization contributed significantly to investment in agriculture as the State investment that funded both the State farms and the commune system was very limited (Ishikawa 1988: 305-11, Karshenas 1995: 156, Spoor 1994: 31-2). In most of socialist developing countries, Saith (1991) suggests that the majority of State investments were concentrated in some large and commercialized State farms, as the State was only interested in the marketed surplus of agriculture and not its total output. As most of the peasantry was excluded from access to food and employment in this selective commercial sector, a cleavage was created between this relatively small enclave consisting of socialist industry and commercial farms, and the isolated large group of the peasantry.

However, the peasantry was not the single victim of socialist primitive accumulation. The coexistence of the parallel markets made it difficult for the State to regulate low terms of trade for agricultural products. Ellman (1975: 849-50) shows that collectivization during 1928-32 in Russia did not turn the terms of trade against agricultural sector as agricultural prices were raised very high in the parallel markets. State rationing system only could guarantee to meet the demand for grains of industrial workers. Livestock and dairy products were very limited and sold at very high prices in the parallel markets. As a result, industrial workers had to share some part of the financing of industrialization⁹. In addition, although most of peasant households became worse off, those who still

had access to private supplies of foodstuff received many benefits from the sale in the parallel markets.

In short, the Russian debate suggests three important factors. First, in a closed economy with a proportionally small industrialized sector, industrialization cannot be successful without the contribution from the agricultural sector, either in the forms of saving surplus or marketed surplus, correlating always with labor transfers from agriculture. Second, the government may have alternative methods to mobilize resources from agriculture to finance industrialization, depending on its stance and political constraints. However, the effectiveness of those methods is strongly influenced by the establishment of institutional frameworks for such resource mobilization. Furthermore, the co-existence of the parallel (unofficial) markets and the cooperative procurement may have important implications for the impacts of 'primitive socialist accumulation' on the welfare of the industrial workers and the peasantry. Third, primitive capital accumulation is associated with socialist transformation, in which the transfer of labor from non-socialist to socialist mode of production plays the decisive role. In other words, it is suggested that the transfer of labor from agriculture may make a significant contribution to capital formation for industrialization, and provide a substantial amount of food from agriculture.

2.2.2. How to transform saving into investment goods?

Given the potential saving, the issue is how to make investment *in a closed economy* like Russia. Investment needs the availability of investment goods, which, without the possibility to import from abroad, requires the development of domestic heavy industries. This is mentioned in the Feld'man's model¹⁰ for Russia, and later in Mahalnobis's model for India.

Feld'man worked on the General Plan for long-run economic growth under the first five-year plan in Russia during 1928-33. His starting point is how to achieve the highest economic growth in a given period of time or how to shorten the period to reach a given growth rate. In his model, there are two important assumptions. First, growth is constrained by the availability of investment goods. Second, prices are constant under the planning system.

Feld'man did not concern much with the distinction between industry and agriculture. Instead, following the Marxist approach, the economy is

divided into Department I producing investment goods, and Department II producing consumption goods. Economic growth is constrained by the production capacity of Department I, which in turn depends on how far the initial investment is devoted to expansion of the capacity to produce consumption goods, and how far to expansion of investment goods. Denote α the proportion of initial investment devoted to Department I, $(1 - \alpha)$ will represent the proportion devoted to Department II. The higher the proportion of α , the faster the expansion of Department I, and the greater the availability of investment goods will be in later years. While growth in consumption will be lower, the higher α , eventually growth in Department II will speed up, as the larger size of Department I compensates for the smaller proportion of its output going to investment in Department II.

In formal terms, suppose I , C , Y represent the annual output of Department I, II and the whole economy respectively, so that $Y = C + I$, I_1 and I_2 indicate the annual investment goods allocated to the respectively departments, so that $I_1 + I_2 = I$.

By definition of α ,

$$I_1 = \alpha I \quad (\text{II.1})$$

$$\frac{dI}{dt} = \frac{I_1}{v} \quad (\text{II.2})$$

where v is the incremental capital output ratio (ICOR) and assumed to be equal between Department I and II.

Substituting II.1 into II.2 obtains

$$\frac{dI}{dt} = \frac{\alpha I}{v} \quad (\text{II.3})$$

As a result, annual output of Department I in the n period is

$$I_n = I_0 \times e^{\frac{\alpha \cdot n}{v}} \quad (\text{II.4})$$

Similarly, annual output of Department II in the n period is

$$C_n = C_o + I_o \times \left[\frac{1-\alpha}{\alpha} \right] \times \left[e^{\frac{\alpha \cdot n}{\nu}} - 1 \right] \quad (\text{II.5})$$

The rate of growth of investment is thus always determined by a , assuming ν is given and invariable. In the long-run the exponential term dominates in determining consumption, so that the rate of growth of consumption and of income is also, in the long-run, positively related to the proportion of investment going to Department I. Higher a will lead to lower consumption in the earlier years, but then to higher consumption in later years as the exponential term dominates in formula (II.5). In other words, the restriction of consumption in the short-run will be compensated by higher consumption and higher economic growth in the long-run. It is also suggested that though average saving rate and average investment rate (I/Y) may be initially low at the low level of income, high economic growth is still obtained by devoting higher proportion of investment goods to expansion of Department I. In fact, as a equals the marginal saving rate¹¹, higher a implies the devotion of higher proportion of incremental change in output to the development of investment goods sector. As the total output expands, average saving rate will approximately reach marginal saving rate and economic growth will become sustainable in the long-run.

Yet, given the concentration of investment in Department I, the question arises regarding who would suffer most from the depression of consumption in the short-run, in order to guarantee the higher marginal saving rate for higher economic growth in the long-run. Though Feld'man did not concern much with this question, the answer would come by reviving the debate between Preobrazhensky and Bukharin. For Preobrazhensky, the peasant would suffer most of the burden to finance industrialization through the unequal exchange with the State sector. However, as socialist and industrialization transitions require the expansion of industrial workers, the burden of higher marginal saving rate would be possible to fall into the industrial workers if the peasant failed to provide sufficient amount of food for the new industrial workers. This would threaten long-run economic growth as it hampers the efficiency of investment by increasing ν in formula (II.4) and (II.5)¹².

For Bukharin, the adequate amount of food for new industrial workers requires a fair amount of industrial consumption goods to induce the peasant to participate in the voluntary exchange with the industrial State sector. It means that long-run economic growth would have been targeted at lower rate as a higher proportion of investment goods (i.e., $1 - a$) would have to be devoted to Department II. Otherwise, too high economic growth rate, hence rapid expansion of Department I would lead to the change in terms of trade (under voluntary exchange) in favor of the agricultural sector. In this case, most of the burden of financing industrialization would be borne by the industrial worker through depression in real wage rate (Bhaduri 1993: 157-8).

It is observed that as all resources are concentrated on the development of investment goods sector, high inflation takes place, hence reducing purchasing power in both urban and rural sectors. The cash holdings often go beyond the capacity of consumer industries to satisfy it¹³. As a result, lack of availability of consumption goods forces the private seller of foodstuffs to accumulate useless cash, and constitutes a disincentive to sell (Harrison 1985: 91-2). Even some cooperatives may falsify their production account or market agricultural products in the parallel markets in a few instances. These cases include if delivery rate is set too high, State terms of trade for agricultural products are set too low, or there are not enough consumption goods that the State may offer for the exchange with agricultural products (Spoor 1994: 30). In both cases, marketed surplus of agricultural sector is limited, which negatively affects the living standard in the urban sector¹⁴.

In an open economy, the constraint of investment goods may be released by import from abroad. Then the problem becomes how to have enough foreign exchange and how to allocate this given foreign exchange between the imports of investment and consumption goods. Raj and Sen (1961) show that if the limited foreign exchange is used to import consumption goods, there will be no growth at all. If it is used to import investment goods for Department II, there will be a steady rate of investment and a steady rate of growth. If the foreign exchange is used to import investment goods for Department I, then the capacity to produce investment goods will show a steady rate of growth, and consequently the average saving rate will rise steadily and the economic growth will be accelerated.

FitzGerald (1993), following Kaleckian approach¹⁵ to financing development, proposes a model for a peripheral planned economy¹⁶, in which economic growth is constrained by the availability of foreign exchange to import investment goods. The economy is divided into three departments. Department I produces investment goods, including the foreign trade sector which, through exports of primary products, raises the availability of foreign exchange to import investment goods. Department II, producing consumption goods, is divided into two sub-sectors. Department IIa produces basic consumption goods, mostly attributed to agricultural sector; and Department IIb produces non-basic consumption goods, equivalent to industrial consumption goods sector. In his model, 'Department I has plannable output but exogenous prices (the external terms of trade), while Department IIa has plannable prices (internal terms of trade) but production outside State control; only Department IIb is really plannable in terms of both output and price' (FitzGerald 1993: 140).

The external terms of trade determine the availability of foreign exchange for import of investment goods, given the fixed supply of primary export in Department I. The real volume of import, for given technical import coefficients, determines the level of output attainable in the modern sector – Department I and IIb, for these use far more exchange than the more 'traditional' basic needs sector IIa. As economic growth requires the concentration of given imports of investment goods in Department I, the output of Department IIb will vary in response to changes in the external terms of trade. The restriction of industrial consumption goods from Department IIb puts the burden of financing industrialization mainly on industrial workers since there is barely the availability of industrial consumption goods. One way to force the peasant to contribute to the financial accumulation is to set low internal terms of trade for Department IIa, hence keeping real wage for industrial workers at a reasonable level.

Such method of financial mobilization for industrialization should be justified against two points. First, the availability of non-basic goods from Department IIb plays the key role in stimulating labor productivity and efficiency of investment in every sector of the planned economy. Not only does it give incentive to industrial workers, but also to professionals and petty producers. This, in turn, leads to a careful consideration

of the allocation of import of investment goods between Department I and IIb. It implies that economic growth may be lower than what is expected for the reasons of productivity and efficiency.

Second, the extent to which the State can procure the marketed surplus from basic needs sector IIa also depends on the availability of non-basic consumption goods. Setting low internal terms of trade for Department IIa will discourage the exchange between the modern and traditional sectors. This will threaten the living standards of industrial workers, and generate high inflationary pressure in the economy. In such a 'shortage' economy, inflation will lead to disarticulating consequences. First of all, the peasant will try to escape from State channels to market basic goods, and raise prices of those goods in the parallel market. In addition, as the national currency ceases to serve as a store of value, other instruments such as foreign currency, gold or even commodities will take its place. Finally, the existence of large cash balances outside the banks in a situation of supply shortages, and the operation of parallel markets will encourage the extraction of both consumer and investment goods from the State sector. As a result, inflation will cause instability and reduce efficiency of the economic system.

In short, such an economic system is very vulnerable to external shock. In addition, careful consideration should be given to the balance of investment between Departments I and IIb; and even with the ability to import investment goods from abroad, the establishment of internal terms of trade for agriculture (Department IIa) has a very important effect on the efficiency of investment goods sector and economic growth.

2.3. Lewis Model - Industrialization and the Labor Transfer Process

Following a classical analytical framework, Lewis (1954) mainly explores the problems of economic growth in contemporary poor, labor-abundant economies. For him, the fundamental constraint to growth in developing countries is the lack of accumulation of productive capital. He finds that both neoclassical and Keynesian theories are inappropriate for the analysis of the problems posed by such economies. He regards neoclassical theory as inappropriate firstly because it assumes full employment of all resources, and secondly because it does not address the

problems of long-run growth. Keynesian theory is regarded inappropriate as well because in the short-run it assumes an unlimited supply not only of labor, but also of land and capital, while in the long-run growth is constrained not by a shortage of saving.

Lewis demarcates the economy into two sectors, i.e., 'modern' and 'traditional' or 'subsistence' sectors. Often, modern sector is attributed to industry, and traditional sector to agriculture (Ranis 1988: 80). It is assumed that surplus labor exists in agricultural sector, where land is limited, marginal product of labor equals zero, and average product of labor is close to subsistence minimum. In other words, the withdrawal of labor out of agriculture will not reduce the total agricultural output; hence it forms an unlimited supply of labor for industrial sector. As a result, industrial wage rate is assumed constant in real terms at a level slightly higher than the average product in traditional agriculture – the difference providing incentive for migration of labor from agriculture to industry.

In the modern industry, capitalist mode of production follows the principle of profit maximization and employs labor up to a point where marginal product of labor equals wage rate. Lewis expects that only the capitalist class have the incentive to save from its profits and reinvest to expand production further. Hence, industry becomes the leading sector for economic growth.

Economic growth proceeds with the continuous reinvestment of capitalists' profits in industrial sector. With each round of reinvestment, more surplus labor is absorbed into industrial sector as the share of profit in total output increases while real wages remain constant. At the same time, the transfer of surplus labor benefits agriculture as the land/man ratio increases. This phase of economic growth comes to the Lewis turning point when the entire pool of agricultural surplus labor is absorbed into the industrial sector. Beyond this turning point, labor supply curve for industrial sector slopes upward as the withdrawal of labor from agriculture reduces agricultural output, i.e., marginal product of agricultural labor is positive and no longer equal to zero; wage rates are determined by conditions of demand and supply in the labor market. Then, from the turning point, the neoclassical model of economic growth can be applied.

At policy perspectives, Lewis proposes the injection of more credit into industrial capitalist sector at favorable terms to push up the pace of

economic growth. In addition, he considers possible measures to prevent the terms of trade from shifting in favor of agriculture as it increases wage rate in industrial sector, hence reducing the share of profits and impeding the growth process¹⁷. For Lewis, the only source of capital formation in developing countries is profits saved in industrial sector. The share of industrial profit in national income will decide the rate of absorption of surplus labor from agriculture. Agricultural sector plays no role in capital formation. Laborers transferred to industrial sector will spend their income on agricultural goods, which otherwise will be consumed by the same laborers within agricultural sector, if not absorbed into industrial sector. This spending is equal to the expenditure of agricultural sector on industrial goods.

Based on the analytical framework of Lewis, Ranis and Fei (1961) build a model of economic growth with two turning points. Phase one is the absorption of surplus labor with zero marginal productivity in agriculture into industrial sector. This phase is completed when surplus labor in agriculture is exhausted and marginal product of labor begins to rise more than zero. Phase two is the absorption of agricultural underemployed labor into the industrial sector, where agricultural underemployed labor is defined as those members of the labor force whose marginal physical product is positive but worth less than the institutional wage in industrial sector. This phase is completed when the supply curve of industrial labor ceases to be completely elastic and starts rising as the withdrawal of agricultural labor with positive marginal product reduces the availability of food for industrial workers, which raises food prices and real wage rate. Beyond this point, wages in agriculture and industry will rise, and competitive market forces will determine this, thus reflecting the true opportunity cost of labor.

In Ranis and Fei, agriculture plays a more active role in economic growth. First, rising agricultural productivity will speed up the completion of the labor absorption process. Second, in phase one when industrial sector is still small, landlords play a positive role in transferring agricultural surplus for investment in industrial sector. Third, provided unchanged institutional wage rate during the transition process, rise in agricultural productivity will increase the potential agricultural surplus that can be mobilized for capital accumulation in the industrial sector, which, in turn, shortens the transition period. As a result, initial alloca-

tion of part of the investible surplus to agriculture can speed up the transition period. Further, it requires the design of policy instruments to mobilize agricultural surplus for investment, in either agriculture or industry. Allocation of the investible surplus to agriculture is necessary for a balanced growth between agriculture and industry as it is required that terms of trade between two sectors should be maintained during the growth process and industrial growth needs a sufficient amount of food for industrial workers.

2.4. Demand Constraint

2.4.1. Balanced versus unbalanced growth

The debate on balanced versus unbalanced growth places emphasis on demand-side growth in developing countries, rather than on the supply constraints. Representatives of 'balanced' growth theory are Rosenstein-Rodan (1943) and Nurkse (1953, 1961). Meanwhile, Hirschman (1958) calls for an 'unbalanced' growth.

Rosenstein-Rodan is well-known for the 'big push' theory, which calls for government intervention to organize and implement large-scale investment simultaneously in different branches of the economy, which, in turn, will permit private firms to find larger market outlets and to benefit from external economies. Otherwise, underdeveloped economies will fall into stagnation due to low spontaneous investment from the private sector due to: (i) the small size of the domestic market which discourages incentive to invest; (ii) the inability of individual firms to internalize the value of external economies that they generate; and (iii) the inability of individual firms to anticipate the external economies which may be generated by other firms. Rosenstein-Rodan expects for a big amount of foreign capital to push up economic growth in underdeveloped economies in the early phase of development.

Nurkse develops Rosenstein-Rodan's argument further by introducing the concept of the 'vicious circle of poverty' referring to two key causalities that jointly lock backward economies into a vicious circle of self-replicating poverty and stagnation. These are low per capita incomes which limit the size of the market and hence the inducement to invest, and inability to generate significant saving from low per capita incomes, so that even if the inducement to invest existed the domestic resources

to finance such investment would not be available. Particularly, both domestic saving and size of domestic demand for industrial products are further limited due to the 'demonstration effects', which come from the fact that any increase in income in backward countries tend to spend on luxury imported goods as people try to catch up with the consumption standards prevalent in the industrially advanced countries.

On the supply-side, for Nurkse, a problem with underdeveloped countries is how to mobilize potential saving existed in the form of unproductive (underemployed) labor, particularly in agricultural sector.

The productive laborers are performing 'virtual' saving; they produce more than they consume. But the saving runs to waste, the saving is abortive; it is offset by the unproductive consumption of the people who could be dispensed with, who contribute nothing to output. If the productive peasants were sent to their useless dependants – their cousins, brothers and nephews who live now with them – to work on capital projects and if they continued to feed them there, then their virtual saving would become effective saving. The unproductive consumption of the surplus farm population would become productive consumption (Nurkse 1953: 37-8).

Hence, Nurkse calls for a redeployment of surplus labor in overpopulated agriculture to the production of social overheads such as infrastructure, without affecting agricultural output and without significant additional investment. The wage costs of this new employment could be met by procuring the transferred laborers' share of consumption from agriculture. In other word, a part of investment in non-agricultural sector may be shared by agriculture.

On the demand side, Nurkse considers the importance of agriculture in establishing the demand for industrial products, as the peasants still dominate the population. Low productivity of agriculture leads to the lack of purchasing power for industrial goods, which in turn discourages incentive for industrial investment and economic growth. Hence, there is a conflict between the emphasis on agriculture's net finance contribution to industrialization and the emphasis on increased agricultural purchasing power as a stimulus to industrialization.

The relation between agriculture and manufacturing offers the clearest and simplest case of balance needed for economic growth. In a country where the peasantry is incapable of producing a surplus of food above its own subsistence needs there is little or no incentive for industry to establish itself:

there is not a sufficient market for manufactured goods. Conversely, agricultural improvements may be inhibited by a lack of market for farm products if the non-farm sector of the economy is backward or underdeveloped. Each of the two sectors must try to move forward. If one remains passive the other is slowed down (Nurkse 1961: 251).

Implicitly, Nurkse suggests that economic growth needs agricultural surplus by raising agricultural productivity. This surplus is used as food advances to workers for investment in infrastructure system on the one hand, and forms an important demand for industrial products on the other hand.

Hirschman heavily attacks on the 'balanced' growth theory. For Hirschman, problems of underdeveloped countries are not the lack of saving or demand for economic growth. What is lacking is a 'binding agent', the organizational capacity to call forth and combine these latent resources in order to generate growth. It is argued that where organizational and managerial skills are in scarce supply, the pursuit of balanced growth will over-stretch these resources.

Hence, Hirschman proposes an 'unbalanced' growth strategy, in which policy makers try to overcome major resource bottlenecks revealed in the market, rather than dealing with supply and demand balances. As a result, the scarce resources for investment should be put on industrial sector with substantial backward and forward linkages. In addition, industrial investment, particularly in heavy industries, tends to minimize demands on organizational and managerial resources. Agriculture receives little attention in Hirschman's analysis because 'of its lack of direct stimulus to the setting up of new activities through linkage effects' (Hirschman 1958: 109-10). In short, Hirschman is not so clear about the source of capital formation in developing countries, but strongly calls for the concentration of investment in industrial sector only.

2.4.2. Mundle's argument on demand-constraint imposed by agriculture

By reviewing the history of industrialization in the already advanced countries and the concurrent developing countries, Mundle (1985) shows that industrial revolution only can take place on the basis of the previous agricultural revolution. Particularly, given the fragility of external mar-

kets, industrial development requires the stable domestic demand, which mostly is constituted by agricultural sector¹⁸.

At the initial stage, most of the demand from agricultural sector takes the form of industrial consumption goods, as the use of industrial inputs like fertilizers, pesticides, tractors, etc., is still very limited. The volume of consumption goods purchased by agricultural sector depends on per capita income of that sector and the size of its population. As per capita income increases the surplus income available for expenditure on industrial consumption goods after meeting subsistence requirements will rise. The increase in income level of agricultural sector, in turn, will mainly depend on the improvement in agricultural labor productivity.

Regarding the size of agricultural population, Mundle (1983, 1985) expects that it is negatively related to the size of the demand constituted by agricultural sector for industrial products, given productivity and technology in agricultural production. On the one hand, an absolute decline in the number of agricultural population is expected to raise both labor productivity and income per capita of the sector, given the limitation of land. The point is that the size of market for industrial goods does not depend on the aggregate income of agricultural sector, but instead it is positively related to only the surplus income of the sector after its self-consumption.

On the other hand, decline in agricultural population is expected to reduce prices of agricultural products as labor forms the major cost in agricultural production¹⁹. These declining prices of agricultural products, especially food, will augment the budget share in consumption of industrial goods, since expenditure on food is the major component of household budgets for the majority of households at the low income level. Then industrial growth will get tremendous benefits from both economies of scale and linkage effects²⁰.

The size of agricultural population, in turn, depends on two factors: labor absorption capacity of industrial sector and agrarian institutions, *inter alias*. For the former, it is suggested that the development of labor-intensive industries and decentralized urbanization is accentuated when unskilled labor is absorbed from the agricultural sector. For the latter, Mundle (1983) suggests that colonial system, which concentrates on the exploitation of natural resources in developing countries, and feudal

serfdom system, which lives on the labor service of the peasants, make it difficult to release labor force out of agricultural sector.

Concerning agricultural labor productivity, Mundle (1985) suggests that it mostly depends on technology innovation in agriculture. By emphasizing the diffusion of indigenous technology in agriculture, he shows that technology innovation in agricultural production can come if the innovators receive gains in productivity following innovation. Furthermore, innovation may entail the deployment of additional resources. In the absence of a well-developed financial system, the prospects of innovation depend on whether the organizers of production also appropriate the surplus, that is, whether they can deploy a previous accumulation of surplus or not. Such a process of technology development takes place under a specific context of social organization in agriculture²¹.

2.4.3. Demand constraint and forced saving mechanism

Basing his model on the Kaldorian line (1978), Thirlwall (1995) formalizes a model, which gives rise to the demand constraint imposed by agriculture on growth *in a closed economy*. He criticizes both neoclassical and classical theories for emphasizing only on the supply constraints of industrialization in developing countries, i.e., industrial growth is constrained by the non-availability of agricultural inputs, or by the decreasing terms of trade for industrial sector, which may cut off the rate of industrial capital accumulation. In those theories, Thirlwall observes, 'there is no recognition of the fact that worsening terms of trade for industry may be associated with faster industrial growth because of higher rural incomes which accompany a faster growth of agriculture' (Thirlwall 1995: 34).

Basing on the Kaldorian line, the terms of trade between agriculture and industry are asymmetric. In the agricultural market, the price is given to the individual producer and consumer, and it moves to clear supply and demand in the market. In the industrial market, principle of quantity clearing is applied where producers fix the price and the adjustment of production to changes in demand takes place through a stock adjustment mechanism. Industrial firms often operate at less than full capacity, hence production can be increased without incurring higher cost per unit. Further, often benefits from reduced costs result from an increase in volume of production. As a result, industrial price is cost-determined,

not market determined; applying various percentage additions to direct labor and material costs on account of overheads and profits allows it to arrive at the industrial price.

Therefore, while any surplus of agricultural supply over this demand will lead to the declining terms of trade for agriculture, shortage of agricultural supply will not be effective in moving the terms of trade in favor of agriculture. This is because this surplus increases the prices of industrial inputs (raising prices of food – and labor cost, and intermediate inputs for industrial production), which in turn accelerates the cost-determined prices of industrial output further. In both cases, the inefficiency of a market mechanism will lead to declining terms of trade for agriculture, thus decreasing demand from agricultural sector for industrial goods and worsening the climate for new investment in both the agriculture and industry. The result of these events will be general economic recession.

Thirlwall develops a model that deals with the complementarity on the demand side between agriculture and industry, and the equilibrium terms of trade and consequences of disequilibrium. It is assumed that surplus labor exists in agricultural sector; hence the supply curve of labor to industry is indefinitely elastic at a given conventional real wage. Obtaining capital from the industrial sector in exchange for the agricultural marketed surplus accelerates agricultural growth²². The lower the price of industrial output in terms of agricultural goods, *ceteris paribus*, the faster both the rate of increase in agricultural output and agriculture's purchasing power over industrial goods will be. Industrial sector produces both investment and consumption goods at mark-up prices. Industrial income is distributed over capitalists and workers, of which the former are assumed to save and invest and the latter who in large part spend their income on consumption goods. Other things being equal, the lower the real wage rate, the higher the saving and investment in industrial sector, and the higher industrial growth will be.

Assuming that all additional industrial output will be used to increase industrial investment, the mark-up rate will rise in line with the extra aggregate demand for industrial goods, and the nominal price of industrial goods will rise as well. Whether or not exogenous increase in investment in industrial sector may lead to higher industrial growth depends on two factors. First, if the agricultural sector is willing to supply food in ex-

change for industrial goods at the new price, this will amount to 'forced saving' in agriculture to finance the investment²³. Second, if the agricultural sector reacts by raising the price of food due to an increase in demand for food from industrial workers, higher industrial growth will be obtained only at the expense of decreasing real wages for industrial workers. In addition, if both agricultural and industrial prices increase, and real wage rate increases, the whole economy will suffer from inflation and stagnation.

As industrial real wage is rigid downward due to the role of the trade union, industrial growth is constrained by demand from agricultural sector, which is dependent on long-run technological progress. Since there are diminishing returns in agriculture due to the limitation of land, the declining terms of trade for industrial sector and lower industrial growth can be offset only by the increase in the availability of land and land-saving technological progress. This, in turn, will implicitly require a certain amount of investment in agricultural sector²⁴.

Similarly, Taylor (1983, 1991) develops a model for *an open economy* with two sectors, i.e., agriculture and industry. The agricultural market follows flex-price principle, while fixed-price and quantity clearing is prevalent in industrial markets. Excess demand for food will increase the terms of trade in favor of the agricultural sector. On the one hand, this will result in higher income for farmers, thus generating higher demand for, and the expansion of industrial output. On the other hand, higher price of food will reduce the real wage of industrial workers, who form most of the demand for industrial goods within industrial sector. This in turn will reduce the purchasing power of industrial workers on industrial goods, hence lowering industrial output. The net result will depend on the strength of the so-called 'Engel's effect'.

Engel's law states that income elasticity of demand for food is less than unity, and own-price elasticity of demand for food is usually very small. It implies that as income level rises, the food budget share falls, whereas an increase in price of food raises the budget share since quantity consumption does not decline very much in response to a higher price. At low-income level, Engel's effect is strong in the sense that the rise in food price will result in the increasing food budget share, offset by the declining budget share for industrial goods. As a result, Taylor suggests that rising price of food will reduce industrial growth if Engel's ef-

fect is strong. Otherwise, the industrial sector will benefit from the increase in the price of food.

In an open economy, where food is tradable, change in food price has important impacts on the performance of industrial sector. Higher price of food in the world market will encourage its sale abroad. It will create excess food demand in the domestic market, *ceteris paribus*. This will result in the increase in price of food in the domestic market. Then, industrial growth will be accelerated if Engel's effect is weak, and decelerated if Engel's effect is strong. As a result, lowering net export of food (or higher import) is encouraged in poor countries where Engel's effect is strong. Meanwhile, raising food export (or lowering import) is beneficial for industrial growth in rich countries where Engel's effect is weak.

2.5. Marketed Surplus Constraint

Kalecki²⁵ mainly addresses the problems of financing economic growth in a poor country. For him the most serious problem of underdeveloped countries is unemployment, which results from the shortage of capital equipment rather than from a deficiency of effective demand. However, he believes that investment may finance itself through the operation of financial institutions. What is needed is the availability of funds for this investment activity, and then the investment, when implemented, will create its own saving. Any increase in industrial investment to absorb surplus labor from agricultural sector will result in higher income for either capitalists (from higher profits) or landlords (due to higher terms of trade for agricultural products), who are expected to generate higher saving. This idea is argued below.

Similar to Kaldor, Kalecki distinguishes between a fix price manufacturing sector in which the price is determined as a mark-up over variable costs, and output is determined by demand (allowing for output excess capacity), and a flex-price agricultural sector with output given in the short-run. The mark-up rate is determined by the monopoly power in the industrial sector, which depends on the degree of industrial concentration. Industrial sector produces only investment goods, and agricultural sector produces only consumption goods²⁶.

Agricultural production is distributed between rents for the landlords and income for the peasant living at subsistence level. Any increase in

price of agricultural products will be accrued to the higher rents for the landlords only. Landlords use rents either for saving or consumption, and peasant income is all used for consumption.

On the other hand, industrial production is distributed between profits for the capitalists (equal to the mark-up) and wages for the workers. Profits of capitalists are partly saved and partly consumed, while workers' wage is fully spent on consumption. Higher investment generates higher demand for the industrial sector, which in turn leads to higher industrial profits, hence higher saving, provided no change in the consumption of industrial workers and capitalists. If higher industrial output leads to an increase in consumption from the industrial sector, part of saving is equal to the surplus of agricultural consumption goods to workers and capitalists when sold in the industrial sector. If higher demand for agricultural consumption goods, which results from higher industrial income, leads to higher prices for agricultural goods, saving may exist in terms of increasing land rents, hence higher landlords' saving.

For Kalecki, the 'gist' of the problem of this financing process for output expansion is the inability and/or unwillingness of private sector to finance industrial investment at a warranted rate, and the inadequate supply of food from agricultural sector to cover the demand resulting from the increase in employment in industrial sector. The former calls for government intervention to tax higher income groups (industrial capitalists and landlords) to finance investment, accompanied by an increasing in loans from the financial system. The latter requires the removal of institutional constraints on the inelastic supply of agricultural goods in the short-run.

Kalecki justifies taxing higher income groups to finance investment not only in terms of justice, but also in terms of accelerated economic growth. Employment growth in the industrial sector requires a higher amount of food from agriculture to feed its workers. As food supply is fixed in the short-run, it will increase food price²⁷. As the real wage of industrial workers is dominated in terms of food, and if it is fixed (wage indexation), profitability in the industrial sector will be lower, providing no change in industrial productivity, hence hampering incentive for investment in industrial sector and lowering industrial growth²⁸. If nominal wage rate is fixed, an increase in agricultural price will benefit only industrial capitalists and landlords, who tend to consume luxury-imported

goods. This will limit the demand for domestic industrial production on the one hand, and reduce incentive to invest and save on the other hand. In both cases, economic growth will be slowed down as a result of agricultural stagnation.

Under institutional constraints, it is impossible to increase the supply of agricultural sector in the short-run even with some investment. These constraints 'are the feudal or semi-feudal relations in land tenure as well as the domination of the poor peasants by merchants and money lenders' (Kalecki 1976: 26). The development of agriculture requires government intervention to overcome institutional obstacles. The measures by the government 'range from land reform and cheap bank credit for peasants to improvements in the method of cultivation, small scale irrigation and cheap fertilizers' (Kalecki 1976: 48). In fact, Kalecki links together desirable social change (e.g. shift in power from landlords to the peasants) with increased productivity in agriculture and development.

In short, it is not clear in Kalecki about which sector (agriculture or industry) should finance investment for industrial growth as both the capitalists (industrial sector) and landlords (agricultural sectors) should be taxed. Yet, he is certain about the concentration of investment in industrial sector, though some part of it may be used for agricultural investment to ameliorate the food constraints. However, without institutional changes in agricultural sector, there is an inadequate supply of food for the expansion of industrial employment, even when small amounts of investment are made in agriculture. This will lead to general inflation and stagnation in the economy.

Ishikawa (1988) suggests that at a low level of development, the State should deliberately intervene to allocate significant resources for agriculture in order to avoid a shortage of agricultural marketed surplus. When the economy starts moving to such an extent that food is enough for the increasing industrial labor force and markets are integrated between sectors, the intersectoral allocation of resources is no longer an issue of economic development because market forces can effectively reach the optimal resource allocation.

Ishikawa (1988, 1989) regards shortage of agricultural marketed surplus as the most important constraint on economic development, and this constraint is reflected in the notion of the 'Ricardian Growth Trap', in which growth of agricultural output is not sufficient to serve the in-

creasing demand for agricultural products from the industrial sector accelerating at high speed. This situation results from technological stagnation in agricultural sector under the law of diminishing return to land. Ishikawa (1989: 88) suggests that

the process of structural transformation... could be approximated by the familiar dual economy model of W.A. Lewis... Such transformation was obstructed mainly by the constraints placed by the limited supply of 'wage goods' from agriculture and the economy was in constant danger of being caught in the 'Ricardian Growth Trap.'

The trap, further described by Ishikawa (1989: 101),

emerges when, due to economic growth, the demand for wage goods increases, but diminishing returns to labor in capitalist agriculture bring about the increase in the share of land rent and the decrease in the share of profit in agricultural output. The result is that the profit ratio in the industry sub-sector falls closer to zero.

Griffin (1974) explores the institutional constraints on agricultural supplies and its negative impact on agricultural marketed surplus. He observes that marketed surplus of agriculture (either in the forms of food or export crops) receive most of its interests in developing countries. Industrialization needs food for workers and/or foreign exchange to import capital goods. In the market system, the landlords (or large land-owners) who receive rents from their tenants, transfer most of the marketed surplus of agriculture to the urban sector. Peasant households do not have much produce to sell in the market as most of their output is used for subsistence. Most of landlords' interests are paid to prices of agricultural marketed surplus, which directly relate to the rents accrued to them. As a result, the market mechanism always ensures a sufficient amount of agricultural surplus marketed to the urban sector. For instance, if demand for food rises in the cities, this will lead to an increase in food prices that will be followed by rise in land rents. The counterpart to a rise in rents will be an increase in the marketed surplus and a decline in share of the crop received by the peasantry.

However, the market mechanism does not ensure that there will be a net transfer of resources to urban areas. The landlords may save relatively little and invest little of their saving in urban activities. As a result, governments often intervene indirectly and directly to make sure that

both the peasantry and agricultural sector contribute net resources for industrialization²⁹. As most of these transferred resources, however, are used for consumption or very wastefully in the urban sector, the continued growth of industrial sector requires that agriculture be squeezed further. This squeeze on agriculture is certain to result in greater poverty for the peasantry. If agriculture is incapable of transferring additional resources to industry, the rate of growth of the industrial sector will decline, and the entire development strategy based on the exploitation of agricultural sector will collapse.

The collapse can be postponed if agricultural output is accelerated without reducing the net transfer of resources to the industrial sector. The 'green revolution' has introduced a very useful solution to this problem by offering easy accelerations in agricultural marketed surplus and net resource transfers without occurring any rise in investment in agricultural sector. However, under the institutional context and economic policies in developing countries, most of the increase in output from the 'green revolution' tends to concentrate on farms belonging to large landowners. As modern technology of the 'green revolution' goes together in a package (such as seed, fertilizer, pesticides and availability of irrigation facilities), only rich farmers can afford these necessities. In addition, as the government encourages the increase in agricultural marketed surplus, most of government subsidies go to the already rich and large landowners. It is suggested that those subsidies hamper not only income equality but also economic growth as well³⁰.

As a result, the 'green revolution' should go alongside with income redistribution and land reform for both efficiency and equity purpose, as well as releasing marketed surplus constraint imposed by agricultural sector (Griffin 1974: 130). However, it is suggested that land reform (whereby former tenants become owners and so cease to pay rent) may lead to a fall in agricultural output and as well as the size of the agricultural marketed surplus. The policy implication for avoiding or reducing this 'hidden cost' of land reform is clear: peasant households must have adequate economic incentives, adequate resources and, if necessary, technical assistance to maintain or even increase output when the changeover from tenant to owner-occupier takes place (Ghatak and Ingersen 1984: 45).

2.6. Agriculture- and Employment-Based Growth Strategy

Mellor (1986) strongly criticizes the intellectual neglect of agriculture's role in development. The point is that intellectual thinking either puts concentration only on the urban-based industrial growth or constraints, which may be imposed by agricultural sector on the industrial growth process, and does not view the constructive role that agricultural sector can play. As a result, even attempts to help agricultural development cannot produce sustained long-run economic development, where agriculture is seen as a part of a larger strategy.

Mellor blames the failure of urban-based industrial growth strategies for the persistence of poverty in developing countries during the 1950s and 1960s. Industrial growth was not enough to absorb surplus labor from the countryside, especially under the pressure of high population growth and the tendency to use more capital-intensive technology in industrial production. In addition, this growth was concentrated in only a few urban centers with high overhead costs, which made it difficult to withdraw labor from the countryside on the one hand, and impeded the provision of basic services to the dominant share of rural population on the other hand. Without access to employment, the poor could not obtain income to command more food or other basic needs. This was further worsened by the shortage of food due to the neglect of agriculture in investment allocation or other policies in favor of industrial development. Consequently, industrial growth did not have any 'trickle-down' effect into the rural poor as it was accompanied by imbalances in food and employment³¹.

It is also worth noting that current migration from rural to urban becomes a serious problem for developing countries, rather than a benefit for industrialization as suggested in Lewis model. The rising problems and costs of urbanization have reached overwhelmingly proportions in many developing countries, thus thwarting the very process of industrialization. Paradoxically, migration into cities occurs alongside large-scale open and disguised unemployment in the urban areas and despite extremely limited job opportunities in industry³².

With this background, Mellor argues that an agriculture-based growth strategy cannot directly benefit overall economic growth and employ-

ment in developing countries. 'The agricultural sector can at best provide employment for its own population growth, and it is likely to fall short of that. And agricultural growth alone obviously cannot supply the broadening consumption patterns beyond food that all people desire' (Mellor 1986: 70). Instead, he describes how putting agricultural growth at the central place of development strategy can have indirect effects on growth and employment in other sectors. Hence, an agriculture- and employment-based growth strategy should have three interrelated elements:

1. The pace of agricultural growth must be accelerated despite the limitations of a fixed land area. Technological change solves a major, special problem of agricultural growth and allows low-income countries to use most powerful elements for growth.
2. Domestic demand for agricultural output must grow rapidly despite inelastic demand. This can occur only through accelerated growth in employment (more precisely, increased demand for labor), which is facilitated by the indirect effects of agricultural growth itself.
3. The demand for goods and services produced by low capital-intensity processes must increase. This, too, is facilitated by the technology-based increase in agricultural income.

It is argued that growth of food and employment are dynamically interrelated. Increased employment provides the labor class with added income, most of which is spent on food. If the food supply is not expanded, increased employment will cause the price of food to rise, thus reducing the real incomes of laborers back nearly to the previous level, reducing incentive to work, placing upward pressures on wages, and reducing employment. In contrast, as the demand for food tends to be income inelastic, if food production increases rapidly without increased employment, prices will tend to fall sharply and eventually cause reduced production.

However, an increase in the price of food is not an effective way in such a strategy because it may raise the supply of food in the short-run, but reducing employment and lowering demand for food in the long-run. Therefore, agricultural growth must come from technological change and increasing efficiency of production. This growth must be

matched by an increase in demand that results from increased employment, which will be obtained by the development of labor-intensive industries. In turn, agricultural growth offers a potential for rapid growth in domestic demand for labor-intensive goods and services. Incremental consumption patterns of peasant farmers have large rural service components, and a large share of other goods consumed is also produced in a relatively labor-intensive manner³³.

Further more, Mellor argues that an agriculture- and employment-based growth strategy requires an open trading regime for two reasons. First, though employment growth requires the development of light industries, the amount of growth it needs requires at least some industrial inputs with high capital-output ratios, such as fertilizer for agriculture, and steel, aluminum, and petrochemicals for otherwise labor-intensive manufactured goods.

Thus while agricultural growth generates direct demand for a final product that is efficiently produced by labor-intensive processes, there must be rapid growth in imports of capital-intensive intermediate goods and services. Clearly, accelerated growth of such imports must be matched by accelerated growth of exports. The latter should be goods and services with relatively high employment content (Mellor 1986: 82).

Second, an open trading regime will allow to make use of food import when employment moves ahead of the capacity of domestic food production; and will encourage the development of labor-intensive industries when there is food surplus.

2.7. Conclusions and Implications

In sum, alternative theories on the interaction between agriculture and industry always deal with two major questions: (i) Is there any difference between agriculture and industry? and (ii) How do they interact with each other in the development process?

For the former question, this theoretical review just focuses on the structural view (classical and post-Keynesian economics) on the interaction between agriculture and industry, since neoclassical economics does not concern much with this interaction. Structural view is often associated with the concept of 'dualism' under different perspectives, i.e., geographical, technological, and organizational dualism, which stems from

the asymmetry between agriculture and industry in developing countries. In the long run, economic development is analogous to the disappearance of such dualism alongside industrialization, modernization, commercialization and urbanization, in which the industrial sector plays a leading role. During this process of change, agriculture and industry interact with each other through intersectoral labor, intersectoral financial and intersectoral commodity markets.

Both classical and post-Keynesian economics emphasize the leading role of the industrial sector in structural transformation and development process in developing economies. However, the two schools of thought follow different perspectives. In classical theories, economic growth is supply-constrained. To break up this constraint, industry is seen as the leading sector, based on the assumption of economies of scale in industrial sector, and agricultural stagnation due to the limitation of land. Classical economics mostly concerns the interaction between agriculture and industry in the intersectoral labor and intersectoral financial markets, in which agriculture helps release the supply constraints on industrial growth by providing necessary factors of production such as capital and labor.

In post-Keynesian perspectives, economic growth is demand-constrained. Though industry is still seen as the leading sector for economic growth, agriculture is considered to be a binding constraint as it accounts for a dominant share of the domestic market for industrial products. Post-Keynesian economics see the interaction between agriculture and industry mainly in the commodity markets where agriculture may foster industrial growth through providing necessary inputs for industrial sector and constituting the market for industrial products.

For the second question, the theoretical review shows three interrelated elements for a study on the intersectoral resource flows, i.e.:

1. The macro constraints imposed on economic growth and their relationship with the direction of the resource transfer between agriculture and industry in development intention.
2. The mechanism of resource exchange and transfer between agriculture and industry.
3. The institutional framework used to serve this resource transfer and exchange between agriculture and industry.

In a supply-constrained economy, classical economics emphasize the role of agriculture to contribute financial, labor and foreign exchange resources to start up industrialization, when the supply-base of industrial is too limited even though industry is still seen as the leading sector for the future development of a country. In a saving-constrained economy, Preobrazhensky shows that agricultural sector has to contribute financial resources for industrialization if the industrial sector is too small to generate capital accumulation for itself through setting unequal terms of trade in favor of the industrial sector. His proposition is based implicitly on the assumption of institutional rigidity in the non-socialist agricultural sector without any possibility of productivity growth. Following this, the agricultural sector should be squeezed to serve for the victory of the socialist and high-growth industrial sector.

In contrast, Bukharin looks at the agricultural sector not only as a source of capital formation, but also as the supply of labor and wage goods (food) along labor transfer for industrialization. A fair treatment with the terms of trade for the agricultural sector is needed to ensure a sufficient amount of food for industrialization. Along with this, the State can ensure the 'class alliance' between the proletariat and the peasantry in order to serve for the purpose of mobilization and militarization of labor beyond the ranks of the existing proletariat class. Therefore, Bukharin warns that the high squeeze of the peasantry for 'primitive socialist accumulation' may lead to the slow-down of industrialization, or industrial workers will suffer the main burden of industrial capital accumulation.

In Lewis model, industrial investment is self-financed by industrial entrepreneurs. Agriculture is not expected to contribute to industrial capital accumulation as most of the income is used for consumption and there is no incentive to save in agriculture. The critical assumption in Lewis model is the unlimited supply of labor from agriculture for industrial growth, which guarantees a fixed real wage rate. Hence, industrial growth goes along with higher profits and higher capital accumulation within the industrial sector. Commodity exchange between sectors is undertaken in the free market with fair terms of trade. Agricultural sector adjusts accordingly to supply a sufficient amount of labor alongside food to feed them for industrial growth, and this spending of new industrial labor is equal to the additional expenditure by agricultural institutions on industrial goods in exchange.

Ranis and Fei modify the Lewis model by adding another 'turning point' of agriculture-industry labor transfer and the possibility for agricultural landlords to contribute financial surplus for industrialization. Hence, they see the possibilities of raising agricultural productivity, hence easing the food constraints imposed by the agricultural sector on the industrialization process. Otherwise, food shortage will turn the terms of trade in favor of the agricultural sector, and this will lead to an increase in real wage rate, and a decline in profit and capital accumulation in the industrial sector. Particularly, in Ranis and Fei, increased agricultural productivity helps the integration of agricultural sector into the modernization process, thus correcting the imperfection of the market in developing countries.

Given the potential saving, the next issue is how to make investment goods conducive to accelerated economic growth? In a closed economy, it will require higher share of the existing investment goods devoted to the development of investment goods sector as proposed by Feld'man. It implies the restriction of current consumption for accelerated economic growth and higher consumption in the future. Either the industrial workers or the peasants have to bear the burden of financing economic growth and industrialization, depending on setting the terms of trade between industrial and agricultural sectors. However, the point is that the shortage of either industrial consumption goods or food will lead to the inefficiency of investment, thus hampering industrial growth.

In an open economy, it is expected that international trade may help to release investment goods constraint through the imports of capital goods. Then industrial growth will depend on the availability of foreign exchange, the allocation of a given volume of imports between consumption and investment, and between investment in consumption goods and investment goods sectors. Once again, there is a conflict between a higher share of investment devoted to the investment goods sector for higher economic growth and the need to generate adequate consumption goods both to exchange for food and to increase the efficiency of investment.

The 'balanced versus unbalanced growth' debate put the initial touch on demand constraint in economic development process. With the introduction of the 'vicious circle of poverty' concept, Nurkse considers the contribution of agriculture to release both supply and demand con-

straint for industrialization. On the supply side, Nurkse thinks of underemployed labor in agriculture as an important source of capital accumulation. This is because by transferring unproductive laborers for infrastructure construction, as well as food to feed them, this does not reduce agricultural output. On the demand side, agriculture may establish an important source of demand for industrial products in the early stage of development, when most of population still stays in the agricultural sector. In fact, Nurkse focuses on how to generate sufficient food surplus over the subsistence needs of the agricultural sector, and this surplus will become effective saving by feeding the surplus labor transferred to work in infrastructure construction.

In contrast, Hirschman emphasizes the lack of organizational and managerial capacity in developing countries. He proposes to concentrate available resources in the sector with the strongest backward and forward linkages, namely heavy industries. By doing this, Hirschman expects that the demand will be minimized for organizational and managerial resources, which should be put in the sector with the most influential linkage effects on other sectors. Agriculture is unlikely to generate those linkages, meaning that the demand constituted by agriculture is not significant for industrial growth.

However, as argued by Mundle, agriculture constitutes the most important source of demand for industrial sector in the early stage of development. This is not because of its linkage effects on the growth of intermediate inputs like fertilizer, pesticides and tractors, but instead due to its demand for industrial consumption goods. It is stressed that the size of market for industrial consumption goods does not depend on the aggregate income of the agricultural sector; instead it is positively related to only the surplus income of the sector after its self-consumption. Mundle further argues that this surplus only can be generated with appropriate institutions in agriculture, in order to raise agricultural productivity and to reduce agricultural population. It is important to note that the size of this surplus as well as its contribution to demand for industrial consumption goods are only significant if the agrarian institutions generating this surplus are also those appropriating this surplus under the absence of a well-developed financial system.

For a demand-constrained economy, typical post-Keynesian economics are found in Thirlwall, Taylor and Kalecki, who focus on the market

imperfection and the asymmetry of equilibrium mechanism between agriculture and industry, i.e., flex-price principle in the agricultural market and fixed-price principle in the industrial market. Under these conditions, Thirlwall shows that the agricultural sector may be forced to save for new investment in the industrial sector. He also points out how the agricultural sector will be affected by industrial employment growth and increasing demand for food surplus by industrial sector, thus reducing the relative price of agricultural goods in exchange for industrial investment goods. It is worth noting that food surplus, or in other words agricultural marketed surplus, receives considerable attention in post-Keynesian economics. This is because it not only may contribute to 'forced saving' for industrial growth through the terms of trade mechanism, but it is also the major source of demand for industrial goods.

The major concern in post-Keynesian economics is that the shortage of food surplus may lead to worsening terms of trade for the industrial sector, as well as a reduction in the budget share of household consumption for industrial goods. Taylor shows that the 'Engel's effect' will decide the net impact of changing terms of trade on the demand for industrial goods. 'Engel's effect' is strong when income level is low (implying high budget share for food consumption) and price elasticity of demand for food is very low. In this case, increase in price of foods raises food budget share, thus reducing demand for industrial goods. 'Engel's effect' is weak when income level is high (implying lower budget share for food consumption since income elasticity of demand for food is less than unity) and price elasticity of demand for food is high. In this case, the industrial sector may benefit from the increase in the price of food.

In the long-run, the growth of the agricultural marketed surplus requires improvement in agricultural productivity. Neoclassical economists expect that it is coming from higher agricultural prices, technological progress, hence requiring sufficient investment in agriculture. However, post-Keynesian economists cancel out this possibility as there are diminishing returns in fixed land in agricultural production and the peasants are not responsive to changes in price and to technological progress (due to institutional constraints in agricultural production). Therefore, high industrial growth requires the removal of institutional obstacles, which makes agricultural supply responsive to price and technological changes.

In short, classical and post-Keynesian economics focus on the leading role of industrial sector for economic growth. Industrial growth is put at the center of the development process, and agriculture is just adjusted to release constraints for industrial growth. Agriculture can make contributions in the forms of saving, foreign exchange, labor, food, and demand for industrial growth. The focus is primarily placed on commodity exchange and transfer between agriculture and industry, without much consideration of a financial mechanism for the transfer of resources between sectors. Therefore, the major tool to extract resources from agriculture is the terms of trade mechanism, and it requires agriculture to generate a sufficient amount of marketed surplus for the exchange with industrial goods. To a lesser extent, it is expected that the surplus appropriator in agriculture can transfer at least some food surplus over the subsistence needs of agricultural population to feed the increasing demand for food, following the transfer of surplus labor from agriculture to industry. Yet, the most dynamic source of capital formation for industrialization is still concentrated within the industrial sector. This is because of institutional constraint on technological innovation and the generation of surplus in agriculture. Such constraints include low incentives to technology innovation, which lead to low agricultural productivity and low agricultural surplus (both in forms of saving or marketed surplus), and the outcome is a low propensity to save in agriculture. As a result, investment in agriculture is not expected to push up the growth of productivity as well as surplus from the sector. Industrialization should use up the 'slack' resources from agriculture as much as possible.

To conclude this chapter, there are four major comments on structural perspectives on the interaction between agriculture and industry. First, structural view does not consider carefully the complementary relationship that exists between agriculture and industry in the development process. As suggested by Mellor, we should put agriculture at the center of development process, especially under the shortage of food and employment.

Second, agricultural growth is possible, but this growth needs the strong complementary support of industrial sector. Griffin (1974) argues that in developing countries with rampant underemployment in agriculture, industrial growth plays an extremely important role to absorb surplus labor from agriculture. This surplus labor absorption helps to re-

structure the social and technical conditions of production in the agricultural sector and creates the conditions conducive to capital accumulation and introduction of modern technology. By providing modern manufactured inputs and knowledge, the industrial sector also could make such technical change possible. This is of particular significance with regard to the agricultural sector, where imported technology has to be adapted to the local ecological relationships and resource availability. Furthermore, industrial growth helps stimulate the domestic market for agricultural sector, which, in turn, sustains incentives for agricultural growth since demand for agricultural products is income inelastic.

This complementary role of industrial sector is dependent on the patterns of industrial development. Often, the development of labor-intensive industries and decentralized urbanization is considered more helpful to agricultural growth as it both creates high demand for labor and high demand for agricultural products. In addition, it is shown that development of labor-intensive industries, which may generate more industrial consumption goods, could ease the food constraint on industrial growth since it increases the availability of consumption goods to exchange with the peasants (Bhaduri 1993).

Third, with a suitable institutional arrangement in the agricultural sector, as suggested by Mellor (1973), investment in the form of bringing new technology into agricultural production can improve agricultural productivity tremendously. Investment in agriculture does not mean a net transfer of resources into agriculture if this investment is productive and high saving results from the proceeds of increased agricultural income. This saving can then be transferred for use in industrial sector through taxation or financial institutions.

Fourth, related to the last point, we also need to consider the financial mechanism for the resource transfer between sector because of the close link between commodity exchange and financial transfer between sectors. Furthermore, monetary effects of resource mobilization and allocation should be taken into account. High investment in heavy industries and agricultural stagnation often lead to high inflation and low economic growth. These will make low incentives for the generation of agricultural marketed surplus as well as low incentives for agricultural institutions to transfer resources through the financial system.

Endnotes of Chapter 2

¹ For a good classification of alternative theories on the interaction between agriculture and industry, see Bharadwaj (1989), Dixit (1973), Dutt (1990), Jorgenson (1970), Karshenas (1995, Ch. 1: 9-25), Rao (1986); Rao and Caballero (1990), and Taylor (1989).

² For a comparison between neoclassical and structural approaches to economic growth, see Chenery & Syrquin (1975) and Chenery *et al.* (1986).

³ For a review about the role of agriculture during economic transformation process, see Ghatak & Ingersen (1984), Johnston & Mellor (1961), Staatz & Eicher (1984), and Timmer (1988).

⁴ For the discussion on 'dualism,' see Kelley *et al.* (1972), Myint (1985), Patnaik (1981), Ranis (1988), and Thirlwall (1978).

⁵ Preobrazhensky (1972: 132) conceptualizes the 'primitive socialist accumulation' as follows: *'Primitive socialist accumulation... means accumulation in the hands of the State of material resources mainly or partly from sources lying outside the complex of State economy. This accumulation must play an extremely important part in a backward peasant country, hastening to a very great extent the arrival of the moment when the technical and scientific reconstruction of the State economy begins and when this economy at last achieves purely economic superiority over capitalism.'*

⁶ The idea of Bukharin is mainly interpreted from Harrison (1985) and Mitra (1977)

⁷ Those discerned the exploitation of the *kulak* and saw advantages of cooperation with the proletariat by exchanging goods with the socialist sector.

⁸ (Harrison 1985: 97) shares the same conclusion: *'The increase in industrial employment was made possible by the administrative mobilization of resources into public sector capital construction, the imposition of an obligation to work upon the adult able-bodied population of the towns, and the flood of former peasants who left the village to seek work for a wage income. The lower wage cost of industrial output was made possible by a reduction in the real wage paid to both existing and newly employed workers, enforced through inflation, queues, ration cards and the differentiation of rewards for more skilled and responsible grades'*

⁹ Sah and Stiglitz (1984) set up a model for Preobrazhensky's argument of terms of trade manipulation by the State. In their model, the State has effective controls over industrial real wage and surplus in the State sector, which is supposed to be used for investment purposes and equal to the difference between industrial output and wage payments to industrial workers. However, the State cannot control all agricultural output and marketed surplus from the sector. As a result, a decrease in agricultural terms of trade will lead to a fall in agricultural marketed surplus, and supply and demand balance in the agricultural market

can be reinstated only by a decrease in the industrial real wage. Therefore, turning the terms of trade against agriculture leads to increased State accumulation but at the expense of real wage reduction for industrial workers.

Consequently, Sah and Stiglitz (1984: 128-9) conclude: *'Preobrazhensky's first proposition is valid, that is, turning the terms of trade against peasants leads to an increased accumulation...[however], Preobrazhensky's second proposition is invalid [since] the welfare of industrial workers must decline if the State accumulates by turning the terms of trade against peasants...Also, turning the terms of trade against peasants leads to a larger decline in the welfare of industrial workers if the price response of the rural surplus is larger.'*

¹⁰ Review of Feld'man's work is adopted from Domar (1972).

¹¹ Suppose $I = \beta + \alpha Y$ (II.6)

where a' is the marginal saving rate

$$\frac{dY}{dt} = \frac{dI}{dt} \times \frac{1}{\alpha} = \frac{\alpha I}{v\alpha} \quad (\text{II.7})$$

As growth of total output depends only on the level of investment:

$$\frac{dY}{dt} = \frac{I}{v} \quad (\text{II.8})$$

As a result:

$$\frac{\alpha I}{v\alpha} = \frac{I}{v} \quad (\text{II.9})$$

Hence

$$a = a' \quad (\text{II.10})$$

In formula (II.6), average saving (investment) rate I/Y will reach marginal saving (investment) rate a' at a high level of Y .

¹² This will be discussed in more detail later in FitzGerald proposition of financing development in the periphery planning economy.

¹³ Wuyts (1985: 201) observes, from the case of Mozambique, that speculative traders play the dominant role in the parallel markets. They establish alternative circuits of trade with the peasantry and between town and countryside and feed themselves on diverting supplies originating from the State sector. As a result, living standards of both industrial workers and the peasantry are deteriorated as large share of their budget is spent in the parallel markets that feed the speculative traders. Yet, the peasantry is in the worse condition as rationing system in urban sector guarantee access for industrial workers to commodities at official prices with regard to some basic minimum quantities.

¹⁴ This also explains why in some developing socialist countries, most of investment goes to heavy industries, which employ few laborers, or the residence registration system is applied to prevent spontaneous rural-to-urban migration (Mellor, 1974:10).

¹⁵ Kaleckian approach to financing development will be discussed later in Section 5 of this chapter.

¹⁶ In FitzGerald, the central feature of such an economy is *'the combination of very diverse enterprise forms and production system within a heterogeneous social structure. The economy is integrated into the world market primarily as an exporter of raw materials, in exchange for which a substantial part of the producer goods necessary for the economy to function are obtained... There also exists a very extensive petty-commodity production sector, comprised of both peasants and artisans, that plays a large part in the supply of consumption goods and services. The State sector as such is confined to 'modern' corporate enterprises and governmental entities, and directly controls foreign trade, banking, wholesale commerce, factory industry and the like. The degree of foreign trade dependency and the 'mixed' nature of ownership reflect the size of the economy and its degree of industrialization, rather than political choice'* (FitzGerald 1993: 164).

¹⁷ Neoclassical economists speculating on the analytical framework of Lewis put more concentration on the marketed surplus constraints imposed by agriculture on the industrial growth process (Amano 1980, Jorgenson 1961, 1967, Kelley *et al* 1972). For instance, Jorgenson (1961, 1967) shows that industrial growth depends on the amount of labor that may be released from agricultural production. Under the assumption of full employment in both sectors, withdrawal of labor out of agriculture will reduce total agricultural output. Hence, labor transfer out of agriculture may take place only if agricultural output exceeds the critical level of consumption within agricultural sector. Then, agricultural sector may release an amount of labor for industrial production, which is equivalent to the amount of food surplus existed in agricultural sector. This conclusion is opposed to Lewis's view in which the transfer of surplus labor to industrial sector is limited by the demand for labor, which in turn is determined by the rate of industrial capital accumulation. Furthermore, Jorgenson shows that if technological change in agriculture is not rapid enough relatively to population growth, under the limitation of land, the agricultural sector can never produce a food surplus and release labor for industry, and the economy will settle at a low level of equilibrium trap. To avoid this trap, rate of technological progress should be accelerated in agriculture.

¹⁸ This point is also closely related to Mellor's notion (1995: 5) of *"the importance of size of agriculture," where agriculture plays an important role in structural transformation because of its preeminent size, not its preeminent growth rate*. Along with this notion, in a review of eight case studies, Mellor (*ibid.*: 7) states that *'In the early stages of development, agriculture does indeed contain most of the land, labor, and capital of a low-income country. Perhaps more important, agriculture's economic weight makes it a potential source of effective demand for consumption goods. And, precisely because of the large numbers of people involved and their modest incomes, their consumption patterns tend to favor domestically produced, labor-intensive products.'*

¹⁹ Mundle (1985: 59) suggests that *'over the long run trends in agricultural prices reflect trends in production costs and hence productivity... Under given conditions of demand, prices*

would be lower in a situation where productivity is rising and supply curves shifting outwards as compared to one where there is no change in productivity'.

²⁰ 'If price of food were to fall with decreasing costs of production, consequent upon the rise in the productivity of labor in agriculture, this would substantially expand the demand for not only food but for other manufactured items of consumption as well. The increased scale of production of these other items would bring about a reduction in their unit costs of production and prices as well, thus leading to a further expansion of the market for consumption goods as a whole. The linkages stretch further. The expanded scale of production of consumer items in turn increase the demand for intermediates and capital goods required to produce consumption goods, thus bringing about a reduction in unit costs in these branches also. To the extent that agriculture itself uses the products of manufacturing industry, there could be feed-back effects leading to a further reduction in production costs in agriculture. The initial rise in the productivity of labor in agriculture would thus have set in motion a self-sustaining process of decreasing costs and increasing outputs across the board, with the growth of productivity and the growth of markets pulling each other along in tandem' (Mundle 1983: 769).

²¹ Mundle (1985: 61-2), concerning the development of capitalist industrialization only, classifies three types of agrarian systems:

- Type A: Agrarian systems where production is organized by the surplus producer but where the gains in productivity would be appropriated by the surplus appropriator.
- Type B: Agrarian systems where production is organized by the surplus appropriator and the gains in productivity are also appropriated by the surplus appropriator.
- Type C: Agrarian systems where production is organized by the surplus producer and the gains in productivity are also appropriated by the surplus producer.

Typical examples of such types of agrarian systems are feudal serfdom system, capitalist farming system (e.g. England since seventeenth century) and small modernized farming system (e.g. Japan since the late of seventeenth century), respectively. Mundle (1985) argues that only Type B and Type C can establish necessary conditions for industrialization as those systems create incentives for technology innovation and improvement in labor productivity in agricultural production. The point is that organizers of agricultural production under Type B and Type C can deploy previous surplus accrued to them, and benefit gains in productivity from technology innovation. In contrast, in systems of Type A, organizers of production have no incentives to experiment with new ideas or introduction to raise productivity. Nor they have the means to undertake innovations, which entail a large initial outlay since the previous produced surplus has been alienated from them. As a result, Type A of agrarian systems cannot generate basic conditions for successful industrialization.

²² Thirlwall (1995: 37) assumes that surplus over consumption within agricultural sector will fully spent on industrial goods for investment in the sector.

²³ This requires higher amount of agricultural output to exchange for a given amount of industrial output.

²⁴ Canning (1988) develops a model, in which diminishing returns in agriculture is offset by increasing returns to scale in industrial sector. It implies that *'the engine of growth is firmly located in the industrial sector; agriculture becomes more productive, but only by the use of ever larger amounts of cheap capital goods'* (ibid.: 463). This idea will be further discussed on the complementarities between agriculture and industry in the Section 7 of this chapter.

²⁵ This section is adopted from Kalecki (1976) and interpretation of Kalecki's works such as FitzGerald (1993) and Sawyer (1985).

²⁶ With the assumption of excess capacity in industrial sector, Kalecki (1976: 42) includes the accumulation of inventories in industrial sector as investment.

²⁷ If population growth rate is higher and income elasticity of demand for food is higher, the supply of food to industrial sector is more limited, hence leading to higher food price in terms of industrial products.

²⁸ This idea is prevailing in structuralist view (e.g. Cardoso 1981) that the economy will suffer from persistent inflation, if agricultural price respond less rapidly to excess demand than does the nominal wage rate to shortfalls of the real wage below some postulated target level. This type of inflation is caused by structural imbalance in developing countries, so monetary and credit restrictions, as used in neoclassical theory, are not effective to deal with inflation in developing countries.

²⁹ Indirect intervention is used to turn the terms of trade against agricultural products. The methods used include price controls, indirect taxes and exchange rate manipulation. Direct methods of control include direct taxation of farmers and landowners (usually based on income and property values); compulsory deliveries of agricultural products to the State (usually less than the prevailing market price); product-input batter exchange schemes with government acting as the monopoly supplier of inputs such as seeds and fertilizers.

Griffin (1974: 119-20, 129-30) favors the use of direct intervention as it does not create a systematical inefficiency of industrial sector as indirect intervention does. Kashenas (1995: 16-7) shows that an economy may get out of food trap and make agricultural sector contribute finance for industrialization by simultaneously investing in agricultural production and applying land tax.

³⁰ Applying the notion of 'bimodal agrarian system,' Griffin (1974) argues that price distortion leads large landowners to use labor-saving technologies in production as most of credit and machines is supplied at subsidized rate to them. It causes allocative inefficiency in agricultural production as there is a coexistence

of modern farms with a lot of land and machinery with surplus labor in the peasantry sector.

In addition, most of the burden of financing industrialization still falls on the peasantry despite the application of modern technology in agricultural production. In fact, the 'green revolution' tends to exacerbate rural inequality.

Finally, accelerating food and agricultural growth, if its benefits are spread wide and if initial income levels are low, tends to generate rapid growth of food demand. Supply and demand can then equilibrate at high levels without unduly depressing agricultural terms of trade. But as most of rural income is attributed to rich farmers and purchasing power of the poor remains limited, output growth may well reduce land rents and agricultural profits by reducing terms of trade. As a result, the rich farmers may organize against the acceleration of total agricultural output to keep high prices of agricultural products. Otherwise, agricultural growth may be accompanied by increase in stock accumulation and subsidized exports, which squeeze on the government budget (Rao and Caballero, 1990: 905).

³¹ Saith (1991) also observes that in most of developing countries, both food and employment balances are violated. Further more, even when the balances are met, it is possible that other mechanisms operate which lead to the violations of the conditions which the balances were meant to protect. The poor will not have the access to food if high price of food is introduced to obtain macro food security. The employment balance is still considered violated if sufficient growth of employment goes to a certain group of the population while it drops for the other.

³² Todaro (1969) proposes a model in which a potential migrant's decision to migrate is motivated primarily by the difference between his or her expected (rather than actual) urban income and the prevailing rural income. The model implies that attempt to reduce urban unemployment by creating more urban jobs could paradoxically result in more urban unemployment rather than less. By leading potential migrant to believe that their chances of getting an urban job increases, urban employment programs induce greater rural-to-urban migration. Therefore, urban unemployment could be best addressed by reducing the incentives to migrate to the cities, for example, by raising rural income via a broad range of agricultural and rural development programs.

³³ This idea is also shared by Hart (1996) in his comparative study on rural industrialization Asian countries and implications for South Africa. It is stated that *'...when agricultural incomes rise, farm households will spend a relatively large proportion of incremental incomes on relatively labor-intensive non-agricultural goods and services produced in rural regions; this in turn derives from the argument that small-farm agricultural growth generates not only backward and forward production linkages, but also - more importantly - consumption linkages'* (ibid.: 250).

3 Development Strategies and Vietnam's Economic Development

This chapter sets up the policy context as well as the debate around the role of agriculture in Vietnam. It looks at the changes in Vietnam's economy in the pre- and post-reform periods. The pre-reform period is divided into 3 sub-periods with different characteristics: 1976-80, 1981-84 and 1985-88. Similarly, the post-reform period is divided into 3 sub-periods: 1989-92, 1993-96 and 1997-2000. In each sub-period, the chapter investigates the evolution of Vietnam's economy around the following themes: (i) initial conditions; (ii) development strategies (regarding to choice of development path such as centrally planned or market-oriented economy, sectoral priority: industry or agriculture); (iii) institutional frameworks; and (iv) economic performance and debates around the factors affecting economic growth in Vietnam.

With this chapter's overall structure in mind, Sections 1 and 2 of this chapter are devoted to the description of development strategies and Vietnam's economic development in the pre- and post-reform periods. Section 3 concludes the chapter by pointing out major concerns for the research on financing development and intersectoral resource flows in Vietnam.

3.1. The Pre-Reform Period 1976-88: Socialist Industrialization and Economic Crisis

Vietnam's version of the traditional centrally planned model¹ was initiated in the North after formal independence in 1954². This model may be sketched out in terms of eight features:

1. *Land collectivization in agriculture and the establishment of cooperatives and State farms.* Collectivization was carried out in three distinct phases corresponding to different levels of ownership over the means of production (including land). These were: (i) the creation of mutual aid teams or production solidarity teams in which land remained privately owned, but traditional forms of collective activity and

tool sharing were institutionalized, extended further, and given permanent footing; (ii) formation of lower level production collectives in which means of production were pooled, income was distributed according to labor, and small rents on plots of land for production was owned by each member; (iii) advanced production co-operatives in which all land and other means of production were owned collectively and income was distributed according to work. In this phase, the common form of peasant remuneration was the work-point system (Beresford 1985: 7-8).

2. *Nationalization of the major part of industry and the whole banking system.* In fact, the industrial sector was built almost from nothing, and financed by foreign aid from CMEA countries (Fforde 1984: 6-9, Fforde and de Vylder 1988: 28, White 1982: 10). Industrial production in the DRV in 1954 represented only 1.5 percent of total production. Modern industry consisted of only seven enterprises including a distillery, a brewery, and an ice-making plant (Nyland 1981: 429, Vickerman 1985: 224).

The role of the banking system was passive. It consisted solely of the State Bank, which combined the functions of the central and commercial banks. The bank only had the task of financing the State budget and SOEs. Credit allocation to enterprises was governed by the annual credit plan. The bank was required to pass on funds without taking into account of risks and terms of loans. The interest rate policy was differentiated according to sector; real interest rates were negative, particularly at times of high inflation; lending rates were lower than deposit rates. This extremely repressive financial system resulted in a low capacity of saving mobilization, and therefore savers preferred to hold gold, dollars, and other physical assets.

3. *Economic development through centralization and mandatory planning.* In the industrial sector, capital resources were supplied by the State to SOEs in order to produce a certain product. These resources were essentially supplied for free. Each unit was managed by a level of State bureaucracy (a ministry, if centrally-managed; a provincial or city department, if locally-managed) that allocated labor to it. The unit was then given a regular production target, in quantity terms, and in order for it to meet this target it was provided with levels of

current inputs calculated on the basis of simple arithmetic formulas. These inputs were supplied directly to the unit by the State, and its output was also supplied directly to the State. As the unit existed essentially to produce for the target, with almost no freedom to choose either what it produced or who it produced for, it also had little interest in either the value of what it produced or the real costs involved in doing so. It was also not allowed to seek out a better supplier of its inputs. In this way the planners maintained central control over resources and could hope to ensure that they went to prioritized areas.

Under this system, it was also essential for the State to control all marketed surplus from agriculture in order to have sufficient amounts of food and raw materials to maintain the supplies of labor and intermediate inputs for the industrial SOEs. Therefore, targets were set for agricultural cooperatives to deliver products to State trading agencies under the better terms of trade ('two-way contract') that dis-favored the agricultural sector. In the case that peasant households preferred to sell agricultural products in the free market, which offered higher prices, the State could use the police to limit the transfer of goods between rural and urban areas and restrict these markets by erecting control posts around the districts. In order to maintain agricultural production and its marketed surplus, long-term investment in agriculture was financed by the State budget. Short-term investment was expected to be made by labor mobilization within agricultural cooperatives and by credits from State banks.

4. *Along with the mandatory planning, prices were fixed by the State.* Prices in the free market in 1964 were selected as the benchmark for the State to set up prices of commodities in the official market until 1981. Stability was the first priority in price policy in order to make planning easier. State trading agencies dominated both internal and external trade. Private traders sometimes were considered illegal. (Phan, V.T. 1990).
5. *Egalitarian income distribution.* Along with the work-point system in agricultural cooperatives, the rationing system was implemented in urban areas that covered most of necessity goods such as food, clothing, housing, medicine, and so forth.

6. *The highest priority was given to the medium-term plans of industry and within industry to increase its production of investment goods and of heavy intermediate inputs.*
7. *Foreign trade was allowed in limited amounts, linking primarily with CMEA countries and sometimes China.* Under the war against America, most of investment and intermediate inputs, or even consumption goods, were imported from and financed by other socialist countries, especially the Soviet Union and China³. Foreign exchange rates were fixed by the State, which were overvalued and differentiated among sectors.
8. *Limited access to foreign direct investment from capitalist countries.*

Nevertheless, much of the period from 1954 to 1975 in Vietnam could be viewed as an experience of a war economy as well as of a peacetime centrally planned economy. Indeed, it is unclear how far it can be said that Vietnam ever had a fully operational centrally planned system, in practice as well as intent. Three specific features of the DRV model should be noted. First, State trading monopolies were often rather weak and many trades still existed outside the official market. Prices in the free market were higher than those in the official markets, which encouraged the spontaneous adaptation of economic agents to exploit profitable alternatives. In addition, shortages of food and intermediate inputs supplied by the State, often led industrial SOEs to look for direct horizontal exchange with agricultural cooperatives and peasant households. These all together eroded the commodity funds of the State and monopoly power of State trading agencies.

Second, in contrast to the industrial sector where large-scale State enterprise became a dominant mode (though with much less centrally planned control than in the Soviet case), effective control was never established over rural production⁴. In fact, even the State industrial sector existed on the assistance of foreign aid⁵.

Third, Vietnam did not implement the policy of primitive socialist accumulation as in the early stage of Soviet industrialization. In fact, according to White (1982: 10),

State investment was concentrated on the industrial sector, but there was much less extraction from the countryside than in the early stages of Soviet industrialization. The State budget came primarily from foreign aid and in-

dustrial profits rather than draining agriculture. In this, it should be noted, Vietnam did not differ significantly from the Maoist model, which concentrated on encouraging rural self-reliance while channeling State investment into urban industry.

Such policies generated imbalance in the economic structure. Although agriculture was not drained severely, it was developed only on the basis of local resource mobilization and was of little priority in budget allocation⁶.

As a result, the DRV model left the country with five lasting effects after the war against America: a strong dependency on foreign aid, an excess of consumption over production, severe trade deficits, unbalanced growth in favor of the State industrial sector, and microeconomic inefficiency (Fforde and de Vylder 1988: 31-5, Vo, N.T. 1990: 58). Nevertheless, these shortcomings did not prevent the leadership of VCP from continuing the DRV model as they were convinced that this model was necessary for national liberation and for the reunited Vietnam.

3.1.1. The 1976-80 period: Reunification, socialist transformation and economic crisis

Following reunification in 1975, Vietnam faced many difficulties. First, the war damaged most of the infrastructure system and severely destroyed industrial enterprises⁷. It raised the need to reconstruct the economy, and a considerable effort was expected to go to the development of an infrastructure system and to the development of number of important heavy industries. In addition, a certain amount of resources were reserved for military force in a post-war society, particularly when diplomatic tension with China began.

Second, the economy was dominated by agriculture, which accounted for about 40 percent in total GDP and 70 percent of the total labor force. Vietnam was placed as one of the poorest countries with a GNP per capita around 100 US\$ in 1976. Agricultural productivity was low and food shortages were a chronic threat to the survival of the people⁸. As food accounted for more than 80 percent of expenditure, the State was greatly challenged to meet the post-war needs of the people, particularly for the urban workers and the administrative staff who needed improved living standards (Fforde and de Vylder 1988: 48-52).

Third, as mentioned earlier, the economy was highly dependent on foreign aid. It is estimated that foreign aid accounted for half of total output (equivalently to 1 billion US\$) in the North before reunification. The same amount of US aid flowed into the South. This distorted the economic structure and created a foreign aid dependent economy. As this source of income decreased in the post-war period, the State had to explore new domestic sources to ensure its control over the economy (White 1982: 11).

Despite those difficulties, Vietnam's Communist Party (VCP) attempted to strengthen centrally planned system for the whole country⁹. Intoxicated by the victory during the war against America, the 4th Congress of VCP (1977: 35), held on December 14-20, 1976, firmly asserted that

With the complete and sweeping victory in the patriotic war against US aggression, the Vietnamese revolution has entered a new stage, the stage in which the whole country becomes independent and unified and fulfils a single strategic task of carrying out the socialist revolution, advancing rapidly, vigorously and firmly to socialism [with emphasis].

It was expected that Vietnam could become an industrialized country by the year 2000 after the success of four to five Five Year Plans (Fforde and de Vylder 1996: 128, VCP 1977: 59). With this intention in mind, the VCP (1977: 58-9) outlined the goals of this new stage of socialist economic development as,

To step up socialist industrialization, build the material and technical basis of socialism, and take the economy of our country from small-scale production to large-scale socialist production. To give priority to the rational development of heavy industries on the basis of developing agriculture and light industry, build industry and agriculture in the whole country into an industrial-agricultural economic structure¹⁰...

According to White (1982: 24-6), these three points can be asserted on the VCP's proposed plan for building socialism:

- Building socialism means first and foremost industrialization
- The State and the VCP must play the leading role in socialist development, meaning that socialist transformation is inevitable in the South

- An industrial society, as understood, is characterized by large-scale production in both agriculture and industry.

Nevertheless, facing the serious shortages of food and other consumption goods as well as trade deficits, the Party had to compromise by paying considerable attention to the development of agriculture, light industries, and export production. This is reflected in the essential tasks outlined in the Second FYP (VCP 1977: 62-4):

- To stimulate the sudden growth of agricultural output, in order to provide food, improve living standards, and accumulate capital for industrialization
- To develop heavy industries, in the first instance to serve agriculture and light industry and then to increase capital formation in the next stages
- To increase exports rapidly, particularly agricultural and light industrial products.

With these intentions in mind, the VCP strategized three processes for Vietnam's economic development: (i) reconstruction of a war-torn economy; (ii) socialist industrialization; and (iii) socialist transformation. These three processes seemed to interrelate and place both as ends and means in development strategy.

On the one hand, economic reconstruction and industrialization needed financial resources, which, besides foreign assistance, required internal capital accumulation. This in turn called for socialist transformation, based on three assumptions. First, growth of capital accumulation was contingent on the expansion of industrial and agricultural output, which was supposed to be dependent on economies of scale. This in turn could be ensured only by the development of SOEs in heavy industries and large-scale agricultural collectivization. Second, only mandatory planning, particularly in agricultural and trade sectors, could depress consumption to subsistence level, hence raising the internal saving rate that was expected to go into the State budget. Third, socialist transformation of industrial capitalists and commercial farmers in the South was expected to transfer necessary resources for the development of heavy industries in the North.

On the other hand, the development of industrial SOEs and agricultural cooperatives only could be substantiated by the supplies of inputs from the large-scale machinery base of the industrial sector, or the development of heavy industries.

Four major measures were strategized for the post-reunification development of Vietnam. First, investment policy was to initially develop heavy industries, followed later by the development of light industries and, later, agriculture. Agriculture did, however, have a higher investment priority than it did pre-unification. The policy gave priority to investing the limited resources into the flourishing heavy industries that were still not advanced. This policy stressed the self-supply of raw materials, energy and the means of production (inputs into agriculture and light industry). For the production of consumption goods, only basic needs such as food, clothing, housing, healthcare and education were prioritized in the investments (Norlun 1984: 104).

Second, the socialist transformation was gradually undertaken against the industrial and commercial capitalists of the South from 1976. The State had considered that it would make a full use of the productive capacity of the private sector perceived as crucial for providing consumption goods and foreign exchange for the economy. Nevertheless, in the private sector the leeway given did not prove as beneficial to the economy as the State had expected. If anything, the continued existence of capitalist traders badly disrupted central control and distribution of necessity goods¹¹. This motivated the drastic move against the private sector in the South in March 1978. The State ordered that all trade and business operations of bourgeois tradesmen were to be abolished while small merchants could retail those goods not controlled by the State¹² (Lang 1985: 18-9, Nguyen, K.V. 1990: 42-6).

Third, in the North, since the 1974 Thai Binh Agricultural Conference, small-scale cooperatives were ordered to become large-scale and advanced cooperatives. The size of cooperatives was expanded from hamlets with dozens of households to entire villages with hundreds of households¹³. In some cases, the advanced cooperatives included 2-3 villages with more than 1000 hectares. The district became the economic unit for planning and management. In conjunction, agricultural mechanization and large investments were used in the construction of an agricultural infrastructure system. Brigades within the cooperatives were used as

the basis for cooperative production, with the brigades being responsible for directing labor in the fields¹⁴. The brigades were given plan targets by the cooperative and had to contribute all output to the cooperative. The system revolved around a detailed framework of labor categorization and norms that could formulate required labor inputs and other inputs that would be needed to meet the output targets, as well as to calculate labor remuneration (Chu, V.L., *et al* 1992: 32-9, Fforde and de Vylder 1996: 140, The Dat 1997: 10-28).

Fourth, by implementing the collective model in the North, Southern peasant households were forced to participate in low-level cooperatives, such as work-exchange teams or solidarity teams. Some pilot cooperatives were also subsequently set up. The purpose was to immediately strengthen the district level and prepare the necessary conditions to undertake rapid large-scale collectivization.

Figure II.A.1-3 and Table II.A.1 in the Appendix of this chapter, shows how these policy measures generated negative economic performance during the period leading up to 1980. GDP growth rate was very low at 0.2 percent annually on average. Particularly, agricultural growth was negative at 0.5 and 6.6 percent in 1977 and 1978 respectively, which was followed by a lag in negative non-agricultural growth of 5.4 and 10.1 percent in 1979 and 1980 respectively. As population growth accelerated by 2.2 percent, GDP per capita decreased at 2 percent per year during 1976-80. Living standards were seriously threatened, with a particular food shortage in 1977 and 1978 that led to the decline in food production per capita from 274kg in 1976 to 239kg in 1978. Compared to the minimum subsistence requirement of 300kg of food per person, this showed that Vietnam was facing a major food problem. At this time, Vietnam had to import 1.4 million tons of food per year. The average inflation rate was more than 20 percent annually, which was mostly caused by the increase of prices in the free market of 42.2 percent per annum. As prices in the 'organized' or 'official' market increased at only 3.5 percent per annum, this led to a widening gap between prices in the official and free markets. Exports were minimal and covered only 24 percent of imports as a result of poor economic performance. Vietnam's economy became more dependent on foreign aid, which decreased seriously in 1978 due to the withdrawal of Chinese and Western aid.

The poor economic performance has been attributed to external and internal factors. Externally, the military intervention into Cambodia at the end of 1978 resulted in the drying up of Western aid. In addition, Chinese aid, which was a key source of financing consumption goods imports and the operation of light industries, was withdrawn in 1978 and was followed by a brief but fierce border conflict in 1979 (Fforde and de Vylder 1996: 129). Furthermore, bad weather caused serious damage to agricultural crops in 1977 and 1978. All these factors together led to the shortages of food, consumption goods, and intermediate inputs that hindered the growth of the industrial sector.

Nevertheless, the critique of DRV model attributes most of the negative economic performance to the weaknesses of the centrally planned system. First, the model led to the inefficiency of resource allocation and utilization. As described by Fforde and de Vylder (1996: 58-62),

The forced pace of development meant that output plans issued to factories were set at high levels, perpetuating disequilibria and investment hunger. The plan emphasized strict fulfillment of output targets and the obligation to supply the resources needed to meet those targets. Based upon the direct administrative allocation of resources, planner did not need to compare alternatives by weighing cost against benefit.

At the micro level, enterprises had no difficulty in disposing of their products, which were delivered to the State trading monopolies according to the plan. Managers had strong incentives to hoard inputs so as to maximize output regardless of cost. They were quite free to borrow in order to finance increases in circulating capital, and they were as insensitive to capital costs as they were to the price of output and to the costs of inputs. Prices and costs simply did not matter greatly to this resource allocation system based on administrative instruction. Shortages were, therefore, inherent since sellers' 'markets' predominated. This 'shortage economy' was accompanied by high levels of short-run inefficiency, which affected the popular welfare but was partially masked by foreign aid.

Second, the socialist transformation was implemented so strongly in the South that it damaged the productive basis of economic units. Forced collectivization in the Mekong Delta, which was considered to be the largest 'rice bowl' in Vietnam, led to a sharp decline in rice output and to the massive slaughtering of buffaloes. Traders resisted the closing

of petty services sector in the South, particularly in the Chinese quarter of Ho Chi Minh City. The massive exodus of 'boat people' during the late 1970s left the industrial and commercial sectors in the South in a vacuum.

Third, the macroeconomic structure was imbalanced in a way that highly favored the development of SOEs in heavy industries while neglected the development of light industries, and particularly agriculture. Major shares of State investments went to heavy industries while those that went to agriculture and light industries were reduced to a bare minimum. Taxes imposed on agriculture were relatively higher than those on industry, and the procurement prices paid for agricultural products were low. Furthermore, State trading agencies did not have enough intermediate inputs and consumption goods to exchange with peasant households. These exchanges were often argued as being unfairly balanced against the peasant households. Combined with mismanagement in agricultural cooperatives, agricultural growth was hindered by these factors. Peasant households were, thus, also discouraged from participating in the exchange with State trading agencies.

As a result, the shortages of food and intermediate inputs supplied by agriculture, and of industrial consumption goods led to the under-utilization of SOEs' capacity that had been built by huge amounts of foreign aid. It is also worth noting that agriculture and light industries accounted for a major share of exports, but the poor performance of such sectors, therefore, led to low exports. On the one hand, this led to the increasing dependency on foreign aid for imports. On the other hand, the choice of resource allocation between sectors by the State was limited and mostly influenced by the decision of CMEA countries, and particularly the Soviet Union.

Lastly, the widening gap between official and free market prices made it difficult for State trading agencies to absorb sufficient amount of commodities, hence leading to the expansion of the 'fence-breaking' phenomena.

3.1.2. The 1981-84 period: The partial reform and re-centralization

The decrease in Western and Chinese aid caused serious shortages of consumption goods and intermediate inputs that were supposed to be

supplied by State commodity funds. In addition, the failure of collectivization in the South also led to the decrease in rice procurement of State trading agencies. As a result, the volume of resources coming through the State administrative supply system shrank, and economic units started to participate in direct horizontal exchange, i.e., the so-called 'fence-breaking' that eroded power at the center and made the centrally planned model impractical (Fforde and de Vylder 1996: 129-30). In combination with the stabilization of foreign relations with China and the defeat of the 'capitalist bourgeoisies' in the South, the worsening economic state led to debates within the Party focusing more on the economic sphere (Lang 1984: 24-5).

During the Fifth Plenum of the VCP held in July 1979, the leadership for the first time officially acknowledged the legitimacy of individual interests along side with those of collectives and society. State control was decentralized and more power was allotted to firms and localities. The main purpose of the reform was to improve microeconomic efficiency of SOEs and the agricultural cooperatives. It encourages the application of private initiatives to produce and circulate commodities not under State control, to produce goods made of locally available new materials and discarded materials, and to produce more for export. In addition, control stations which were established along main transportation routes in order to check illegal circulation of State-controlled goods, which led to the situation of '*ngan song, cam cho*' [river damming and market banning] in goods distribution and circulation, were abolished (Harvie and Tran, V.H. 1997: 41).

The Sixth Plenum of VCP held in August 1979 enhanced the reform further by converting it into a concrete program of new economic policies. Nevertheless, the new economic policies were not immediately implemented. It took further deterioration of the already desperate conditions, even causing food riots and peasant unrest in late 1980, to finally stimulate concrete efforts to liberalize the economy and prevent disastrous breakdown (Lang 1985: 34-6). As a result, important directives of the reform were issued in 1981.

The most radical changes were made in the agricultural sector. The aim to collectivize agriculture, resisted by peasant households in the South, was suspended. More importantly, Directive No. 100 of the VCP, famously known as 'Contract 100' [*Khoan 100*] or 'Output Contract'

[*Khoan san pham*], was issued on 13 January 1981 in order to prevent the spontaneous breakdown of the unpopular agricultural production cooperatives by making tactical concessions to cooperative members. The output contract system decentralized control over much of the labor process, benefiting the cooperative members, mostly peasant households. Each household was given land by the cooperative. The responsibility for production shifted down from the level of the cooperatives to the production brigades and from the brigades to the peasant households, which, in principle, took over the tasks that were formerly performed by the cooperative, namely, the tasks of growing plants, weeding, applying fertilizer, and harvesting. This "output contract" system provided incentives for increased output, by setting a production quota for the households, a quota which was determined on the basis of productivity of the land during the previous three years. If production fell short, the households had to make up the deficit in the following year, except in the case of natural disasters or exceptional circumstances. If there was a surplus, they could keep it, sell it on the free market, or sell it to the State-trading agencies at "negotiated prices" (Vo, N.T. 1990: 132-3). The cooperatives still performed certain tasks - usually caring for water supply, seeds, and land preparation, which were paid for by the contracted amount of output. Taxes and deductions for the local schools as well as other less popular fees imposed by the local authorities also had to come out from the contracted amount (Fforde and de Vylder 1996: 140)

Also in January of 1981, Directive 25-CP, known as "Three Plan" system, was issued to encourage SOEs to become more accountable. Most important was the First Plan (Plan A), which proposed that factories used State supplied inputs and, then, delivered the resulting output at low prices to the State. This aspect of production had to have absolute priority over any other activities, and permission to carry out any other activities was conditional on fulfillment of Plan A.

Under the Second Plan (Plan B), factories was legally permitted to acquire resources by itself, more or less independently of planners' influence, and could then dispose of them to the State as it wished, but only in order to acquire additional inputs. However, they were not allowed to freely expand their activities by buying and selling as they wished.

The Third Plan (Plan C) addressed the "minor" products that resulted from the unit's own attempts at diversification. This production was free

from State control, largely because such products were not meant to be supplied to established consumers, so there was less demand within the planning system for their continued subsidized supply. However, priority was to be given to State trading agencies when the unit disposed of these products (Fforde and de Vylder 1996: 138-9). In addition, SOEs were allowed to pay their employees on a piecework basis - a practice denounced by ideologists as a potential source of conflict and income differentiation.

In mid-1981 some drastic measures relating to price regulation and the exchange rate were undertaken. A primary aim of the reform was to increase the revenue of the center by eliminating the gap between official and market prices and, thus, eliminate the ability of individuals to profit from this gap¹⁵ (Beresford and Fforde, 1996: 17). Only nine items of consumption goods remained rationed, including rice and other basic wage goods. Retail administered prices of other consumption goods were increased ten fold. At the same time, as a form of compensation, wages for SOE workers and civil servants were doubled. Prices of industrial materials were set higher but not adjusted to market levels. This, however, had a less important impact because the majority was still under central control through the foreign trade system. Procurement prices of agricultural goods were increased to the same level as market prices, while prices of intermediate inputs of agricultural production accelerated faster.

The Fifth Party Congress, held in March 1982, reconfirmed and expanded on the plan outlined during the Sixth Plenum in August 1979. The most important reform was the idea that the period of transition to socialism had to proceed through two stages. During the first stage, Vietnam would 'continue building the material and technological [basis] of socialism, with emphasis on boosting agriculture, consumption goods [industry], and exports while at the same time improving the technical basis of other economic branches, and making preparations for a more vigorous development of heavy industry in the next stage' (VCP 1982: 54). This meant that the development priority on heavy industries would have to be abandoned and that more investment resources were to be transferred to agriculture, consumption goods, and foreign trade. It, thus, prioritized the restoration of macroeconomic balance

As the Appendix of this chapter infers, this partial reform was quite successful. GDP growth rate was recorded at 6.7 percent on annual average during 1981-84. Starting from 1979, agricultural growth accelerated at 6.6 percent per year on average during 1981-84, reaching its peak at 10.6 percent in 1982. From negative growth in 1979-80, the growth rate of the non-agricultural sectors also increased after 1981, recorded at 6.7 percent on annual average during 1981-84. Compared to 1976-80 period, food per capita increased from 260kg to 293kg during 1981-84. The coverage rate of exports over imports was improved at 35.6 percent as the share of exports in the GDP increased to 7.8 percent while that of imports was reduced to 21.9 percent. This economic recovery from the crisis in 1976-80 was attributed to four main factors brought about by the above reform measures, which: (i) provided material incentives to producers; (ii) respected individual initiatives; (iii) slowed the pace of socialist transformation; (iv) shifted from centralized economic management by giving due autonomy to local authority and individual production units (Harvie and Tran, V.H. 1997: 45).

Nevertheless, it was argued that such reform measures had only an *ad hoc* effect on output growth. Agricultural growth decelerated since 1983. Particularly, food production increased less than 1 percent in 1983, leading to the decline in food per capita under the minimum subsistence level of 300 kg. Export earnings accelerated very fast during 1980-82, but then declined since 1983¹⁶. Inflation accelerated at more than 60 percent per year during 1980-84. The gap between free market and official prices were kept at ten times or more. Cost of living spiraled upwards because prices of necessities and especially consumption goods multiplied when the increased supply could not meet the even greater demand. Thus, as Party cadres with fixed salaries faced increasing difficulties to survive economically, corruption resurged. At the same time, opportunities for corruption were also expanded with increased local autonomy and the rapid revival of private enterprises. SOEs preferred to engage in free market exchanges in order to raise cash to buy additional materials or to pay bonuses to workers. Inflation in free markets worsened and shortages were exacerbated by the hoarding of goods in order to speculate on price differences. Localism emerged as a particular problem as localities erected trade barriers aimed at maximizing available rents. All these factors combined to substantially erode the State's control over resources.

Even since the Fifth Party Congress, attempts had been made to re-centralize State control and defend the institutions of the centrally planned system. The process of agricultural collectivization in the South was restarted. In the Mekong Delta up to 1985, 80 percent of peasant households were recorded as members of cooperatives. The State trading agencies still tried to dominate the marketable surplus of food staples, although peasant households, under the 'output contract' system, were, in principle, free to sell their surplus in the free market (Fforde and de Vylder 1996: 134). SOEs were liberalized to make use of the slacks in the economy, but were limited by local control. The State re-centralized hard foreign exchange earnings of localities, as it was argued that such autonomous earnings could diminish the control of the State¹⁷. A typical example was the shutting down of export-import companies in Ho Chi Minh City in 1982, where some 'responsible' people were criminally prosecuted (Fforde and de Vylder 1996: 135). This became clear during the Seventh Plenum (Fifth Congress), held in December 1984, when the re-centralization of economic decisions was addressed as an immediate necessity (Lang 1985: 44).

Observers on Vietnam's development argued that the 1979-81 reform was very limited, as its main purpose was solely to improve the micro efficiency of the existing centrally planned model. No attempt was made to decentralize the State's control over resource allocation. Nevertheless, as the economy started to be commercialized, the State was not able to keep its dominant control over the economy. Furthermore, its defense of socialist institutions led to further economic stagnation.

The decline in economic growth and the rise in inflation were attributed to four factors. First, the agricultural cooperative still retained the ability to increase or decrease the cooperative members' share of the contracted amount by altering the system of payment for the inputs assigned to both itself and the members. As the payment for taxes and other fees for the cooperative increased, peasants' incentives were reduced again. In many cases, peasants returned land to the cooperatives, and put more effort into the 5 percent land. It is estimated in 1983-84 that peasant households received only 16-17 percent, or even 13 percent in some places, of the contract output; an amount that could not possibly compensate even for production expenses (Vo, N.T. 1990: 134).

Second, the State still kept strict control over centrally-managed SOEs. This sector could grow only on the basis of input availability from the State. As the development of the informal free market eroded the State's monopoly over resources, this task became very difficult. In fact, the highest growing sector in industry after 1979 was small-scale and locally-managed industries.

Third, the price reform required the State to pay higher prices for supplies of intermediate inputs and for labor of SOEs. This increased budget deficit and further inflation, put more pressure on the State to subsidize SOEs, and, therefore, led to another round of inflation, particularly in the free market. More importantly, the widening gap between the official and free markets drained both the State and, thus, the SOEs that had previously relied upon the State for access to cheap resources.

Finally, the State did not pay enough attention to the development of agriculture, light industries, and the export sector. The shortage of food and consumption goods hindered the State's ability to control resources as economic units tried to participate in horizontal linkages for these kinds of goods. In practice, during 1981-84 heavy industries still received the majority of State investments, which share was even higher than those in the 1976-80 period. Shares of State investment in agriculture decreased further during 1981-84. Although procurement prices of agricultural products increased, the prices of intermediate inputs for agricultural production accelerated faster, deteriorating the terms of trade for agriculture even further. This negative effect of price scissors on agricultural production was further exacerbated by the inefficiencies of State distribution system (Fforde and de Vylder 1996: 182).

3.1.3. The 1985-88 period: Money, wage and price reform, and economic crisis

By 1985, spiraling inflation forced a reform proposal to solve the problem of high free market prices 'at a stroke', because otherwise it may worsen State's control over resources further. A combination of currency reform, increased State prices, and higher wages was introduced. The reform proposal submitted in 1985 was in essence the same as that of 1981. Rationing would be abolished altogether, prices would be increased to market levels (and be allowed to remain there), and subsidies

would be paid as wages in order to compensate workers for the price increases.

The price reform envisaged the elimination of the dual pricing system in which transaction prices within the State sector were well below those prevailing in the open retail market. Because the government aimed at compressing the budget deficit, official prices of many inputs were raised to levels closely reflecting their actual scarcity. These were accompanied by proportional raises in loans to SOEs and wages to compensate for the loss in price subsidies. SOEs were thus to become increasingly self-supporting, not only in current operations but also in capital formation for which the State Bank would take the role of earlier budget allocations. The State Bank began printing money in January and, since it lacked the technical capacity, much of the new cash had to be printed in the USSR and Germany. Even with outside assistance not enough could be printed. The decision was therefore taken in September 1985 to introduce a currency conversion at the rate of 1 new *dong* to 10 old *dong*. The change in the denomination of money was expected to reduce the inflation rate by annihilating large cash holdings, and, therefore, restabilize the economy (Beresford and Fforde 1996: 22).

Along with other changes in the economic policies that will be discussed later, such measures did not achieve economic growth as the previous period had. The Appendix of this chapter shows how the GDP growth rate reduced to 4.6 percent on annual average during 1985-88 from 6.7 percent during 1981-84. Growth of non-agriculture was lower at 5.6 percent per year. Agricultural growth decelerated seriously to only 2.2 percent per annum during 1985-88. Particularly, agricultural growth was recorded at negative 1.8 percent in 1987 when food production decreased by 4.4 percent. This led to famine in some provinces as food per capita was only 281kg. The improvement of the coverage rate of export over import at 40.2 percent was mainly due to the decrease in the share of import over GDP to 17.1 percent while that of export was still stagnated at 6.8 percent. Inflation started at 91.6 percent in 1985 and accelerated to three-digit percentages for the three years of 1986-88. Particularly, inflation hit 774.7 percent in 1986.

The low growth rate and high inflation levels were attributed to four factors. First, peasant households had very low incentives to push up agricultural production as terms of trade for agriculture were declining

and the share contributed to the cooperative was increasing. As inflation was too high, peasants lost their incentives to work on cooperative land and to exchange with State trading agencies because the procurement prices were fixed at low level. In addition, taxes on agriculture were complained to be too high. As a result, peasant households received only 13-15 percent of crops (Vo, N.T. 1990: 193).

Second, although share of agriculture in State investment increased somewhat, it was not sufficient to stimulate rapid agricultural growth. Particularly, the agricultural sector did not have enough intermediate inputs. Peasants received only 30 percent of fertilizer they needed. The quality of industrial equipment used for agricultural production was also very poor.

Third, the State did not have sufficient commodity funds because of stagnation in agriculture and the spontaneous commercialization of industrial SOEs. As inflation accelerated to high levels, particularly in the free market, nominal wages of SOEs workers were forced to increase, thus accelerating inflation further.

Fourth, although changes in currency sharply curtailed the existing monetary overhang, the impact on movable private wealth was strongly ineffectual, as private wealth was mostly kept in gold and the parallel currency: the dollar. It did, however, destroy the *dong* assets of SOEs, which led to a cash shortage that the State had to compensate for simply to keep firms in operation. Although the State budget deficit was kept at low level, SOEs were, instead, allowed to borrow freely and almost without limit, in order to continue their purchases in the free market. This sharply increased the monetary supply and stroke inflation.

3.2. The Post-Reform Period 1989-2000: Transformation to a Market Economy and Industrialization

3.2.1. The 1989-92 period: Structural adjustment and stabilization

A package of measures was implemented during 1987-89 that fundamentally changed the nature of Vietnam's economy from a centrally planned to a market-oriented system. The year of 1989 is completely regarded as the landmark that distinguished between pre- and post-reform periods in Vietnam. According to Fforde and de Vylder (1996: 304), 'Whereas the

changes prior to 1989 primarily attempted to attack the inefficiencies of the DRV model, policy and practice after 1989 attacked, then demolished, the very foundation of the old system.' It was not merely 'structural adjustment', as recommended by IMF in other developing countries, but a virtual revolution in the entire development concept and strategy. It was not only the measures of 'getting the prices right', but 'making the prices matter' (*ibid.*).

The *Doi Moi* (reform) process was originated from the Sixth Congress of VCP, held in December 1986. Confronting high inflation, erosion of State institutions and severe shortages in the economy, *Doi Moi* was seen essentially as a matter of 'life or death' for the existence of the VCP. As intended from the Sixth Congress of VCP, objectives of this reform were:

1. To stabilize the economy under high inflation and serious economic imbalances.
2. To develop the private sector
3. To increase and stabilize agricultural output
4. To shift the focus of investment from heavy and to light industry
5. To focus on export-led growth, based upon the experience of Vietnam's dynamic regional neighbors
6. To attract foreign direct investment (FDI), seen as essential for economic development.

These objectives were confirmed in the Fourth Plenum (Sixth Congress), held in December 1987, emphasizing that during the remaining years of the current FYP (1988-90) the Party 'must strive to achieve at all costs the target of substantially stabilizing the socio-economic situation, and prepare favorable conditions for socio-economic development for the ensuing years...Our priorities must be in the implementation of the three major economic programs [food staples, consumption goods and export programs] particularly the food program' (quoted from Vo, N.T. 1990: 184).

Nevertheless, such reformist intention had been consolidated only since the end of 1987 when high inflation and food shortage threatened living standards of the people and eroded State's resources. In addition, it was clear by 1988 that Soviet aid would soon decline, implying that

more domestic resources were needed for economic growth as well as the changes in investment priority from heavy industry to agriculture and light industry. Furthermore, it raised the hindsight that 'soft budget' policy could not be sustained.

There were three major characteristics of Vietnam's economic reform since 1986. First, it followed the 'gradualism' approach without political reform. The dictatorship of VCP still maintained, and as a result its economic base - the SOEs that mostly concentrated in heavy industry - had to play the leading role in industrialization.

Second, the reform mostly focused on improving micro efficiency of the economy by giving more autonomy and incentives to the growth of both State, cooperative and private sectors. But this time, it was not to be adjusted within the institutions of mandatory planning. Instead, adjustment was directed to the development of the market system. Though investment priority in heavy industry was lessened, it did not mean that the leading role of the State sector would be falling down. The intention of the VCP was to liberalize all productive forces, particularly from non-State sector, to push up economic growth. The surplus resources, thanks to the economic growth, were expected to flow to State sector through State intervention by market instruments rather than administrative intervention. Particularly, State capability to directly inject resources for the SOEs was limited as it was doing stabilization program, which required the decrease in budget deficit, hence reducing State investment. Instead, the State had to look for market institutions to mobilize resources to assure the leading role of SOEs, which, of course, had to adjust themselves to become more autonomous, accountable and competitive.

Third, export had to play a more important role in financing the imports of investment goods and intermediate inputs for the development of domestic industries, as generous foreign aid from CMEA countries fell down since 1988, and then stopped in 1991.

In 1987, the ration system was abolished, except for essential goods such as rice, kerosene, and some others, and official prices of non-essential goods were raised to a level close to free market prices. Administered prices of most consumption goods and of a large number of agricultural and industrial inputs were increased sharply in 1987 and 1988. Nevertheless, the gap between official and free market prices was still very large (though with lower margins than before), particularly in the

markets for key agricultural products, such as rice, and foreign exchange. In March 1989, the price reform was accelerated, as almost all prices were deregulated, and the distinction between official business prices and free market prices was abolished. This was followed, in 1991, by the cessation of all price controls, with the exception of electricity (Fforde and de Vylder 1996: 294-5, Sepehri and Akram-Lodhi 2002: 17).

Price liberalization was accompanied by the opening of markets for both internal and external trade. In 1987, internal control posts were abolished, accelerating trade between regions, between SOEs and private sectors as well as between urban and rural sectors. In 1988, foreign trade reform was initiated as tariffs began to replace quantitative restrictions. Concurrently, the government ceased its exclusive control of foreign trade through State trading agencies and import export licenses. Finally, to bolster the competitive position of the economy, the official exchange rate was sharply devalued and brought to near equality with free market rate in December 1989 (Sepehri and Akram-Lodhi 2002: 14).

In agriculture, Resolution No. 10 (Contract 10) of the VCP, issued in 1988, initiated the process of de-collectivization and revived the development of the peasant household economy in rural areas. Under the Contract 10, the proportion of contracted amount to be left to the cooperative members should 'not be less than 40 percent.' The land allocated was to be left for 15 years at least, and the norms and unit prices in the contract, as well as the contract itself, had to be fixed for five years. Cooperatives and their members were in principle free to decide which work the cooperative and their members, would do, respectively. Good farmers were to be encouraged by giving them more land, with those who lost land to find work outside rice cultivation. The cooperative was to retain duties to support the families of war dead and others. Cooperative management expenses were to be kept as low as possible. The contracts were to be signed between the family and the cooperative, whereas previously the production brigades had been involved (Fforde and de Vylder 1996: 157).

Consistent with the easing of internal trade and further efforts to reinvigorate the role of markets in allocating resources, policy measures were adopted to grant more autonomy to SOEs, primarily by removing the role of planning targets in the decision making processes of these enterprises. The implementation of these measures meant that the only

target levied by the State on SOEs was the contribution of the SOE to the State budget.

However, perhaps of greater importance in the reforms of the period between 1986 and 1988 were the efforts to strengthen the economic role of the private sector¹⁸. In 1987, the first law on foreign investment was introduced, which opened the door to investors seeking to supply the internal market behind still significant trade barriers. In 1988, Resolution 16 provided the legal framework for an expansion of private SMEs (Sepehri and Akram-Lodhi 2002: 15).

In 1989, under the terms of Decree 176, SOEs had devolved onto them the bulk of the key managerial and financial decisions made by the enterprises, as ministries removed themselves from production decisions. Thus, SOEs were freed to determine investment decisions, input procurement, employment and wage levels, and the output mix. They were also freed to negotiate prices with suppliers and buyers. As part of the restructuring, SOEs had to 'reregister', a mechanism that was used to dissolve some key loss makers and merge others. The result was, over time, a reduction in the number of SOEs, and more than a million lost jobs (Sepehri and Akram-Lodhi 2002: 17). The reform was further consolidated in late 1991 by the VCP guidelines calling for an end to SOE subsidies¹⁹. The provision of imported inputs at below international market prices ceased in 1991 when Soviet assistance came to an end. In addition, subsidized credit from the banking system, which had continued during 1989-91 period, was halted in 1992. These measures have gone a long way toward putting State and private firms on equal footing. The Constitution adopted in 1992 provided explicit protection of private property rights and recognized the important role of the private sector in the economy. Vietnam had begun to enact the laws necessary for a market economy to function effectively, including laws on private companies and on contracts. The commercial laws that had been enacted provide clear sanction for private firms to expand.

In 1988, the State took an initial step to restructure the banking system by distinguishing the function of a central bank of State Bank of Vietnam from commercial activities. This was further consolidated by the promulgation of the Law for the Vietnamese State Bank and the National Law on Banks, Cooperative Credit Institutions, and Financial Institutions in 1990. The State Bank was specifically prohibited from

commercial banking activities, but was empowered with the formal legal powers of a central bank, including: authority to set and enforce reserve requirements, to engage in open market operations, to manage official exchange reserves, and to establish an effective system of bank supervision. The second decree gave the State commercial banks greater autonomy and permitted them to compete with each other and to seek capital from sources other than the State (Le, D.D. and McCarty 1995: 120-1).

The reform generated positive economic results as it accelerated economic growth while slowing down inflation. Looking at the Appendix of this chapter, inflation rate was tamed to only 36 percent in 1989 after accelerating at very high rates during 1986-88. This arose from measures bringing monetary growth under control and to stabilize the *dong*, as well as the increased availability of products. Monthly interest rate was raised to 12 percent in the early 1989 that ensured the positive real interest rate. This, in turn, helped absorb the monetary overhang by encouraging people put their saving in *dong* account, instead of hoarding dollar, gold and physical goods, which all lower monetary velocity. The declining rate of inflation was also assisted by the growth of food, thanks to the positive effect of Contract 10 in agriculture, and the availability of imported consumption goods as a result of foreign trade liberalization. Nevertheless, the lowering rate of inflation was not sustained in the 1990-91 as the State still tried to rescue SOEs by injecting more subsidies and credits to them after the collapse of CMEA. The large budget deficit and increase in money supply led to high inflation rate close to 70 percent during 1990-91. Inflation was curbed again only in 1992 when hard budget constraints were firmly imposed on SOEs.

The response of the economy to the reform was very good. During 1989-92, GDP growth was 6.1 percent on annual average, of which growth of agriculture and non-agriculture was 3.8 and 6.9 percent, respectively. Reforms in 1989 brought an initial surge in output, especially in agriculture and services, and real GDP increased by 4.7 percent. However, at that time, Vietnam was still receiving substantial assistance from the Soviet Union. Foreign resources flowing into Vietnam dropped precipitously between 1989 and 1991, and this inevitably had an effect on growth. The growth recession was surprisingly mild, however, with GDP growth maintaining at 5.1 and 5.8 percent in 1990 and 1991. The year 1992 was very good for Vietnam. By that time, the economy had fully

recovered from the shock caused by the collapse of the Soviet Union, and growth climbed to an 8.7 percent rate (Dollar 1994: 362-3).

The good economic performance during 1989-92 was attributed to four factors. First, the reform brought about incentives to increase output and productivity in SOEs and agricultural cooperatives, and encouraged all productive forces from the private sector. Growth was accelerated first of all in agriculture, leading to a high demand for construction and service sector, which had previously been depressed. It shows the dynamic potentials of the private sector as liberalization policies were implemented. The reform in Vietnam did not experience the behavior of a recession related to the 'J-curve-effect,' experienced in many other transition economies, in large part due to the previous marketization (fence-breaking) within the socialist institutions. The micro response to the macro changes of 1989 was predictably that of a market economy, with rapid increase in output as market access improved radically. Reform within the SOE sector led to more efficient operation of those enterprises and growth of the sector was improved despite the collapse of CMEA as both the major supplies of inputs and demand for exported goods of the sector.

Second, it is argued that market and price liberalization had a positive impact on agricultural sector by improving terms of trade and income for peasant household, thus giving them incentives to expand production and marketed surplus. Vietnam became the third largest exporter of rice in 1989 even though it had to import about 400 tons of food during 1987-88. The availability of food, along with large inflows of consumption goods due to the opening of the border, played positive role to tame inflation and set up a sound base for growth in industrial sector.

Third, cutting the budget deficit had positive impact on economic stabilization and improvement of domestic saving and investment. Though FDI did not inflow sufficiently to replace the lost of Soviet aid in this period, investment still accounted for 15.4 percent of GDP. Domestic saving financed around 70 percent of investment, which mostly came from private sector. Budget saving was also improved as it became positive since 1990.

Fourth, growth of exports played an important role to ease foreign exchange constraints as imports financed by foreign aid from CMEA

countries stopped. Rice export was a main source for foreign exchange earnings in this period.

However, further economic growth could not be sustained as domestic saving and investment rate was still too low (Fforde and de Vylder 1996: 284-5). It was claimed that the private sector, as a main source of domestic saving, was treated unfairly under new economic policies, discouraging the use of this important source for investment (Fforde and de Vylder 1996: 284). In fact, share of State sector in total GDP increased from 32.5 to 34.3 percent during this period. Particularly, most of growth of the State sector was concentrated in heavy industries. SOEs received most credit from the banking system to compensate for the loss in direct subsidies from the State, since the State-owned commercial banks still functioned as money distributors for the State. The State still played the monopolistic role in foreign trade. Particularly, State trading agencies got privileged access to rice export quotas, and it was claimed to reduce the farm-gate price of rice substantially.

David (1994: 74-6) estimated that State intervention in rice export undervalued domestic rice price by 25 to 30 percent, of which two-thirds was caused by the inability of State trading agencies to obtain the highest possible export price. Though devaluation brought substantial gains to exporters, the exchange rate was still considered to be overvalued that hampered the incentives of exporters, particularly in rice sector.

More importantly, the legal and institutional framework for efficient operation of the market had not been established firmly, particularly in factor markets, leading to massive rent-seeking problems. The commercialized SOEs, which had initiated the 'bottom-up' reform in the past, were now becoming the main obstacles to further reform. As remarked by Fforde and de Vylder (1996: 261), 'Although plan distortion had largely been eliminated prior to 1989, market distortions remained significantly and strongly influenced by the events of the 1980s'. This discouraged private investment and maintained imbalanced economic structure that hampered agricultural growth.

3.2.2. The 1993-96 period: Expansion of foreign trade and FDI

The most important event in this period was the resumption of lending from IMF and World Bank and the normalization of relations with the United States in 1993. In 1994, the United States lifted the economic

embargo against Vietnam. This opened the door for large inflows of FDI. Reforms continued during the period between 1993 and 1996, but at a slower pace than before. Many of these reforms served to consolidate the previous policy initiatives.

Perhaps the most significant structural reform of the period was in the area of trade policy. Export quotas ceased with the exception of rice. Import quotas were reduced to only seven items, and import permits were introduced for most remaining controlled items. In 1995 Vietnam joined the Association of Southeast Asian Nations (ASEAN) and subsequently acceded in 1997 to the agreements designed to introduce as ASEAN Free Trade Area (AFTA) by 2006, agreements that are predicated upon substantial lowering of tariff and non-tariff barriers to trade.

The most significant institutional reform was the revision of the civil code in order to provide an institutional foundation for a market economy that protected industrial property rights. In agriculture, the Land Law issued in 1993 extended longer terms of land use rights and specified five rights of land holders: transfer, exchange, lease, inheritance and mortgage. This was expected to initiate the process of agricultural commercialization by encouraging long-term investment in agriculture (Sepehri and Arkam-Lohdi 2002: 21).

The 1993-96 period was considered the golden age of the market economy in Vietnam. In the words of Sepehri and Arkam-Lohdi (2002: 20), 'it was the period in which it appeared that the Vietnamese economic dragon would finally emerge from hiding'. Looking at the Appendix of this chapter, GDP growth was as high as 9 percent per year, in which agricultural growth was maintained at 4 percent and non-agricultural sector accelerated up to more than 10 percent. Particularly, growth was led by the industrial sector that accelerated at 14 percent on annual average. Growth was driven by unprecedented levels of investment, which reached a high level of 26.2 percent as a result of sharp increase in FDI that accounted for 29.1 percent of total investment during the 1993-96 period.

Inflation was contained at less than 10 percent per annum as the State continued its control over budget deficits at only 2.2 percent of GDP. The high inflation rate of 14.4 and 12.7 percent in 1994 and 1995 respectively, was resulted from credit expansion and bottleneck in agricultural production. The establishment of new credit ceilings in 1996 tamed infla-

tion at only 4.5 percent again. Imports increased quickly as a result of investment growth. Nevertheless, the balance of the payment situation was manageable since most of the increases in imports were covered by accompanying growth of export and FDI.

One characteristic of economic growth in this period was that it was biased for SOEs and import-substitution industries (Kokko 1997, Kokko and Zejan 1996). Most of SOEs were concentrated in import-substitution industries that grew very fast during 1993-96. The share of SOEs in total industrial GDP became bigger.

Although this leading role of SOEs was partially explained by the reform that improved the efficiency of the sector SOEs still received quite favorable treatment in both input and output markets. First, most of the credit from SOCB was directed to SOEs. Second, most of FDI participated in joint-venture with SOEs because only SOEs had the rights to contribute land as capital in joint-venture. Third, as most of SOEs concentrated in import-substitution industries, the sector was heavily protected under the concurrent trade regime.

This strategy may hamper the prospect of further economic growth. Most SOEs operated with obsolete machinery and equipment, poor management and financial performance. Since the aggregate debt of the SOE sector was about 20 percent more than the sector's aggregate turnover in 1995 (Kokko 1997: 6), the stability of the banking system became threatened. Further, the concentration of resources to import-substitution SOEs also crowded-out necessary resources for the development of private sector, which played the most important role to generate employment and foreign exchange through export. The trade deficit at 15 percent of GDP in 1996 was alarming, and called for further reform in the trade regime that favored export-oriented industries.

3.2.3. The 1997-2000 Period: Regional crisis and economic sow-down

Vietnam was shielded from the regional crisis starting from 1997 due to the non-convertibility of the *dong* and regulation of trade and exchange transactions. Nevertheless, the crisis put two negative effects on Vietnam's economy. First, the devaluation of other regional currencies made Vietnam's exports less competitive. Second, the crisis also led to the re-

duction in FDI inflows to Vietnam as most of FDI came from the countries under crisis.

In response to this situation, the State intended to stabilize the economy and promoted the growth of demand by three measures. First, import controls were tightened to face the threat of serious balance of payment crisis²⁰. Second, domestic demand for the industrial sector was increased by putting more concentration on the development of rural sector, particularly rural industrialization. Third, the *dong* was devalued considerably to promote exports (Sepehri and Arkam-Lodhi 2002: 22)

Despite the regional economic recession, Vietnam still maintained a quite good economic performance. It followed a cautious economic stance, giving priority to ensuring economic stability rather than taking risks in order to achieve higher economic growth. Looking at the Appendix of this chapter, during 1997-2000, GDP growth, though lower than the last period, still stayed at 6.8 percent on annual average, in which agricultural growth accelerated to 4.5 percent thanks to good harvest. These figures stand in contrast to the deceleration of non-agricultural growth to 6.8 percent. Particularly, GDP growth still maintained at 5.8 and 4.8 percent in 1998 and 1999, which was the most severe period of economic recession in the region.

Inflation was stable at 3.8 percent per year, resulting from strict fiscal and monetary policies. Inflation went down to 0.1 percent in 1999 and even -0.6 percent in 2000 after rising to 3.7 and 9.2 percent in 1997 and 1998, respectively. This, in part, was explained by a drop in food prices, as food per capita sharply increased to 435kg during 1997-2000 period. Also, low inflation resulted from a drop in aggregate demand as increasing stock of inventories were built in industrial plants (Masina 2002: 228). Despite the decrease in FDI, investment still accelerated to 28.5 percent of GDP, which was mostly self-financed by SOEs and domestic private sector. Export continued growing at a rate of about 20 percent per year, while imports were more restricted. This led to a shrink in trade deficit of 5.2 percent of GDP and export/import coverage was more than 90 percent.

As a commitment to economic reform, and after much negotiation, in 2000 the State agreed a bilateral trade agreement with the United States. The agreement not only opened up the US market to Vietnamese firms but also implied substantial reductions in the level of protection given to

the economy in a number of sectors, including several where foreign investment had been prohibited. At the same time, the State unilaterally removed some remaining quantitative restrictions on trade. In a highly publicized move, in 2000 a stock market opened in Ho Chi Minh City that, although small, quickly became the best performing stock market in the world.

Even though the pace of further reforms slowed down, the commitment of the State was clear. It reflected both the reluctance of the State at the time when the future of the region crisis was not certain, as well as the contradictory interests within the State. Meanwhile, international donors like the World Bank, IMF and UNDP pushed the reform further by using the worsening of the economic conditions in order to acquire more leverage in laying down conditions to the State (Masina 2002: 231). Three priorities were indicated as: (i) reform of the SOEs; (ii) creation of a neutral trade regime; and (iii) the development of a strong financial system.

It was argued that the existence of large SOEs, with connections to the political leadership, non-regulated support from the State financial sector, and preferential access to FDI, were draining an excessive share of national resources. Therefore, the SOEs were an obstacle to the development of the nascent private sector and were hampering broad-based and sustainable growth. The existence of restriction to free trade, through quotas and duties, was also considered an impediment to the full exploitation of the country's comparative advantages. Also a banking system heavily influenced by political constraints was considered as dangerous both, due to the risk of non-performing loans (especially through lending to SOEs) and for the limited access to capitals for the small and medium private enterprises. As a result, Masina (2002: 235) concluded that, 'post-crisis Vietnam is in search of a coherent development strategy. The traditional Vietnamese pragmatism, the need to mediate among different interests, and the will not openly to challenge international donors, have prevented the national authorities from announcing a too-binding and elaborate strategy'.

3.3. Conclusions

After the country's reunification, the VCP attempted to extend and to consolidate the centrally planned system in the whole country. The major

objective in development strategy was to conduct socialist industrialization, emphasizing the dominant role of the State and large-scale production in both agriculture and industry. Major economic institutions served for this development model were: (i) the dominant power of SOEs in industries, particularly SOEs under central management in heavy industries; (ii) State control over internal and external trade through State trading agencies; (iii) mono-tier banking system under the control of the State; and (iv) collectivization in agriculture.

Four major measures were selected in Vietnam's development strategies after reunification. First, policy gave priority to investment of the limited resources into not very advanced, but quickly growing heavy industries. Second, socialist transformation was undertaken against the industrial and commercial capitalists in the South from 1976. Third, in the North, cooperatives were ordered to become larger and more advanced. Fourth, by applying the collective model in the North, Southern peasant households were forced to participate into low-level cooperatives such as work-exchange teams or solidarity teams and some pilot cooperatives were set up.

The decrease in Western and Chinese aid, and the shortage of food and other consumption goods along with this in the late 1970s, reduced the volume of resources coming through the State administrative supply system. As a result, economic units started to participate in direct horizontal exchange, i.e., the so-called 'fence-breaking' that eroded power at the center and made the centrally planned model unworkable.

Facing the economic crisis, the State had to decentralize its control to firms and localities in the late 1970s and the early 1980s. The main purpose of the reform was to improve microeconomic efficiency of SOEs and the agricultural cooperatives. The most radical changes were made in the agricultural sector. The drive to collectivize agriculture, resisted all along by peasant households in the South, was suspended. More importantly, Directive No. 100 issued in January 1981 decentralized controlled much of the labor process to peasant households. Land was allocated for a short-term period of one year to peasant households to manage, and they were allowed to sell surplus over the 'contract quota' to the free markets or to State procurement system under 'negotiated prices'.

Also in January of 1981, Directive 25-CP, known as "Three Plan" system, was issued to encourage SOEs to be more accountable. In the mid-

1981 some drastic measures in the sphere of prices and exchange rate were taken. A primary aim of the reform was to increase the revenue of the center by eliminating the gap between official and market prices. At the same time (as a form of compensation) wages for SOE workers and civil servants were doubled.

Nevertheless, it was argued that such reforms were only *ad hoc* measures to cope with serious economic crisis at that time. Since the Fifth Party Congress in 1982, attempts had been made to re-centralize State control and defend the institutions of centrally planned system. First, in agriculture the process of collectivization in the South was restarted. State trading agencies still tried to dominate the marketable surplus of food staples. Cooperatives still retained the ability to increase or reduce the cooperators' share of the contracted amount. Second, the State still kept strict control over centrally managed SOEs. Further more, the State re-centralized its control over hard foreign exchange earnings of localities as it was argued that such autonomous earnings could diminish the control of the State. Third, the price reform required the State to pay higher prices for supplies of intermediate inputs and labor for SOEs. This increased the budget deficit and furthered inflation, which again put more pressure on the State to subsidize SOE sector that led to another round of inflation, particularly in the free market. Finally, the State did not pay enough attention to the development of agriculture, light industry, and export sector. In practice, heavy industry still received the lion's share of State investment.

By 1985, spiraling inflation forced an attempt to solve the problem of high free market prices 'at a stroke', since it prevented the State from controlling resources. A combination of currency reform, increased State prices, and higher wages was introduced. The reform proposal submitted in 1985 was in essence the same as that of 1981. Rationing should be abolished altogether, prices should be increased to market levels (and allowed to remain there), and a subsidy paid to wages in order to compensate workers for the price increases. However, the continuity of credit and wage subsidies for SOEs and their workers, in addition to bad harvests in 1986-87 caused serious economic instability and hyperinflation.

Consequently, the pre-reform period witnessed low economic growth, high inflation, limited domestic saving and serious deficit in State budget,

trade balance and balance of payment. Low agricultural growth was associated with stagnation in industrial sector, except in the 1981-84 period when the partial reforms brought about modest achievements. One serious problem in the pre-reform period was the shortage of food as food per capita rarely exceeded the minimum requirement of 300 kg annually. Agricultural stagnation and food shortage in the end of the 1970s and in 1987 sufficiently threatened economic and social stability.

The *Doi Moi* (reform) process was originated from the Sixth Congress of VCP held in December 1986. Objectives of this reform were: (i) to stabilize the economy under high inflation and serious economic imbalances; (ii) to develop the private sector; (iii) to increase and stabilize agricultural output; (iv) to shift the focus of investment from heavy and to light industry; (v) to focus on export-led growth, based upon the experience of Vietnam's dynamic regional neighbors; and (vi) to attract foreign direct investment (FDI).

Nevertheless, a package of measures was implemented only during 1987-89 that fundamentally changed the nature of Vietnam's economy from a centrally planned to a market-oriented system. Therefore, the year of 1989 is completely regarded as the landmark that distinguished between the pre and post-reform periods in Vietnam.

During 1987-91, the ration system was abolished, and almost all prices were deregulated so that the distinction between official business prices and free market prices were abolished. Price liberalization was accompanied by the opening of markets for both internal and external trade. Internal control posts were abolished, accelerating trade between regions, between SOEs and private sectors as well as between urban and rural sectors. Foreign trade reform was initiated as tariffs began to replace quantitative restrictions. At the same time, the State removed its exclusive control of foreign trade through State trading agencies and import-export licenses. The official exchange rate was sharply devalued, becoming equivalent to the free market rate in December 1989.

In agriculture, Resolution No. 10 of the VCP issued in 1988 initiated the process of de-collectivization, and revived the development of peasant household economy in rural areas. Land was relocated to peasant households for 15 years at least, and the norms and unit prices in the contract, as well as the contract itself, had to be fixed for five years.

Peasant households were allowed to sell surplus products in the free market.

Along with internal trade liberalization, the State also tried to promote the role of markets in allocating resources. SOEs were granted more autonomy and planning targets were abolished in the decision-making processes of these enterprises. Furthermore, a number of policy measures were initiated to strengthen the economic role of the private sector, and to encourage private investment from both domestic and foreign sources.

In 1988, the State took an initial step to restructure the banking system by separating the function of the central bank, the State Bank of Vietnam, from commercial activities. The State Bank was specifically prohibited from commercial banking activities, but was empowered with the formal legal powers of a central bank.

Strong reform measures and strict application of a stabilization program during 1989-92 totally changed the nature of Vietnam's economy by setting up the primary basis for the development of a market economy. Those measures helped Vietnam come through the crisis in the end of the 1980s, and more importantly inflation had been tamed by 1992.

During 1993-96, reforms continued, but at a slower pace. Many of these reforms served to consolidate what had previously existed before. The most important event in this period was the resumption of lending from IMF and World Bank and the normalization of relations with the United States in 1993. This opened the door for large inflows of FDI. In addition, significant structural reforms were done in the area of trade policy. Export quotas ceased with the exception of rice. Import quotas were reduced to only seven items, and import permits were introduced for most remaining controlled items.

In terms of institutional reform, the civil code was revised in order to provide an institutional foundation for a market economy that protected industrial property rights. In agriculture, the Land Law issued in 1993 extended longer terms of land use rights and specified five rights of land holders: transfer, exchange, lease, inheritance and mortgage. This was expected to initiate the process of agricultural commercialization by encouraging long-term investment in agriculture.

Vietnam was shielded from the regional crisis starting from 1997 due to the non-convertibility of the *dong* and the measures to control aggre-

gate demand. Import controls were tightened to face the threat of serious balance of payment crisis. In addition, the *dong* was devalued considerably to promote exports.

Further reform was initiated in 2000, when the State agreed to a bilateral trade agreement with the United States after much negotiation. The agreement not only opened up the US market to Vietnamese firms but also implied substantial reductions in the level of protection afforded the economy in a number of sectors. At the same time, the remaining quantitative restrictions on trade were removed. Finally, in 2000 a stock market opened in Ho Chi Minh City.

The 1989 reform brought about both economic growth and stabilization. Starting first in agriculture, growth spread to service and industrial sector later on. In 1989, Vietnam became a net food exporter for the first time and ranked as the third largest rice exporter. Food availability was an important factor for economic stability. Up to the 1992, the stabilization program was successfully implemented when inflation was tamed down to about 10 percent. The 1993-96 period was the golden age of the market economy in Vietnam with growth rate of 9 percent and inflation less than 10 percent annually. This period also witnessed massive inflows of FDI that accounted for about 30 percent of total investment. Growth was still maintained at 7 percent during 1997-2000 despite the crisis in East Asia and inflation was kept at very low level of less than 4 percent annually.

Trade liberalization also gave rise to the growth of export that became the important source to finance the rising import of both capital and consumption goods after Soviet aid cuts in 1991. Albeit, the investment rate was still maintained at relatively high level due to the growth of domestic saving and investment, in which the private sector and SOEs played dominant role. Budget deficit was drastically reduced in an attempt to stabilize the economy. The exploration of oil and gas in the Southern coast improved State revenue considerably while the expenditure was under control, in which State investment was relatively limited. Foreign inflows such as FDI and ODA played important role only in the 1993-96 period. For most of the time, investment was financed by domestic non-budget sources.

Nevertheless, the pace of further reforms was slower though the commitment of the State was clear. It reflected both the reluctance of

the State at the time when the future of the regional crisis was not clear, as well as the contradictory interests within the State. Meanwhile, international donors like the World Bank, IMF and UNDP pushed the reform further, by using the worsening of the economic conditions in order to acquire more leverage in laying down conditions to the State. Three priorities were indicated as: (i) reform of the SOEs; (ii) creation of a neutral trade regime; and (iii) the development of a strong financial system.

In sum, both intellectuals and policy makers agreed that the centrally planned system with high investment priority on heavy industry could not bring about steady growth and economic stability in Vietnam during 1976-88. The economic crisis in the late 1970s forced the State to liberalize somewhat productive forces in the economy. This reform, however, was merely to protect the institutions of centrally planned model when it was in crisis. The rhetoric of socialist industrialization was still so strong within the leadership of VCP that the State tried to re-centralize its monopolistic controls over the economy again when the crisis was over. In contrast, the spontaneous commercialization of economic units under shortages of food and consumption goods started rising again that drained further resources from the State. This process reached its peak during 1985-88 when the economy stagnated with hyperinflation as a result of money, wage, and price reform and of the sharp increase in State credit pumped into SOEs.

The critique of the centrally planned model in Vietnam argued that the model was not applicable as long as the macroeconomic structure was not balanced. The underdevelopment of agriculture was the main cause of the shortages of food and other consumption goods. In addition, the failure of agriculture to supply foreign exchange earnings was the main obstacle for the utilization of SOEs' capacity, as it constrained the import capability of important intermediate inputs and consumption goods.

The intensive reform since 1989 completely changed the nature of Vietnam's economy. The market mechanism replaced mandatory planning in resource allocation. In view of the VCP, it liberalized all productive forces and utilized all slack in the economy that created high economic growth. The role of the State in resource allocation was more limited, as it aimed to achieve economic stabilization. It is agreed that the

reform significantly improved microeconomic incentives, or in other words, it utilized resources more efficiently. In addition, the declining role of State budget promoted domestic private and foreign resources to finance development.

Nevertheless, it was not clear whether there was any change in the macro structure of the economy leading to such a good economic performance in the post-reform period. There is no hard evidence from both policy makers and intellectuals to show that: (i) Was there any change in the macroeconomic structure in the post-reform period? (ii) Did the good economic performance in the post-reform somehow come from changes in macroeconomic structure?

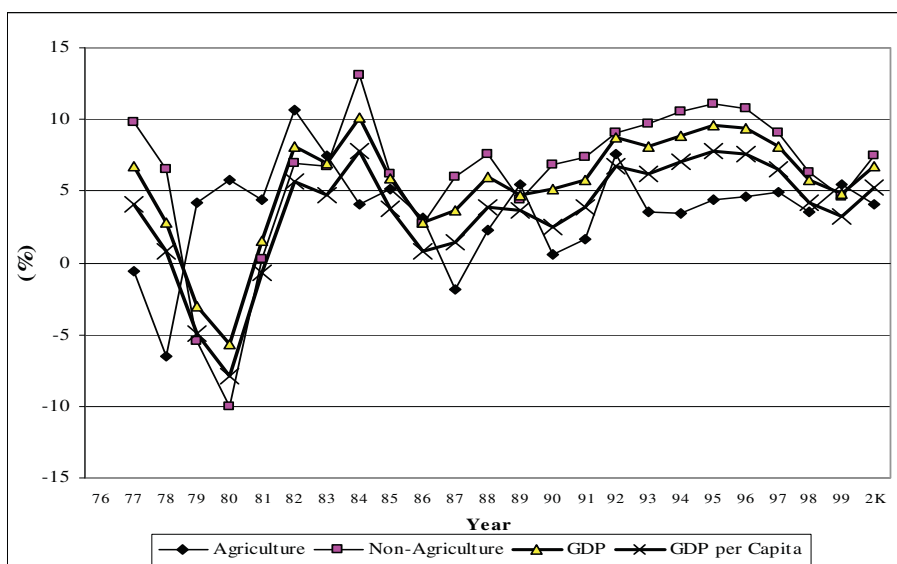
Here, one needs to make some speculations to clarify the view of the so-called conservatives and reformist both within the VCP and among intellectuals on those two questions. On the conservative side, the answer for the first question would be "yes", as it was stated in the reform program even in 1986 that the three programs of food, consumption goods and export should get priority in development strategy. Particularly, investment priority was planned to move from heavy industry to agriculture and light industry. More importantly, price liberalization in 1987-89 increased the terms of trade for agricultural products considerably. This may be argued further that such changes brought about the availability of food, consumption goods and foreign exchange that were needed to stabilize the economy. Particularly, the increase in agricultural production had important effects on industrial growth as it maintained stable supplies of wage goods intermediate inputs and foreign exchange needed for the import of industrial sector. Moreover, as growth was constrained by demand shortages, the State did deal with the problem of low rural income and made an effort to promote agricultural growth and rural industrialization. As a result, the reform made a lot of progress in terms of improving efficiency of resource utilization within sectors and resource allocation between sectors. Further, economic growth would mainly require the expansion of investment. It implies that economic policies should be more open to FDI and encourage the mobilization of domestic saving for investment in industrial sector, particularly in industrial SOEs.

In contrast, the reformists did not see many changes in the macro structure of Vietnam's economy. It could be argued that policy statement

of the VCP was not reliable because it often did not take action. Furthermore, empirical evidence given by Western intellectuals showed that the State still tried to protect the development of SOEs that mostly concentrated in heavy and import-substitution industries. This argument was based on four points: (i) though agricultural terms of trade were improved along with the economic reform, the squeeze of agriculture was still persistent as the State did monopolize agricultural export. Together with the overvalued exchange rate, it lowered the prices paid to peasant households compared to prices in the world market; (ii) though investment from State budget decreased, the State still did direct credit from SOCBs to finance SOEs. As financial resources of SOCBs came from the saving of the private sector, it meant that the State intervened to drive resources in favor of SOEs; (iii) most of FDI participated in joint-ventures with the SOEs, which were the unique domestic institutions that were allowed to contribute land as capital in the joint-venture operations with foreign partners; (iv) SOEs were protected under the trade regime that favored import-substitution industries. As a result, it implied that high economic growth in the post-reform period was mainly due to improvement of microeconomic efficiency. Further growth of the economy required changes in macroeconomic structure that favored the development of the agricultural sector.

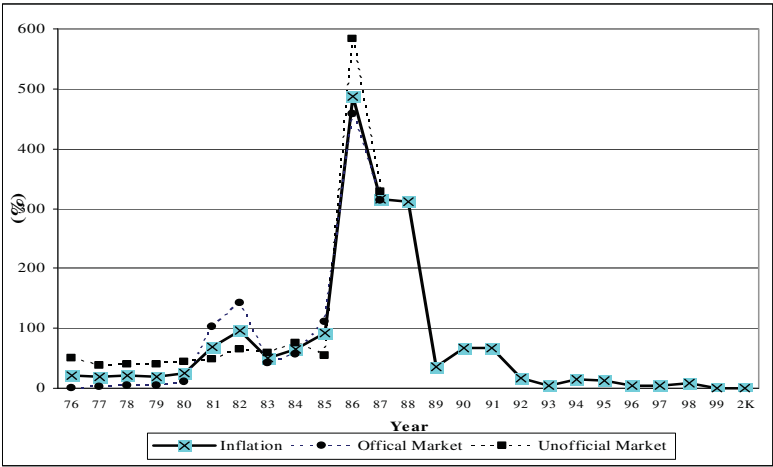
Appendix Chapter III.

Figure III.A.1.
Economic Growth, 1976-2000
 (1994 price, percent, annual changes)



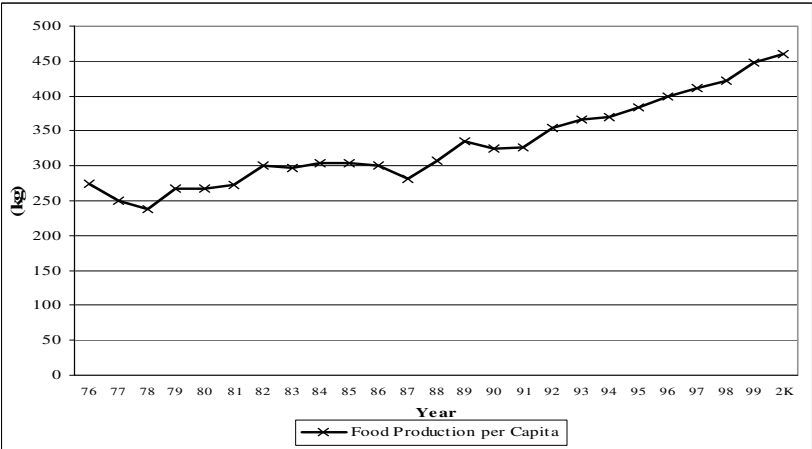
Source: Table VI.4.

Figure III.A.2.
Inflation, 1976-2000
(percent, annual changes of CPI)



Source: Table V.6 and Table VI.A.24

Figure III.A.3.
Food Production per Capita, 1976-2000 (kg)



Source: GSO (various years)

Table III.A.1.
Macroeconomic Accounts, 1976-2000

(percent of GDP)

Indicators	1976-80	1981-84	1985-88	1989-92	1993-96	1997-2000
Budget Balance	-17.1	-10.1	-7.8	-4.4	-2.2	-2.1
Revenue	25.1	26.1	13.6	15.0	22.3	19.6
Expenditure	42.2	36.1	21.4	19.4	24.5	21.7
Trade Balance	-20.1	-14.1	-10.3	-7.2	-9.6	-5.2
Export	6.3	7.8	6.8	29.0	34.1	48.1
Import	26.4	21.9	17.1	36.2	43.7	53.2
Net Factor Payment Transfer	-	-	-1.1	-4.2	-2.3	-1.7
Net Current Transfer	16.1	7.4	1.9	8.6	6.1	3.8
Current Account Balance	-4.0	-6.7	-9.5	-2.9	-5.7	-3.9
Investment	19.0	13.0	13.4	15.4	26.2	28.5
National Saving	11.0	3.4	2.2	11.9	21.2	23.5
Domestic Saving	-5.0	-4.0	1.5	7.6	17.3	22.1
Foreign Saving	16.1	7.4	0.8	4.3	3.8	2.2
Discrepancies	-4.0	-2.9	-1.7	-0.6	0.6	-0.1

Notes: In accounting identity, the gap between national saving and investment should be equal to the current account balance. Therefore, the discrepancies show the difference between saving-investment gap and current account balance.

Source: Table VI.A.1-2.

Endnotes of Chapter 3

¹ Fforde and Pain (1987) named it as the DRV (Democratic Republic of Vietnam) model.

² In 1954, Vietnamese communists defeated France. Under Geneva Agreement, Vietnam was divided into 2 countries: the North influenced by the Soviet Union and China; and the South dominated by the United States. During 1954-75, Vietnam became a place for fierce fighting between 2 political systems.

³ Fforde and de Vylder (1988: 30-1) noted that *'aid donors found themselves under pressure to modify the patterns of assistance. This means that supplying the DRV [Democratic Republic of Vietnam] State apparatus and the newly installed State industry with the inputs that should have been supplied from the domestic economy. Consumption goods imports rose in order to meet the needs of the workers; industrial inputs had to be brought in in order to operate the machines. This trend towards import dependency was increased by the onset of US bombing, after which high levels of foreign aid helped maintain output and consumption.'*

⁴ Chu, V.L., *et al.* (1992: 6-36) and Beresford (1985: 11-2) remarks that the collective system was firmly established only in the period of 1965-68, when there were heavy American bomb attacks that motivated the traditional collective actions within the communes. In this time, full attention of the government was devoted to war effort and, in particular, to keeping industrial production. Relatively little stress was placed on the development of agriculture. In other times, the system worked very loosely as it was imposed from outside. Even, the phenomena of 'sneaky contracts' took place within the collective system since the early 1960s.

⁵ Norlun (1984: 98) remarked that: *'Although internal accumulation is highly valued in "the Vietnamese way" it is also officially recognized that the "socialist brother countries" have contributed much to the development of socialism in Vietnam. This is regards as a result of proletariat internationalism and an important reason why it should be possible to develop a backward society toward socialism without going through a capitalist stage.'* Fforde and de Vylder (1988: 31) asserted that *'They [wartime imports financed by foreign aid] permitted a further expansion of the over-grown State sector whilst the domestic economy's inability to supply needed inputs to it. ... A return to a peace would, unless there were major changes in development policy, expose the non-priority sector (above all agriculture) to even higher pressures from the State to supply cheap resources. The State monopolies would be under greater pressure from competition from other methods of allocating resources, in particular the free market.'*

⁶ In fact, it was not clear whether the State squeezed agriculture to transfer financial resource for industrialization. Empirical evidence suggests that foreign aid finance capital accumulation in both agriculture and industry with more concentration on the latter. This policy just ensured an adequate subsistence

level of rural population. The urban population, on the other hand, had to rely to a very great extent on imports of rice and other consumption goods from China (Beresford 1985: 8).

⁷ It was estimated that 60 percent of villages was destroyed in the South. In the North, this figure was 70 percent. In addition, 29 Northern provinces were under bomb attack, in which 12 provinces were outright destroyed, including 6 big cities like Hanoi and Haiphong. Four hundred industrial enterprises and infrastructure system were seriously damaged (Nguyen, K.V. 1990: 11).

⁸ Food per capita was 300kg per year, equivalent to 1900 kilocalories per day, which was below the 'warning line' of sufficiency (Fforde and de Vylder 1988: 52).

⁹ There was a strong debate within the Party about the pace of integration of the South into the centrally planning system in the North. In economics terms, it would have been more beneficial to gradually set up institutions of centrally planning system in the South. Nevertheless, political consideration, at last, was more influential (Lang 1985: 11-4, Nylan 1981: 438-46, Vo, N.T. 1990: 58-64).

¹⁰ Dao, D.T. (1994: 42) suggested that the 4th Congress of VCP softened the principle of socialist industrialization, compared to that in the 3rd Congress. It implies that investment priority was put totally on heavy industry before the reunification, and resources for agricultural development were self-mobilization from agricultural sector. In contrast, industrial development in the post-war period was more focused on branches that supplied capital and intermediate inputs for agriculture and light industry.

¹¹ It is estimated that 65 percent of the southern market was under private control in 1978 (Lang 1985: 18).

¹² In addition, the shift away from gradualism was not merely economic grounds, it was equally a political response as most of capitalist transformed was in Cho Lon sector, which was the major base of oversea Chinese, and the year 1978 marked the beginning of political tension between Vietnam and China (Lang 1985: 19).

¹³ In 1979 the average size of a cooperative in the North was 202 hectares, on which an average of 378 households lived and worked (Que, 1998 quoted by Akram-Lodhi, 2001: 9).

¹⁴ There were two different types of production brigades. The first was the basic production brigades, which was consisted of women and the older people, and performed much of the less specialized manual labor necessary for production. The second was specialized production brigades, often consisting of men and the young people, performed more skilled tasks such as irrigation, fertilizer production and application, and plant protection. Basic production brigades worked according to 3 contractual quotas (*Ba kēhoan*). The first was a production outlay contract, which stipulated the inputs available for production. The sec-

ond was work points contract, which stipulated the work points given for different types of jobs. The third was an output contract, which stipulated the amount of output that was required to produce. The production brigades would then subcontract the quotas to smaller teams of laborers, families and households. Basic production brigades that exceeded their work point and output quotas were allowed to retain between 80 and 100 percent of the excess. However, if the brigade failed to fulfill their quota they were still responsible for providing between 50 and 70 percent of the deficit (Men 1995, quoted by Akram-Lodhi 2001: 8-9). Basic production brigades were paid on the basis of the amount of time spent working. Specialized production brigades were accrued work points that paid them according to both the quantity and quality of the work that was performed. Notwithstanding these differences, however, incomes were fairly uniform, with payment being proportional to work points. In some areas, incomes were paid exclusively in kind, and the rate of remuneration was set at a minimum of 13 kilos of paddy per month and a maximum of 18 kilos of paddy per month (Que 1998: 21-2, quoted by Akram-Lodhi, 2001: 9). In other areas, labor was paid in cash while at the same time receiving a stipulated food quota (Men 1995: 33, quoted by Akram-Lodhi 2001: 9). The productive structure, along with the local autonomy afforded local leaders, allowed cooperatives to isolate themselves from the wider economy, which in turn made it difficult to make appropriate economic decisions (Fforde and de Vylder 1996: 184, quoted by Akram-Lodhi 2001: 9).

¹⁵ This was the first time the State accepted the co-existence of free market prices parallel with official prices fixed by the State. The 'dual' price system, argued by Phan, V.T. (1990: 74) was a necessary transitional step before fully liberalizing all prices determined by the free markets.

¹⁶ In rub-dollar value, export growth reached its peak at 31.3 percent in 1982, then it declined to 17.1 percent in 1983 and only 5.2 percent in 1984 (GSO 1988, Table 202: 297).

¹⁷ In an effort to encourage export and self-financing of SOEs, the State had allowed SOEs to have direct import and export under license, and to retain hard currency earnings from such trade. In addition, local export-import companies had been encouraged after the Sixth Plenum.

¹⁸ Until the *Doi Moi* reforms, the private sector had not played a significant role in the transition process. Rather, market relationships had, to an increasing extent, begun to dominate the economic decision of the State sector. Thus, markets were emerging from within the State, even in the absence of clearly defined property rights.

¹⁹ In fact, direct subsidies from the budget were stopped in 1989.

²⁰ Strict quantitative restrictions and temporary import prohibitions were introduced to limit import of consumption goods and commodities such as cement,

glass, paper, and steel. Apart from reducing import surplus, it was expected to help local firms, mainly joint-ventures and affiliates of foreign multinationals, reduce their large inventories. Besides, currency controls were also used to curb imports. Firms were obliged to deposit their foreign exchange earnings in designated commercial banks, and the allocation of foreign exchange to potential importers was subject to a licensing procedure managed by the State Bank (Kokko 1998: 5).

4 Accounting and Analytical Framework for the Intersectoral Resource Flows

This chapter serves two purposes: (i) to set up the accounting framework of ISRFs; (ii) to generate an analytical framework for the ISRFs. In Section 1, the accounting framework of ISRFs, based on Karshenas (1995: 27-47), concerns three important points. First, it is necessary to define clearly the demarcation between agriculture and non-agriculture. Such demarcation should serve the purposes of the analysis and help to address the problem of data limitation. Second, defining key terms, such as ‘net resource contribution’ or ‘net finance contribution’ of the agricultural sector is essential for analysis. We need to develop the factors that are included in net resource outflows from agriculture, and more specifically to consider if the net resource outflows from agriculture include only physical goods or both goods and services. Third, the estimation of ISRFs cannot ignore the terms of trade mechanism for resource transfers between agriculture and non-agriculture. Therefore, it also is necessary to determine what types of prices are used to account for the real net ISRFs between sectors.

Section 2 is devoted to developing an analytical framework that can formulate factors determining the direction, magnitude, and pattern of ISRFs in Vietnam during 1976-2000. Based on this accounting framework, it will be shown that net finance surplus from agriculture can be generated if three conditions are met. First, the agricultural sector must rise out of subsistence level to create a significant amount of marketed surplus. Second, the sector must have positive saving, meaning that its income must be much larger than its consumption. Third, agricultural saving must be greater than investments in the sector in order to generate saving surplus for the non-agricultural sector. Following this line of argument, Section 2 determines the major factors affecting ISRFs in the specific context of development strategies and institutions in Vietnam. For each factor, the changing conditions from the pre- to post-reform periods are always specified for easy comparison.

Section 3 draws conclusions and implications for the analysis of ISRFs in the following chapters.

4.1. Accounting Framework of ISRFs

4.1.1. The demarcation of sectors

The principle of accounting equality requires the correspondence between production, exchange, consumption, and investment activities on the commodity side with institutions on the financial side of agricultural surplus. Data availability in Vietnam, however only allows the investigation of the sectoral demarcation between agricultural activities and non-agricultural activities¹. Agriculture includes only crop farming and animal husbandry, but not fishery and forestry activities. Those activities are undertaken by State farms, agricultural cooperatives² and peasant households. Therefore, any kind of production, exchange, investment and consumption activities taking place on the farms of those institutions should be counted for the agricultural sector on the commodity side. It also means that activities outside those farms should be excluded from the agricultural sector. Equivalently, State farms, agricultural cooperatives, and peasant households take all responsibility for any financial transfer between agricultural and non-agricultural sectors.

4.1.2. Concepts of ISRFs

There are two different ways of looking at the ‘net finance contribution’ or ‘net resource contribution’ of the agricultural sector to the accumulation in the other sectors of the economy. In the conventional way, net resource contribution of agriculture is described as the difference between the volume of agricultural goods transferred to the non-agricultural sector, and that of non-agricultural goods transferred to the agricultural sector³. In this way, resources are seen as goods only, and, therefore, exclude services. It is similar to the balance of trade of an economy if one imagines that agricultural and non-agricultural sectors are two different countries. In other words, the net resource transfer from the agricultural sector is conventionally defined as the difference between commodity exports and imports of the agricultural or farm sec-

tor to the rest of the economy. If we denote agricultural exports or sales by X_a and imports or purchases by M_a , the net resource transfer or net finance transfer from agriculture is:

$$R = X_a - M_a$$

Table IV.A.1 and 2 in the Appendix shows the SAM framework, which is used to simplify the presentation and estimation of ISRFs. From row 1 and 2 of Table IV.A.2, it can be seen that X_a and M_a can be decomposed according to the types of demand in the following way:

$$X_a = A_{an} + C_{ag} + C_{an} + I_{ag} + I_{an} \quad (IV.1)$$

$$M_a = A_{na} + C_{na} + I_{na} \quad (IV.2)$$

Given the accounting identity between column 1 and row 1 in Table IV.A.2, equation (IV.1) can be written as:

$$X_a = A_{na} + F_a - C_{aa} - I_{aa} \quad (IV.3)$$

Combining equations (IV.2) and (IV.3), we arrive at the net resource or net commodity contribution of the agricultural sector as:

$$R = X_a - M_a = F_a - (C_{aa} + C_{na}) - (I_{aa} + I_{na}) \quad (IV.4)$$

From the financial side, a net export surplus of the agricultural sector corresponds to a net outflow of funds from the sector. To derive the financial counterpart of this concept of net resource contribution, we utilize the accounting identities of column 6 and row 6, and column 9 and row 9 in Table IV.A.2 again:

$$(C_{aa} + C_{na}) = (Y_a - S_a) + (T_{ag} - T_{ga}) + (T_{an} - T_{na}) \quad (IV.5)$$

$$(I_{aa} + I_{na}) = S_a + (K_{ag} - K_{ga}) + (K_{an} - K_{na}) \quad (IV.6)$$

Substituting these measures of agricultural consumption and investment into equation (IV.4) gives:

$$X_a - M_a = (F_a - Y_a) + (K_{ga} - K_{ag}) + (K_{na} - K_{an}) + (T_{ga} - T_{ag}) + (T_{na} - T_{an}) \quad (IV.7)$$

As shown in equation (IV.7), the balance of commodity trade of the agricultural sector is used to finance and, therefore, must always be identical to the sum of net transfers of factor and non-factor services, net capital transfers, and net current transfers from agricultural to non-agricultural sectors.

Also in the conventional analysis, it is considered that the real net financial contribution of agriculture to the other sectors should consist of both 'visible' and 'invisible' components. The 'visible' component is R measured at current domestic prices. The 'invisible' component is the part of agricultural surplus that is brought about by changes in the commodity terms of trade between the two sectors from the base-year, which is defined as the 'the most normal year' in the specific studied period (Ishikawa 1967, Karshenas 1995). Ishikawa's formula (1967: 297) is often regarded as the most popular method to calculate the real net resource contribution of agriculture:

$$r = \frac{X_a}{P_{ad}} - \frac{M_a}{P_{nd}} = \frac{X_a - M_a}{P_{ad}} + TT \text{ in the export-excess case} \quad (IV.8)$$

$$\text{or} = \frac{X_a - M_a}{P_{nd}} + TT \text{ in the import-excess case} \quad (IV.9)$$

where r is the real net resource contribution of agriculture.

P_{ad} and P_{nd} are domestic prices of agricultural and non-agricultural products in the base-year, respectively.

TT is the extraction of agricultural surplus through the terms of trade, calculated as follow:

$$TT = \frac{M_a}{P_{nd}} \times \left(\frac{P_{nd}}{P_{ad}} - 1 \right) \text{ in the export-excess case} \quad (IV.10)$$

$$\text{or} = \frac{X_a}{P_{ad}} \times \left(1 - \frac{P_{ad}}{P_{nd}} \right) \text{ in the import-excess case} \quad (\text{IV.11})$$

Morrisson and Thorbecke (1990) reconsider the conventional concept of net resource contribution of agriculture. They claim that resources should include both goods and services. Then net resource contribution of agricultural sector should be both the transfers of surplus of goods and services⁴. It means that net resource contribution of agriculture should include both $(X_a - M_a)$ and $(F_a - Y_a)$, and can be calculated at the supposed shadow prices as follows:

$$R' = (X_a - M_a) + (F_a - Y_a) \quad (\text{IV.12})$$

$$= (K_{ga} - K_{ag}) + (K_{na} - K_{an}) + (T_{ga} - T_{ag}) + (T_{na} - T_{an}) \quad (\text{IV.13})$$

Theoretically, the difference between R and R' is originated, primarily, from different perspectives on resource contribution. It is suggested that the latter definition of net resource contribution is more convincing as it includes both goods and services as resources.

However, the use of the conventional concept is more relevant for three reasons. First, there is a perception that services in the intersectoral transfer process are negligible (Sheng 1992: 9).

Second, different interests in the studies of the ISRFs generate different ways of demarcating the sectors and of analysing the concepts of agricultural surplus. In fact, the conventional concept demarcates sector division by differentiating agricultural and non-agricultural activities. This focuses on whether agricultural production, as an activity, can generate a surplus for industrialization and/or imposes constraints, and, if so, what kind of constraints, on industrial growth. The latter question is discussed in Chapter V, where the agriculture/non-agriculture distinction will be reinforced with the topic of agricultural marketed surplus as the major binding constraint on industrial growth. This requires the investigation of the productive base of activities located in the sector. The more recent perception of sector demarcation, however, emphasizes the differentiation between institutions (for example: farm/non-farm households), and the investigation of the contributions of different institutions and the

factors of production to economic growth and industrialization (Karshenas 1995: 37).

Third, the new concept of net resource contribution, as suggested by Morrisson and Thorbecke (1990), does not take into account the effect of terms of trade. Even with the attempt to include this effect into the new concept (Winters *et al.* 1998), it is very difficult to have enough data to estimate it. The point is that with the conventional concept of net resource contribution, it is only necessary to collect data on changes in prices of agricultural and non-agricultural goods, in order to estimate the terms of trade effect. In the new analysis, it is necessary to figure the relative prices between agricultural and non-agricultural sectors in all the commodity, labor, and capital markets, which are almost impossible over a long span of time.

Although the present study does not consider services to be unimportant, it selects to use the conventional concept for the two latter reasons. First, it is not feasible to collect all data on the changes in prices in commodity, labor and capital markets for as long as 25 years under the Vietnam's constraining statistical system⁵. Focus is concentrated on the changes in prices of agricultural and non-agricultural goods. Second, the study tries to investigate whether the agricultural sector, composed of activities, can contribute resources for industrialization in Vietnam. In other words, the question arises as to whether the peasant can be squeezed for industrialization if they do agricultural (or farming) activities only.

However, one should consider three major shortcomings in using the conventional concept of net resource contribution. First, it is a static concept that cannot cover the dynamic processes of structural change alongside industrialization. For instance, it cannot consider the contributions of the agricultural sector in terms of agricultural surplus labor, alongside food to feed them, transferred for use in the industrial sector as in the Lewis model (Morrisson and Thorbecke 1990: 1089). In addition, it cannot cover all the primitive accumulation processes under the socialist system as they are concerned with the transfer of assets, goods, and services from non-socialist to socialist modes of production. Such processes involve the transfer of commodities, labor, and capital both within the sector, and among the sectors (Saith 1985: 23-8). These shortcomings can be overcome with a thorough investigation of the agricul-

tural surplus within a specific context of constraints imposed on economic growth, development strategies, and institutions.

Second, in his comments on Ishikawa's paper 'Patterns and Processes of Intersectoral Resource Flows: Comparison of Cases in Asia', Myint (1988: 332-6) suggests that the result of ISRFs can only serve for *ex-post* analysis, while an *ex ante* analysis is necessary in a policy discussion. Given statistical estimate of ISRFs, therefore, it is necessary to 'introduce a post-mortem appraisal of how far the policies pursued by the governments in the different cases have affected the productivity of the resources allocated through the intersectoral resource flows'. To deal with this analytical problem, the present study will consider the impacts of State policies, with regard to the intersectoral resource flows, on agricultural productivity over specific institutional framework, on the reaction of agricultural institutions to State intervention as well as the net impacts on the direction and magnitude of ISRFs.

Finally, the use of base-year prices to estimate the appropriation of agricultural surplus through unequal exchange can only adjust for the changes in the terms of trade since the previous benchmark year. It does not rule out the possibility that even in the base-year the price ratios could be biased (Saith 1985). To overcome this shortcoming, the following paragraphs will describe the method of using international terms of trade as an alternative benchmark to estimate surplus extraction through unequal exchange.

Denote T^*T as the value of this appropriation of agricultural surplus through the terms of trade.

P_{aw} and P_{nw} are prices of agricultural and non-agricultural products in the world market, respectively

The terms of trade for agricultural products in the world market are $T_w = \frac{P_{aw}}{P_{nw}}$

The terms of trade for agricultural products in the domestic market is $T_d = \frac{P_{ad}}{P_{nd}}$

Assume that x units of agricultural products can be exchanged for m units of non-agricultural products in the world market, we have:

$$P_{aw} \cdot x = P_{nw} \cdot m \quad (IV.14)$$

Lower terms of trade for agriculture in the domestic market, compared to those in the world market, come from: i/ setting lower relative prices of agricultural products, and ii/ higher agricultural marketing margin of domestic firms, compared to that of international firms.

For the first reason, $b \cdot x$ units of agricultural products ($b > 1$) can be exchanged for m units of non-agricultural products in the domestic market, i.e., $P_{ad} \cdot (b \cdot x) = P_{nd} \cdot m$. For the second reason, more a ($a > 0$) percentage of x units of agricultural products can be exchanged for m units of non-agricultural products in the domestic market. As a result, $(a + b) \cdot x$ units of agricultural products can be exchanged for only m units of non-agricultural products in the domestic market. Therefore:

$$P_{ad} \cdot (a + b) \cdot x = P_{nd} \cdot m \quad (IV.15)$$

Compared to international terms of trade, for each unit of agricultural marketed surplus, agricultural sector loses $(a + b - 1)$ unit. Assume that agriculture offers only x units for sale to non-agriculture at domestic terms of trade, the value of agricultural marketed surplus is still X_a (equals to $P_{ad} \cdot x$), which is the same as the conventional concept of X_a in equations (IV.4) and (IV.7). Therefore, appropriation of domestic agriculture based on domestic/international gap of terms of trade is valued at domestic prices as:

$$TT^* = (a + b - 1) \cdot P_{ad} \cdot x = (a + b - 1) \cdot X_a \quad (IV.16)$$

$$\text{From (IV.15): } b = \frac{P_{nd}}{P_{ad}} \times \frac{m}{x} - a = \frac{1}{T_d} \times \frac{m}{x} - a \quad (IV.17)$$

$$\text{From (IV.14): } x = \frac{P_{nw}}{P_{aw}} \times m = \frac{m}{T_w} \quad (IV.18)$$

Substituting (IV.18) for (IV.17):

$$b = \frac{T_w}{T_d} - a \quad (\text{IV.19})$$

Substituting (IV.19) for (IV.16):

$$TT^* = \left(\frac{T_w}{T_d} - 1 \right) \times X_a \quad (\text{IV.20})$$

And the real agricultural surplus is estimated as the followings:

$$r^* = R + TT^* \quad (\text{IV.21})$$

$$= X_a - M_a + TT^* = F_a - (C_{aa} + C_{an}) - (I_{aa} + I_{na}) + TT^* \quad (\text{IV.22})$$

$$= (F_a - Y_a) + (K_{ga} - K_{ag}) + (K_{na} - K_{an}) + (T_{ga} - T_{ag}) + (T_{na} - T_{an}) + TT^* \quad (\text{IV.23})$$

In addition, there are other notions of agricultural surplus, reviewed in Karshenas (1995: 36-8):

$$\text{Net agricultural surplus: } NS_a = F_a - (C_{aa} + C_{an}) = (X_a - M_a) + (I_{aa} + I_{na}) \quad (\text{IV.24})$$

The difference between this notion of agricultural surplus and the net finance contribution of agriculture is total investment in agriculture. Net agricultural surplus is a useful notion, as it refers to resources made available by the agricultural sector for investment within the sector itself and utilization in other sectors, including exports.

Saving surplus:

$$\begin{aligned} AS &= X_a - M_a - [(F_a - Y_a) + (T_{ga} - T_{ag}) + (T_{na} - T_{an})] \\ &= Y_a + (T_{ag} - T_{ga}) + (T_{an} - T_{na}) - (C_{aa} + C_{an}) - (I_{aa} + I_{na}) \\ &= (K_{ga} - K_{ag}) + (K_{na} - K_{an}) \end{aligned} \quad (\text{IV.25})$$

The saving surplus of agriculture is defined as the net financial contribution of agriculture plus the inflow of net factor income and current transfers into the agricultural sector. It is not more than a measure of net capital transfers to the other sectors of the economy. This measure is sometimes interpreted as the net contribution of the agricultural sector to investment in other sectors of the economy.

4.2. Analytical Framework for ISRFs in Vietnam

Recall equations (IV.4) and (IV.7) for the ISRFs on both the commodity and financial sides, respectively, at current prices:

$$\begin{aligned} R &= X_a - M_a = F_a - (C_{aa} + C_{na}) - (I_{aa} + I_{na}) \\ &= (F_a - Y_a) + (K_{ga} - K_{ag}) + (K_{na} - K_{an}) + (T_{ga} - T_{ag}) + (T_{na} - T_{an}) \end{aligned}$$

Assuming no changes in relative prices between sectors, to have positive net outflows of resources from agriculture, it is necessary to meet three conditions. First, some agricultural marketed surplus (X_a) must be generated. Using the accounting identity on column 1 and row 1 in Table IV.A.2 again, we have:

$$\begin{aligned} X_a &= A_{an} + C_{ag} + C_{an} + I_{ag} + I_{an} \\ &= Q_a - (A_{aa} + C_{aa} + I_{aa}) = A_{na} + F_a - (C_{aa} + I_{aa}) \end{aligned} \quad (IV.26)$$

It means that to have the positive net outflows of resources from agriculture, the gap between agricultural output (Q_a) and self-consumption of food and intermediate and capital goods within agricultural sectors (C_{aa} , A_{aa} and I_{aa} respectively) should be significantly higher or the value-added of the agricultural sector (F_a) should be significantly higher than its self-expenditure on agricultural consumption and investment goods with given inflows of intermediate inputs from non-agriculture (A_{na}). As C_{aa} is the main component in self-consumption of agricultural sector, the maximization of those gaps depends on the maximization of agricultural output and the minimization of food consumption within the sector.

Second, the net surplus of agricultural sector $[F_a - (C_{aa} + C_{na})]$ should be positive, meaning that agricultural value-added must be higher than consumption of agricultural institutions. This net surplus is closely and positively related to agricultural saving. Recall equations (IV.5) and (IV.24), and using the accounting identities of row 3 and column 3 from Table IV.A.2, we have:

$$NS_a = F_a - (C_{aa} + C_{na}) = Y_a + (F_{ga} + F_{na} - F_{an}) - (C_{aa} + C_{na}) \quad (IV.27)$$

And from equation (IV.5), we also know that:

$$S_a = Y_a + (T_{ag} - T_{ga}) + (T_{an} - T_{na}) - (C_{aa} + C_{na}) \quad (IV.28)$$

The first three items on the right-hand side of equation (IV.28) sum to the disposable income of agricultural institutions. Therefore, agricultural saving equals the difference between disposable income and consumption of agricultural institutions. With given net outflows of factor payment and current transfers, the net surplus of agricultural sector is closely related to the saving of the agricultural institutions. In conjunction with the given marketed surplus, agricultural saving will be higher if spending on non-agricultural consumption goods is decreased.

Third, agricultural saving should be higher than investments in the sector, or the saving surplus of the sector should be positive. Just recall equation (IV.26) and combine it with equation (IV.28), we have:

$$\begin{aligned} AS &= Y_a + (T_{ag} - T_{ga}) + (T_{an} - T_{na}) - (C_{aa} + C_{na}) - (I_{aa} + I_{na}) \\ &= S_a - (I_{aa} + I_{na}) = (K_{ga} - K_{ag}) + (K_{na} - K_{an}) \end{aligned} \quad (IV.29)$$

The third condition is not as decisive as the two former conditions as the agricultural saving surplus may be negative (or there are net inflows to agriculture on capital account) but net finance contribution of agriculture is still positive in many cases. For instance, if disposable income is too low, not because of low agricultural value-added (F_a), but because of the high extraction from resources from agriculture through land rent (F_{ga}) and taxes (T_{ga}), agricultural saving may be very low compared to the

investments in the sector but there is still a net resource outflow from agriculture.

Now release the assumption of constant terms of trade between agriculture and non-agriculture, the second and third conditions are not as important as earlier. The net agricultural surplus and the agricultural saving surplus may be negative, but the net resource outflow from agriculture is still positive if agriculture is highly squeezed through price mechanism. Nevertheless, the first condition still holds, i.e., agricultural marketed surplus should be positively higher in every case for the significant net resource contribution to other sectors.

Bearing this framework in mind, this section will consider the determinants of agricultural marketed surplus in the first stage. Then the net resource contribution from agriculture can rely on the terms of trade mechanism, given agricultural marketed surplus. This will be considered in the second stage. Other channels for resource transfers from agriculture as factor payments and current and capital accounts will be discussed later on.

4.2.1. Agricultural marketed surplus

The generation of agricultural marketed surplus is related to two processes: to maximize agricultural marketable surplus and then to actualize this potential surplus. Using equation (IV.26) again, the agricultural marketable surplus can be recorded as:

$$X_a = Q_a - (A_{aa} + C_{aa} + I_{aa})$$

The agricultural marketable surplus will be higher if agricultural production rises above subsistence level. It means that at least total agricultural output should be increasingly higher than self-consumption of the sector (C_{aa}). Assuming no change in self-consumption of intermediate inputs (A_{aa}) and investment goods (I_{aa}) within agriculture and insignificant supply of agricultural capital goods for industry (I_{an}), the increasing gap between Q_a and C_{aa} will raise the growth of agricultural marketable surplus in terms of intermediate inputs (A_{an}) and wage goods (C_{an}) for the industrial sector.

At the static level, the gap between Q_a and C_{aa} depends on agricultural labor productivity that is, in turn, influenced by land availability and ab-

sorption of agricultural labor to the industrial sector. First, agricultural production with high population pressure on land is not expected to generate high labor productivity, hence high marketed surplus. Therefore, agricultural marketed surplus is supposed to be positively related to the pace of land expansion and negatively to the growth of agricultural population. Second, the growth of agricultural population, however, is also strongly influenced by the labor absorption to the industrial sector that both depends on the growth of the industrial sector itself and the pattern of industrial growth. A labor-intensive industrial growth is more helpful for agricultural labor productivity as it reduces population pressure on land that, in turn, may foster the process of growth and commercialization in agriculture. Third, a free labor market is also important to reduce transaction costs for migration from rural to urban areas.

As Vietnam is a densely populated country, agricultural labor productivity and marketed surplus therefore depends strongly on the absorption of surplus labor from agriculture to industry. The changing patterns of industrial development, although still considered modest, from heavy and import-substitution industries in the pre-reform period to a more export-oriented and labor-intensive industries in the post-reform period, had important implications for agricultural labor productivity and marketed surplus. In addition, it is expected that rural-urban migration be fostered in the post-reform period as the resident registration system was lessened. Nevertheless, labor transfers are only meaningful for both agricultural marketed surplus and its net resource contribution if agricultural growth is maintained. Otherwise, terms of trade would favor the agricultural sector and lead to stagnation in agriculture and non-agriculture and stunt the process of labor transfers from agriculture to industry.

At any given level of agricultural labor productivity, marketed surplus from the sector also depends on the forms and effectiveness of agricultural trading systems. In the pre-reform period, agricultural marketed surplus existed in the forms of in-kind delivery of State farms, in-kind tax payment by agricultural cooperatives, State procurement through the cooperatives, and sales in the free market. The first three items were transferred through State trading agencies. In principle, all State farm output had to be delivered to State trading agencies. Thus, it was expected that the development of State farms would contribute positively to agricultural marketed surplus. Often, State farms specialized on indus-

trial crops and the output was used as intermediate inputs for industrial enterprises or for exports. Therefore, the development of State farms played an important role in utilizing the existing capacity of the industrial sector and easing foreign exchange constraints. A high tax rate on agriculture was also expected to increase direct transfers of marketed surplus from agriculture. The balance of sales to State trading agencies and sales in the free market was strongly dependent on the terms of trade offered to agricultural sector in each kind of market.

In the post-reform period, prices and markets were liberalized. State farms were substantially removed and land was relocated to peasant households. Similarly, peasant households also replaced agricultural co-operatives. The State procurement system in agriculture was dismantled and peasant households were free to buy and sell in the unified free markets. Therefore, the delivery of State farms was no longer significant for agricultural marketed surplus. Instead, it depended on the development of commercial farms cultivating on land of the previous State farms. As in-kind tax payment was also abolished, a high rate of in-cash taxation on agriculture did not necessarily mean a high agricultural marketed surplus because peasant households may have taken additional income from sources other than from the sale of agricultural goods, to pay the agricultural tax in cash. Finally, market liberalization also meant that the sale of agricultural goods was strongly dependent on the terms of trade between agriculture and non-agriculture that will be discussed later on.

At the dynamic level, agricultural labor productivity and marketable surplus is highly influenced by growth of agricultural output. This, in turn, is positively related to the volume and efficiency of investments in agriculture. On the other hand, agricultural investments represent resource inflows to agriculture; hence its net impact on the ISRFs is affected by the productivity of intermediate inputs and capital goods used in agriculture. Therefore, it is necessary to build up a growth accounting framework for agricultural production to separate the impact of total factor productivity (TFP) and factor inputs on agricultural output. It is expected that the higher the TFP, the higher the value of agricultural output and marketed surplus, given the certain amount of M_a .

The TFP, in turn, depends on the choice of investment, technological progress, and institutional and organization factors of agricultural production. The last factor is important for the utilization of investments

and the application and diffusion of new technologies in agricultural production. In addition, organizational innovation can help to increase on-farm production components of agricultural investment (I_{aa}) and consumption (C_{aa}), by the more effective utilization of surplus labor and other internal resources of the agricultural sector. The utilization of I_{aa} and C_{aa} , in turn, has a positive impact on agricultural marketed surplus, given the level of agricultural output. The changes from collective systems to household systems between the pre- and post-reform periods had important implication on TFP.

For instance, in the pre-reform period most of on-farm investment activities as well as the application of new technologies were undertaken by the cooperatives. The cooperatives, in addition, played important roles in internal capital accumulation within agriculture by mobilizing agricultural labor for rural infrastructure investment. In the post-reform period, the households played dominant roles in on-farm investments and in the application of new technologies since the old cooperatives were dismantled. Hence, mobilization of agricultural surplus labor for internal accumulation was seriously reduced. The net result depends on the extent to which peasant households could replace the former cooperatives in terms of investment and internal accumulation, as well as on changes on the quality of agricultural investment after the 1989 reform.

The choice of investment and technological progress are interrelated, and they together have important effect on the growth of agricultural output. In a land-scarce agriculture like Vietnam, growth of agricultural output is enhanced by the development of biological technology such as new high yield varieties of seeds, biochemical nutrients and pesticides, and fixed investments in land improvement and irrigation systems. In addition, it also requires the development of complementary and supporting activities for the efficient use of new biological technologies, and these, in turn, need investments in the research and development necessary for the adaptation and efficient use of the new technology and in the creation of new institutions to provide technical inputs and services to agricultural producers.

Yet, the choice of agricultural investment is highly dependent on policy intervention and the characters of agricultural institutions. Rearranging equation (IV.29), we have:

$$(I_{aa} + I_{na}) = S_a + (K_{ag} - K_{ga}) + (K_{an} - K_{na}) \quad (IV.30)$$

As shown in equation (IV.30), agricultural investments can be financed by capital transfers from the State, the banking system, and self-saving of agricultural institutions. In the pre-reform period, the State played the dominant role in allocating resources among sectors. Within its limited resources, the State could reduce investments in agriculture to some extent. Facing shortages of agricultural supplies, the State concentrated most of its investments in agriculture on State farms, which were expected to maximize the potential surplus for the State in return. This potential surplus was also expected to be maximized by using capital-intensive technologies in the form of mechanization, as labor remuneration would be minimized to its possible extent in this case. In addition, State investment in irrigation system was considered to be important in land-scarce and highly seasonal agriculture. Investments within the co-operatives were mainly self-financed by the saving of the cooperatives and, in part, by short-term credit from the banking system.

In the post-reform period, the role of the State to finance agricultural investments was decreasing, and being replaced by private investments. State investments were confined to irrigation system only. The development of private commercial farms replacing the previous State farms was helpful for both agricultural growth and marketed surplus. Expansion of those farms was fostered by the development of rural financial institutions. More developed rural financial institutions were expected to mobilize further rural saving and then to finance those farms with long-term credit. Otherwise, agricultural investment, which was fragmentally self-financed or financed on short-term basis, was not expected to generate much growth and marketed surplus. Nevertheless, it is important to note that financing rural development was highly dependent on the size of internal agricultural saving as private capital transfers between agriculture and non-agriculture were still very limited. With given output and income in agriculture, the size of agricultural saving was positively related to the level of consumption depression within agriculture.

4.2.2. Extraction through terms of trade

With given agricultural labor productivity and marketed surplus, terms of trade play an important role in controlling agricultural consumption, saving, and its net resource contribution to other sectors. Lowering agricultural terms of trade is expected to reduce agricultural consumption to subsistence level, hence increasing its potential saving and net financial contribution to the other sector. On the other hand, the low terms of trade, however, may have a negative effect on agricultural marketed surplus at a given level of agricultural output. The net impact depends on the dynamics of technological innovation and on agricultural growth. Low agricultural terms of trade may still lead to the increase in agricultural marketed surplus, saving, and net resource contribution if agricultural income increases and terms of trade remain high. In the pre-reform period, setting low prices of agricultural goods, particularly of food, was considered to be important in enhancing the profitability and contribution of SOEs to the State budget. This would reduce the share of labor in total SOE's value-added. This intention was based on the monopoly of State procurement and on the collective system in agriculture.

Nevertheless, the State needed to consider three points. First, low terms of trade for agriculture would discourage the sale of agricultural goods to State trading agencies. Before Contract 100, cooperatives were obliged to deliver to State trading agencies a fixed proportion of agricultural output under the batter terms of trade that were often set very low compared to those in the free markets. Therefore, it may have encouraged cooperative cadres to falsify output record or to look for other marketing channels more beneficial to them. Also, peasant households preferred to market the output from 5 percent land in the free markets that offered them higher terms of trade. Under the Contract 100, delivery under contract quota was transferred to the State trading agencies through the cooperatives at low fixed terms of trade. In addition, the State trading agencies encouraged the sale of agricultural products by offering higher terms of trade for the sale of surplus output over the contract quota⁶. Even those terms of trade, however, were often lower than those in the free markets and, hence, created incentives for peasant households to sell their surplus output in the free markets.

Second, a result of the previous point was that the increasing sale of agricultural goods in the free market might have led to higher terms of trade for agriculture in general.

Third, as it faced shortages of food in maintaining its rationing system in the urban sector, the State could have raised the agricultural terms of trade to encourage the sale of agricultural goods through State channels, as what had been done during the 1981 price reforms. Nevertheless, the net results were also dependent on the effectiveness of the State's trading system suggested earlier.

In the post-reform period, price and market liberalization was expected to improve agricultural terms of trade. External trade liberalization was also expected to raise the relative prices of agricultural goods in the domestic market since it was often assumed that prices of agricultural prices were depressed in the domestic market. Particularly, the devaluation of the exchange rate was considered to have had a positive impact on agricultural prices because the sector accounted for a significant share of total exports. As a result, the higher terms of trade may have stimulated agricultural growth and the increased supply of agricultural goods to the rest of the economy.

At the dynamic level, the availability of agricultural marketed surplus may have reduced the agricultural terms of trade later on, and enhanced the financial contribution of agriculture. The availability of agricultural goods and the low prices of wage goods, as a result of agricultural growth, were considered important for the internal accumulation of profits from industrial enterprises. In addition, the State monopoly over agricultural exports may have generated significant rent for State trading agencies as a result of the price gap between the international and domestic markets.

Nevertheless, the 1989 reform may also have generated negative impacts on the agricultural marketed surplus and its financial contribution to the rest of the economy. First, the abolition of the State procurement system in agriculture may have reduced the amount of agricultural marketed surplus if private marketing units could not fill the vacuum left by State trading agencies and if subsistence farming were the dominant pattern in agriculture.

Second, the increase in agricultural income, as a result of higher agricultural terms of trade plus the growth of non-agricultural income after

the 1989 reform, may have encouraged peasant households to raise their consumption of non-agricultural goods. As a result, agricultural saving were reduced, which would have negative effects both on the dynamic growth of agriculture due to decreasing available resources for agricultural investment, and on its financial contribution to the rest of the economy.

4.2.3. Net agricultural surplus and agricultural saving

Given the agricultural marketed surplus and terms of trade, net resource contribution of agriculture, as suggested earlier, would be higher if its saving and net surplus were higher. At a given level of agricultural value-added, the maximization of agricultural saving and its net surplus depends on the level of consumption depression in agriculture. As food consumption within agriculture has been discussed somewhat earlier, here the concentration will be given to the purchases of non-agricultural consumption goods by agricultural institutions.

Given agricultural terms of trade, agricultural consumption depends on the disposable income of the sector. The disposable income of agriculture is not equivalent to the value-added of the sector. This diversion is caused by the transfer of factor payments and funds for current consumption between sectors. As current transfers between private agricultural and non-agricultural sectors are considered to be insignificant or are accounted in the estimate of factor payment transfers⁷, the discussion puts more emphasis on factor payment transfers and current account transfers between the State and agriculture. In addition, the two latter accounts are more important for policy intervention.

Factor payment transfers from agriculture include delivery of State farms and interest payments made by agriculture to the banking sector. Current transfers from agriculture to the State are agricultural taxes. In return, factor payment transfers to agriculture consist of non-agricultural income of agricultural households and interest payments on banking deposits held by the agricultural sector. Current transfers from the State to agriculture are the current expenditures by the State on agriculture reported in the State budget.

In the pre-reform period, the high shares of State farms and the high tax rates on agriculture, as suggested earlier, led not only to reduce self-consumption of agricultural goods and to increase agricultural marketed

surplus but also depress consumption of non-agricultural goods within the sector by reducing agricultural disposable income. Concerning resource inflows to agriculture, factor payments to agriculture were not likely to be important in the pre-reform period because rural non-farm activities were very depressed and were controlled by the State. State current transfers to agriculture were disbursed through the cooperatives, which also had their own funds for social spending from the contribution of cooperative members. In fact, available evidence shows that most of the social expenditure on education and health within the cooperatives came from their own funds, which were very important to ease the burden on State expenditures in rural areas where most poor people lived. Nevertheless, more cooperative funds for social expenditures meant that there were less tax contributions to the State from the agricultural sector.

The consumption of cooperative members was financed by their income from the cooperatives and income from their household activities, particularly on 5 percent land. The agricultural saving would be higher if the cooperatives would have reduced shares of households in the total income of the cooperatives. In addition, the depression of the household economy was also expected to reduce consumption within agriculture as it would mobilize resources for the development of the collective sector, whose surplus could be controlled easier. Nevertheless, in the long term the generation of agricultural saving was successfully achieved if agricultural growth was sustained. Therefore, consumption depression in agriculture was only meaningful as long as it did not stunt the growth of agricultural labor productivity.

In the post-reform period, contributions of State farms became less important. In-kind taxes on agriculture were also abolished. Therefore, the inflows through private factor payments and State current accounts had an important impact on non-agricultural consumption of agriculture. The de-collectivization forced the State to spend more on social expenditure in agriculture. More importantly, the development of non-agricultural activities in rural sector as a result of the 1989 reform may have generated much higher non-agricultural income for agricultural households, and, hence leading to a consumption boom of non-agricultural goods in rural sector.

Nevertheless, the net impact of this factor payment inflow on agricultural saving depends on three factors. First, it is expected that the 1989 reform led to higher differentiation among agricultural households, hence generating higher saving as majority of income growth was concentrated in the upper group of income distribution.

Second, saving from non-agricultural incomes may have affected growth of agricultural labor productivity positively if they were used for agricultural investment, and, thus, generated higher potential saving from the sector. To materialize this possibility, incentives to invest in agriculture should have been enhanced.

Third, the consumption boom in agriculture could only have been maintained if agricultural growth were sustained. Otherwise, it would lead to higher terms of trade for agriculture, and put financial burdens on the non-agricultural sector.

4.2.4. Saving surplus

Agricultural saving may be used for investments in agriculture or it may be held in cash, deposits on financial institutions, loans to the non-agricultural institutions, or in non-productive assets, such as gold and real estate. Given the potential saving of agricultural institutions, the actual amount of money to be saved was dependent on the development of rural financial institutions and incentives to make investments.

In the pre-reform period, most of the purchases of non-agricultural capital goods were financed by the State (K_{ag}) and the self-investment of agriculture (I_{aa}) mainly came from the cooperative funds. Saving of agricultural households was not expected for three reasons.

First, private investments were discouraged under the centrally planned system.

Second, rural financial institutions were underdeveloped and their main functions were to allocate credit from the State to cooperatives. Particularly, low nominal interest rates under high inflation did not make incentives to put deposits in banks.

Third, as a result of the last point, saving of agricultural households existed mainly in the forms of money holdings, and in other non-productive assets such as in goods speculation or gold. Under high inflation, it was expected that agricultural households would have preferred the speculation of goods and gold. The choice between consumption

and speculation of agricultural or non-agricultural goods was dependent on the availability of non-agricultural goods in the exchange with agricultural households. Often, supply shortages of non-agricultural consumption goods due to the neglect of light industries limited the amount of agricultural goods in the exchange with the non-agricultural sector. A possible result was restrained agricultural saving and preference of agricultural households for self-consumption and speculation of agricultural goods.

In the post-reform period, most agricultural saving was generated by agricultural households. I_{aa} was reduced considerably after the dismantling of agricultural cooperatives. Part of I_{na} was financed by the saving of agricultural households. In addition, agricultural saving could also be transferred to non-agriculture through the investments made by agricultural households in rural non-agricultural activities. The amount of this transfer was dependent on the investment choices made by agricultural households, particularly those at the upper level of income distribution, and this, in turn, was influenced by other receptive factors for investment in both agricultural and non-agricultural activities. As inflation was tamed after the 1989 reform, it was expected that both money holdings and deposits by agricultural institutions on the banking system would have increased, but the level of their growth was dependent on the level of financial development and agricultural commercialization.

4.3. Conclusions and Implications

This chapter outlines the accounting and analytical framework for the ISRFs. For the accounting framework, however, three points need to be delineated.

First, the defined demarcation between sectors needs to ensure the accounting consistency between activities and institutions. Under data limitation in Vietnam, the demarcation between agricultural and non-agricultural activities has been defined in a way in which the agricultural sector includes only farm activities on crops and husbandry. It means that rural institutions specializing in forestry, fishery, and other non-agricultural activities such as trade and handicrafts should be excluded from the agricultural sector.

Second, utilizing SAM as the accounting framework, the agricultural surplus is defined in the conventional way although it is less inclusive as other definitions because of data limitation in Vietnam. At current prices, the net resource contribution or net finance contribution of agricultural sector is equal to the difference between the sale of agricultural goods to, and the purchases of non-agricultural goods from the non-agricultural sector on the commodity side. On the financial side, it is equivalent to the net outflows from the agricultural sector on the factor payment, capital, and current accounts.

Third, real agricultural surplus should take into account the effects of changes in relative prices between sectors. The extraction of agricultural surplus through terms of trade is also defined according to the accepted conventional framework, in which the relative prices between sectors in the base-years are selected as the benchmark. Such definitions are useful for the analysis of the terms of trade mechanism over time. Nevertheless, this way of defining the effects of terms of trade is problematic if prices even in the base-years do not reflect the real opportunity costs of goods. Therefore, another alternative that should be used is the comparison between prices in the international and domestic markets, which is developed on the assumption that the supply and demand of Vietnam's goods and services do not have any significant impact on world prices as the size of the country is quite small.

The analytical framework takes into consideration four important points regarding the issues of ISRFs. First, agriculture cannot finance industrialization if agricultural marketed surplus is insignificant. The maximization of agricultural marketable surplus is related to the maximization of agricultural output and the minimization of self-consumption within the sector. At the static level, the gap between output and self-consumption of agriculture depends on agricultural labor productivity that is, in turn, influenced by land availability and the pace of labor absorption to the industrial sector. Given the level of agricultural labor productivity, the actual marketed surplus of the sector is affected by the effectiveness of the agricultural trading system. At the dynamic level, agricultural labor productivity and marketed surplus is highly correlated to the growth of agricultural output that, in turn, depends on the volume and quality of investments in agriculture. It is shown that agricultural growth will be higher, given a level of investment, if the total factor pro-

ductivity (TFP) of the sector is higher. The TFP depends on the choice of agricultural investments, technological progress, and institutional and organizational factors of agricultural production. Therefore, the growth of agricultural output, labor productivity, and marketed surplus is positively related to the volume of investment, investment choices, technological progress, and institutional and organizational factors of agricultural production.

Second, terms of trade play an important role in controlling agricultural consumption, saving, and its net resource contribution to the other sectors. Setting low terms of trade may increase potential saving and net finance contribution of the agricultural sector, but it also may discourage agricultural institutions to raise the marketed surplus of the sector. The net impact depends on the dynamics of technological innovation and agricultural growth.

Third, the net resource contribution of agriculture will be higher, given agricultural marketed surplus and terms of trade, if its saving and net surplus increases. The maximization of agricultural saving and net surplus requires the minimization of agricultural consumption, assuming that the main source to finance agricultural consumption comes from agricultural value-added. Nevertheless, agricultural consumption can be diverted from its value-added because of the net transfer of income from non-agriculture on the factor payment and current accounts. Maximizing the net outflows from agriculture through these accounts is expected to depress agricultural consumption, particularly on non-agricultural consumption goods, hence increasing agricultural saving, net surplus, and its net finance contribution to the other sectors.

Fourth, agricultural saving is either used for investment in the sector or transferred through capital accounts to the other sectors. In both cases, the existence of highly positive agricultural saving is beneficial for the net resource outflows from agriculture. Agricultural saving is, in turn, highly influenced by incentives to make investments and by the development of financial institutions.

Taking into account the specific context of Vietnam, this chapter also has outlined important factors that affect agricultural marketed surplus, terms of trade, agricultural saving, and financial transfers in the pre- and post-reform periods. Changes in these factors serve as an important ex-

planation for the changes in the direction, magnitude, and pattern of ISRFs from the pre- to post-reform period.

In relation to agricultural marketed surplus, four important changes should be taken into account. First, the labor absorption to non-agriculture that is helpful for the growth of agricultural labor productivity and marketable surplus was influenced by the change of emphasis from capital-intensive industries in the pre-reform period to labor-intensive industries in the post-reform period. In addition, the removal of the resident registration system after the 1989 reform had positive impact on rural-urban migration.

Second, the actualization of the agricultural marketable surplus in the pre-reform period was highly dependent on the development of State farms, the imposition of in-kind tax on agriculture, and the effectiveness of the State procurement system *vis-à-vis* sales in the black market. The choice of sales to State trading agencies or to the free market was affected by the terms of trade offered to agricultural institutions in each market. In the post-reform period, agricultural marketed surplus was dependent on the roles of private marketing units and on the agricultural terms of trade only, since the market was unified.

Third, at the dynamic level, agricultural growth was mainly influenced by the internal accumulation within the cooperatives and their role in technological innovation. In addition, the State played an important role for agricultural growth as well as for its marketed surplus, as it could exercise more freedom in choosing places for agricultural investment (i.e., capital-intensive or labor-intensive technologies; focus on irrigation or on State farms). In the post-reform period, private agricultural households played a dominant role in agricultural production and growth. Resources that could be mobilized for agricultural investment were affected by the levels of agricultural commercialization and financial development.

Changes from the pre- to post-reform periods had both positive and negative impacts on the amount of resources that could be extracted from agriculture through the terms of trade mechanism. Policies to set low prices for agricultural products enhanced and improved the transfer of resources from agriculture in the pre-reform period. In contrast, the extraction of agricultural resources through terms of trade in the post-reform period had to rely on the growth of agricultural marketed surplus.

The low agricultural terms of trade in the pre-reform period, however, discouraged the sales of agricultural institutions to the State trading agencies, and, instead, encouraged them to sell in the free market at higher terms of trade. In addition, shortages of agricultural goods, particularly food, may have forced the State to improve agricultural terms of trade. As a result, agricultural terms of trade would be resultantly high in general. In the post-reform period, price liberalization may have led to the higher terms of trade for agriculture that, in turn, increased the income of the sector, and led to the rising of agricultural consumption.

Agricultural saving depends on the extent to which agricultural disposable income and consumption is depressed. In the pre-reform period, the State could extract resources from agriculture through the delivery of State farms and the imposition of in-kind taxes on agriculture. In the post-reform period, such channels for extraction were insignificant as State farms were abolished and the agricultural tax rate was reduced.

In terms of resource inflows to agriculture through factor payment and current accounts in the pre-reform period, agricultural disposable income was also depressed since development of non-agricultural activities was discouraged and State current expenditure in agriculture was limited. Nevertheless, there were two sources for the expansion of agricultural disposable income and of consumption in the pre-reform period. First, the cooperatives kept a considerable amount of the contributions by its members for expenditures on social services in rural areas, meaning that tax contributions from the cooperatives to the State may have been limited. Second, the high extraction rate from the State and cooperatives encouraged agricultural households to concentrate only on 5 percent land production, the output from which was freely disposable for household consumption.

In the post-reform period, more resources were expected to be transferred to agriculture through factor payments and current accounts. The State paid more for social services in agriculture after the collapse of the collective system. More importantly, the market liberalization may have encouraged agricultural households to participate into non-agricultural activities that generated inflows to agriculture through factor payment accounts. Increasing income levels could have led to a consumption boom, hence, reducing agricultural saving, given the level of agricultural growth and terms of trade. Nevertheless, agricultural saving still could be

maintained at a high level even with high rates of income transfers if enough incentives to make investments in agriculture existed and the agricultural sector was commercialized with a certain level of income differentiation.

The resource transfers from agriculture through capital accounts were not largely expected in the pre-reform period, since agricultural disposable income was depressed by the State's extraction of terms of trade, factor payments, and current accounts. Potential saving were not expected to actualize as private investments were discouraged, financial systems were underdeveloped, and high inflation encouraged households to hold assets in terms of agricultural goods, instead of in money or in bank accounts.

In the post-reform period, both agricultural saving and possible capital transfers to the other sectors were expected to be heightened since private investments were encouraged and rural financial institutions emerged and developed gradually. In addition, low inflation and agricultural commercialization aided the development of a monetized and financialized rural economy.

In sum, the tentative investigation of the institutional context of the ISRFs suggests that the agricultural sector may have been drained in the pre-reform period by low terms of trade and transfers of factor payments and current accounts. In contrast, such pressure was lessened in the post-reform period. The possible resource transfers from agriculture may have existed in terms of money holdings and deposits in the banking system.

Nevertheless, the net impact of the 1989 reform on ISRFs is highly dependent on the momentum of agricultural growth generated by the reform itself. In the long-run, the net resource contribution of agriculture is only sustained at a high level if agricultural growth is high and agricultural marketed surplus is significant. In addition, this type of analytical framework allows for reflection from the perspective of the agricultural sector only. It neither takes into account the macroeconomic mechanisms of resource mobilization and the allocation in the economy as a whole, nor the characters of non-agricultural growth and its main constraints imposed by agriculture. This framework for analysis prompts insights on ISRFs and good assessments on the optimal patterns of

ISRFs if such macro mechanisms and constraints are realized. This will be discussed further in the next chapter.

Appendix of Chapter 4

Introduction to SAM accounting framework

This Appendix is mostly extracted from Karshenas (1995), who suggests that the estimate of ISRFS can be simplified by using the framework of social accounting matrix (SAM). The Appendix aims to show how to integrate the estimate of ISRFS into a systematic framework of SAM. Table IV.A.1 shows a consolidated SAM in which each entry represents a matrix, with the definitions given below the table.

Table IV.A.1.
A Schematic Representation of SAM

	Activities	Factors	Institutions (current ac- count)	Institutions (capital ac- count)
Activities	A		C	I
Factors	F			
Institutions (current account)		Y	T	
Institutions (capital account)			S	K

A = matrix of intermediate demands of activities

C = consumption, i.e. current expenditure by institutions on output of activities

I = investment, i.e. capital expenditure by institutions on output of activities, including stock-building

F = factor income payments made by activities

Y = distribution of total factor income among institutions

T = current transfers between institutions including direct and indirect taxes levied on institutions

S = saving of institutions

K = capital transfers between institutions

Source: Extracted from Karshenas (1995: 27)

As usual, columns represent expenditures or monetary outgoings and rows show receipts or monetary incomings. Sectors or activities produce goods and services by using intermediate products (A) and factor services (F) provided by institutions. Factors incomes received by institu-

tions (Y) are spent on current consumption (C), invested in physical assets (I), or saved (S). The table also shows current transfers between institutions (T), e.g. government taxes and subsidies, migrant workers' remittances, etc., and capital transfers (K), e.g. changes in the financial assets of institutions. Accounting consistency requires that the sum of the value in each row should equal the sum of the values in the corresponding column. The usual 'rest of the world' account is excluded as it does not help the exposition of different definitions of agricultural surplus discussed in the literature, and it unnecessarily prolongs the formulations.

In order to discuss the issue of the ISRFS, a more dis-aggregated SAM is needed, which provides an explicit representation of the sectors and institutions of interests. Such a version of SAM, with minimum adequate entries to represent the ISRFS between agriculture and the rest of the economy, is shown in Table IV.2. The table distinguishes between two activities or sectors (agriculture and non-agriculture) and 3 institutions (agriculture, government, and non-agriculture)⁸. The first subscript shows the destination of money incomings, the second represents the departure of money outgoings.

Hereafter are the meaning of each row and column corresponding to conventional SAM:

Row 1: Agriculture as a production activity receives money from sale of its products as intermediate goods to itself (A_{aa}) and to other sectors (A_{an}), and as consumption goods (C_{aa} , C_{ag} , and C_{an}), and investment goods (I_{aa} , I_{ag} , and I_{an}) to institutions. The sum of these proceeds constitutes the gross output or gross sales of agricultural sector.

Column 1: The proceeds from gross sales of the agricultural sector is partly spent on purchases of intermediate products from itself (A_{aa}) and from the non-agricultural sector (A_{na}), and the remaining part, which is value-added in the agricultural sector (F_a), is paid out to factors participating in agricultural production, including F_{aa} , F_{ga} and F_{na} .

Row 2: The gross output of the consolidated non-agricultural sector is composed of sales of intermediate products to itself (A_{nn}) and to the agricultural sector (A_{na}) plus sales of final products to institutions for consumption (C_{na} , C_{ng} , and C_{nn}) and investment (I_{na} , I_{ng} , and I_{nn}).

Column 2: The proceeds from gross sales of the non-agricultural sector is partly spent on purchasing intermediate products from itself (A_{nn})

the agricultural sector (A_{an}), and the rest, which goes to the remuneration of the factors of non-agricultural production, is the value added in the sector (F_n), consisting of F_{an} , F_{gn} and F_{nn} .

Table IV.A.2.
Social Accounting Framework for Intersectoral Resource Flows

	Activities		Factors			Institutions (current account)			Institutions (capital account)		
	Agriculture 1	Non-Ag. 2	Agriculture 3	Gov- ernment 4	Non-Ag. 5	Agri- culture 6	Gov- ernment 7	Non-Ag. 8	Agriculture 9	Gov- ernment 10	Non-Ag. 11
Activities											
1. Agriculture	A _{aa}	A _{na}				C _{aa}	C _{ag}	C _{an}	I _{aa}	I _{ag}	I _{an}
2. Non-Ag.	A _{an}	A _{nn}				C _{na}	C _{ng}	C _{nn}	I _{na}	I _{ng}	I _{nn}
Factors	F _a	F _n									
3. Agriculture	F _{aa}	F _{an}									
4. Government	F _{ga}	F _{gn}									
5. Non-Ag.	F _{na}	F _{nn}									
Institutions (current A/C)											
6. Agriculture			Y _a				T _{ag}	T _{an}			
7. Government				Y _g		T _{ga}		T _{gn}			
8. Non-Ag.					Y _n	T _{na}	T _{ng}				
Institutions (capital A/C)											
9. Agriculture						S _a				K _{ag}	K _{an}
10. Government							S _g		K _{ga}		K _{gn}
11. Non-Ag.								S _n	K _{na}	K _{ga}	

Source: Extracted from Karshenas (1995: 29)

Row 3: Agricultural institutions receive remuneration for its contribution to agricultural activities (F_{aa}) and non-agricultural activities (F_{an} , such as income from non-agricultural activities and interest payment from financial institutions).

Column 3: Agricultural institutions have the income (Y_a) paid from its contribution to factors of production in both agriculture and non-agriculture.

Row 4: The government receives the distribution of production outcome from agriculture (F_{ga} , such as delivery from State farms and indirect taxes on agricultural production) and non-agriculture (F_{gn} , such as transfer of profit and capital depreciation funds from State-owned enterprises, and indirect taxes on non-agricultural production) for its contribution to factors of production in the two sectors.

Column 4: The government has its income (Y_g) paid from factors of production.

Row 5: Non-agricultural institutions receive remuneration for its contribution to agricultural activities (F_{na} , such as land rent for absentee landlords and interest payment made by agricultural institutions to financial system or non-agricultural money lenders) and non-agricultural activities (F_{nn}).

Column 5: Non-agricultural institutions have the income (Y_n) paid from its contribution to factors of production in both agriculture and non-agriculture.

Row 6: Agricultural institutions receive primary income (Y_a) in return for the factor services that they provide, as discussed above. In addition, they receive direct transfers from the government (T_{ag}) and from the other non-governmental private institutions (T_{an}). The total of this row constitutes the personal (pre-tax) income of the agricultural sector.

Column 6: Income received by agricultural sector is either consumed (C_{aa} , C_{na}), paid out as direct taxes to the government (T_{ga}), transferred to other non-governmental institutions (T_{na}), or saved (S_a).

Row 7: Government income consists of primary income (Y_g) plus direct taxes on agricultural (T_{ga}) and non-agricultural institutions (T_{gn}).

Column 7: Government revenue is disposed of in the form of current government consumption expenditure (C_{ag} , C_{ng}), direct subsidies to the agricultural (T_{ag}) and the non-agricultural institutions (T_{ng}); the residual is saved (S_g).

Row 8: Non-agricultural institutions receive primary income in the form of rents, profits, and wages in return for their factor services (Y_n). This, together with transfers from the agricultural institutions (T_{na}) and direct subsidies from the government (T_{ng}), adds up to their total income.

Column 8: Total income of non-agricultural institutions is spent on consumption (C_{an} , C_{nn}), paid out in current transfers to the agricultural sector (T_{an}) or as direct taxes to the government (T_{gn}), with the remainder being saved (S_n).

Row 9: Agricultural institutions acquire capital funds through their own saving (S_a) and capital transfers from the government (K_{ag}) and other private financial institutions (K_{an}).

Column 9: The capital funds acquired by the agricultural institutions are invested either in the form of physical assets (I_a , I_{na}) or in acquiring financial assets from, or lending to, the government (K_{ag}) or the private non-agricultural sector (K_{na}).

Row 10: Similarly, the government acquires capital funds either through its own saving (S_g) or capital transfers from the agricultural (K_{ga}) or non-agricultural institutions (K_{gn}).

Column 10: The government's capital spending takes the form of investment in physical assets (I_{ag} , I_{ng}) or the acquisition of financial assets from (lending to) the agricultural (K_{ag}) or non-agricultural institutions (K_{ng}).

Row 11: Total capital funds at the disposal of non-agricultural institutions are composed of their own saving (S_n) plus capital funds acquired from the agricultural institutions (K_{na}) and the government (K_{ng}).

Column 11: Non-agricultural institutions dispose of their capital funds by investing in physical assets (I_{an} , I_{nn}) or by acquiring financial assets from the agricultural institutions (K_{an}) or the government (K_{gn}).

Endnotes of Chapter 4

¹ Sectoral demarcation also can be classified as farm/non-farm and rural/urban sectors. The former demarcation is quite similar to that of agricultural/non-agricultural sectors. It is very difficult to follow the rural/urban demarcation due to poor reports on rural industrial activities for the entire studied period.

² This kind of cooperatives is different from the handicraft cooperatives, which are also located in rural area for non-agricultural purposes.

³ Ranis and Fei (1964) describe 'agricultural surplus' as *'the difference between the truckloads of food and raw materials delivered to the industrial sector and the industrial sector goods sent in the opposite direction'* (quoted by Mundle 1985: 50). Ishikawa (1967: 296) specifies the terms 'agricultural surplus' or net resource contribution of agricultural sector for industrialization and makes it clear that *'the resource under question correspond to the funds for financing economic development...Essentially, the funds required for financing economic development are equivalent to the total claims for the commodities which are either investment, intermediate, or consumption goods'*. Based on this definition, he naturally considers that *'In most comprehensive scope, the resource flow is measured by the real values of commodity export and import of the farm sector and their net balance.'*

⁴ Morrisson and Thorbecke (1990: 1084-85) suggest that *'If there were two currencies, one for the agricultural sector, i.e., M1 and another one for the rest of the economy, i.e., M2, one could argue that the net physical flows of goods and factors [services]...represents a credit in M2 in favor of agricultural households. These households, in turn, could be thought to use the totality of M2 to finance net private transfers, net saving destined to the N [non-agricultural] sector, the net transfer to the State, as well as the purchase by agriculture of capital goods from the N sector, assuming there is no money hoarding. As a result, "agricultural surplus" can be defined as "the net (monetary) flow" from the A [agricultural] sector to the N sector which can be used to finance the net physical flows from A to N consisting of the net flow of food, intermediates A goods and agricultural factors to N.'*

Sheng (1992: 10-1) criticizes that *'If the balance of intersectoral trade does not include service exchange, the balance will be an incomplete estimate of NIRF [net intersectoral resource flow], according to the definition of "resources".'* The reason is that *'In an economy, services (both factor and non-factor) possess the right to claim commodities or other services which have the same values as they have. Let us assume that intersectoral service exchanges are calculated separately from commodity exchanges. When a sector has commodity export excesses and service export excesses, its service export excesses will be the same as the commodity export excesses which supply the financial funds for the other sector's import excesses through capital and unilateral [current] transfers... Assuming A [agricultural] sector has an excess of commodity imports, a part which is financed by its income from net export of services,*

we cannot claim that this part forms a part of net resource inflows since it has the right to claim that volume of commodities in exchange.'

⁵ Data limitation is discussed in Chapter 6.

⁶ This is called as sale at negotiated prices.

⁷ This will be explained in more details in Chapter 6.

⁸ For the sake of simplicity, transactions or transfers within sectors and institutions are excluded, because they do not enter into ISRFS. The rest of the world could be introduced into the table, and factors of production could be further decomposed. However, such modification would substantially increase the size of the table without adding more insight.

5 Financial Mechanism and Roles of Vietnam's Agriculture in Industrialization

Chapters 3 and 4 show that the 1989 reform had important implications for both the interaction between agriculture and industry as well as the economic performance in Vietnam. Therefore, it also generated important impacts on the mechanism of financial mobilization and relocation in Vietnam. It has been suggested earlier that the analysis on the ISRFs must be put in the specific context of a financial transfer mechanism. This would allow the analysis to deal with actual constraints imposed on industrialization. This chapter addresses this issue in order to specify more precisely the background for the determinants of ISRFs and the assessment of their impacts on macroeconomic performance in the next chapters. Section 1 is devoted to show the macroeconomic mechanism of financing industrialization in Vietnam during 1976-2000. Characters of resource mobilization and relocation, as well as involved players in such a system are specified for the pre- and post-reform periods. Section 2 makes an attempt to reconsider roles of Vietnam's agriculture in industrialization, which has been suggested by Vietnam's scholars so far. Section 3 draws conclusions and implications for the analysis on ISRFs in Chapter 7.

5.1. Financing Industrialization in Vietnam

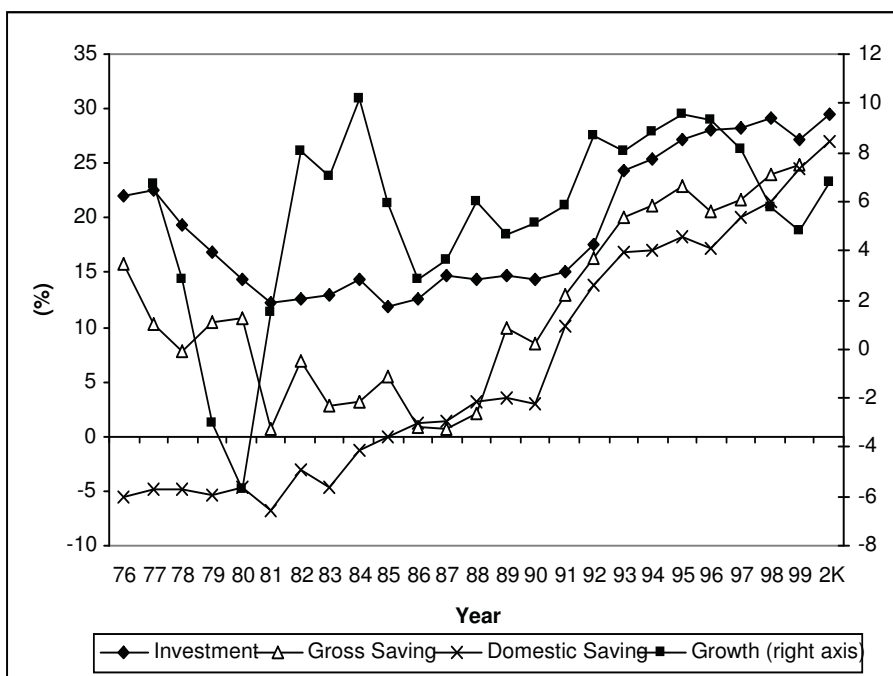
5.1.1. The pre-reform period

Looking at Figure V.1 and Table V.1, the pre-reform period witnessed relatively low investment rate of about 15 percent on annual average for the whole period. In addition, investment did not have positive impact on economic growth. Investment rate was highest at 19 percent in the period of 1976-80 when economic growth rate was the lowest. In contrast, economic growth rate was highest in the period of 1981-84 when the investment rate was lowest at 13 percent of GDP only.

Instead, economic growth was likely to depend on the efficiency of investment. Looking at the ICOR in Table V.1, high economic growth in

the period of 1981-84 was associated with the ICOR as low as 1.9. In the period of 1985-88, the ICOR increased to 2.9, though it was not relatively high. It shows the positive effect of reforms during 1979-81 that raised the efficiency of investment by utilizing the slack within the centrally planning system (Fforde and de Vylder 1996). Nevertheless, such an effect was one-off, as this was adjustment within the boundary of centrally planned. Hence, investment became less efficient since the mid-1980s when the State made efforts to re-centralize its control over the economy.

Figure V.1.
Growth, Investment and Saving, 1976-2000
(percent of GDP)



Source: Table V.A.1.

Table V.1.
Financial Mobilization and Relocation, 1976-88
 (percent of GDP)

	1976-80	1981-84	1985-88	1976-88
Consumption	105.1	104.0	98.6	102.7
Export	6.3	7.8	6.8	6.9
Import	26.4	21.9	17.1	22.1
ICOR	86.8	1.9	2.9	4.0
Investment	19.0	13.0	13.4	15.4
Budget	14.6	8.0	6.0	9.9
Non-Budget	4.4	5.0	7.3	5.5
SOEs	4.4	5.0	1.9	3.8
Domestic Private	-	-	5.4	1.7
FDI	-	-	0.1	0.0
Gross Saving	11.0	3.4	2.2	6.0
Domestic Saving	-5.1	-4.0	1.5	-2.7
Budget	-2.5	-2.1	-1.8	-2.1
Non-Budget	-2.6	-1.9	3.2	-0.6
Current Transfer	16.1	7.4	0.8	8.7
Capital Transfer	4.0	6.7	9.5	6.5

Source: Table V.A.1.

Low investment rate was partially explained by the low saving rate in the pre-reform period. For most of the period, domestic saving rate was negative. Budget saving was negative for the whole period. Non-budget saving was positive only in the 1985-88 period which could cover the negative budget saving and make the entire domestic saving become positive at very low level of 1.5 percent of GDP. The requirement of improving living standards in the post-war period made it difficult to depress consumption, as the production base was very low. For most of the pre-reform period, domestic consumption was higher than GDP, and the difference was significantly financed by foreign aid. It is worth noting that gross national saving was considerably influenced by current transfers from abroad. Gross national saving rate was highest during 1976-80 when the current transfer was also highest. Then it was declin-

ing from 1981 along with the reduction in foreign current transfer. Gross national saving rate was lowest in the 1985-88 period although domestic saving was positive for the first time in the pre-reform period as foreign current transfer decreased seriously to only 0.8 percent of GDP.

Such changes in the saving rate reflect the fact that resource mobilization and relocation in Vietnam was highly dependent on its foreign partners in the pre-reform period. The large amount of foreign current inflows in 1976-80 period resulted from the generous assistance of China, Soviet Union and Western countries to help Vietnam recover from the war. Particularly, Chinese aid played a very important role to supply a sufficient amount of consumption goods for Vietnam in the early years of the post-war period. Unfortunately, Vietnam's intervention in Cambodia and the Sino-Vietnam border conflict in the late 1970s led to the withdrawal of not only Chinese but also Western aid. As a result, Vietnam's close relation with CMEA countries, particularly with the Soviet Union became obvious in the early 1980s.

Foreign assistance from CMEA countries for Vietnam was very generous and important for the construction of Vietnam's productive base in the post-war time. For instance, around 10 percent of Soviet assistance was grant aid, 20 percent was interest-free loans and the rest was concessional with the interest rate four times lower than the one reserved for Eastern European countries (Vo, N.T. 1990: 153-5). It is reported that in 1979, the year when Chinese and Western aid stopped, Soviet projects accounted for 25 percent of electric output, 89 percent of extracted coal, 100 percent of the output of tins, sulphuric acid, apatite and super-phosphate, and 61 percent of metal-cutting machines. Soviet projects also helped Vietnam to set up specializing State-farms in industrial crops and to mechanize agriculture by providing tractors and other farming equipments. In addition, Vietnam also had a large trade deficit against the Soviet Union, which then was financed by interest-free loans from the Soviet Union. It is estimated that Vietnam imported from the Soviet Union 46.2 percent of its needs in machinery and equipment, 8.2 percent in oil products, 16.6 percent in wheat and flour and 6.4 percent in cotton fiber, etc. (Vo, N.T. 1990: 98-101).

Nevertheless, Vietnam had to follow two major principles postulated in the cooperation among CMEA countries (Fforde 1984: 34, Fforde and de Vylder 1996: 147-8, Vo, N.T 1990: 149-52). First, except for the

'honeymoon' period of 1976-80, economic cooperation was set on the basis of 'mutual advantage', in which Vietnam had to participate into the division of labor among CMEA countries by exploring its comparative advantages of mining products, industrial crops (coffee, rubber, tea and jute), and tropical fruits and vegetables. Particularly, the aim was to reduce Soviet Union's net cost of its aid commitment through debt repayment from Vietnam under barter terms of trade. Second, also in an attempt to minimize its net costs of assistance for Vietnam's economic development, the Soviet Union put increasing pressure for efficient utilization of its aid. Project assistance was gradually changed to limit further expansion of the fixed industrial stock. Instead, focus was put on infrastructure investment in sectors such as energy where rapid increase in output would not impose strain on domestic input suppliers.

In the 1976-80 period, the major part of Soviet technical and economic project assistance was scattered among basic industrial input plants (electricity, oil-storage and cement), mining (coal and tin) and housing construction. Since 1980, Soviet aid was concentrated upon a limited number of projects in fertilizer plants and metalworking, and, on a smaller scale, enterprises in the light and food industries, tea factories and agricultural projects. Similarly, import support was shifted away from such areas as food and toward fertilizer and pesticides that were positive contributors to domestic inputs.

Such requirements have two implications. First, foreign aid was not unlimited, and Vietnam had to at least supply sufficient matching-funds for project aid. Particularly, as food import was forced to reduce, the domestic sector had to supply enough food for the urban labor force. In addition, industrial development also needed domestic raw materials and inputs provided by agricultural sector. Second, agriculture was supposed to play an important role in supplying foreign exchange earning through exports, in order to pay debt on the imports of machinery, equipment and intermediate inputs from CMEA countries. That is why the role of agriculture was always a priority in economic programs on food and export. In other words, though Vietnam prioritized industrial development and aimed at capacity creation of the economy with investment goods imported on foreign finance, the capacity utilization of such industrial base was highly dependent on the supplies of domestic agriculture.

Under the centrally planned system, the State played dominant role in the mobilization and relocation of domestic resources. Development of financial institutions was depressed under the mono-bank system. The State Bank of Vietnam performed both the central and commercial banking functions. In addition, there were two specialized banks, the Bank for Foreign Trade of Vietnam (Vietcombank), which handled trade finance and management of foreign exchange, and the Bank for Investment and Development of Vietnam (BIDV), which provided long-term finance for public works and infrastructure projects (World Bank 1995b: 8). It also allocated loans to SOEs that were mandated by the planning authorities. Interest rates on loans were often below deposit rates, which were in turn often below inflation rates. Credit grew at the rate required by SOEs to reach their production targets, and to finance government deficits. This resulted in high inflation that caused low rate of saving outside of required deposits of SOEs and State trading agencies.

Available data for 1986-88 shows that saving deposits accounted for just 1-3 percent of GDP. This rate is believed to have been the lowest in the pre-reform period as the period 1986-88 witnessed the highest rate of inflation. The share of saving deposits in total revenue of banking systems showed the declining trend in the pre-reform period, implying the higher share of saving deposits over GDP during 1976-85 and for the entire pre-reform period. Nevertheless, this rate could not be much higher, as most of the revenue of the banking system came from the required demand deposits of State trading agencies and SOEs (over 70 percent of total banking assets). Meanwhile the share of saving deposits over total banking revenue was just in the range of 5 to 10 percent (Table V.A.3).

Table V.2 shows that the domestic revenue of the State budget was quite significant at more than 20 percent of the GDP in the pre-reform period. State revenue in the periods of 1976-80 and 1981-84 was significantly high at more than 25 percent of GDP in such a poor country like Vietnam. Nevertheless, it declined seriously in the 1985-88 period. State expenditure followed this trend in State revenue, but at higher levels due to foreign aid. State expenditure was declining throughout the pre-reform period as foreign transfer decreased. Budget deficit was increasingly financed by the issue of money from State Bank. Particularly, do-

mestic loan was 4.5 percent of GDP in the 1985-88 period when inflation was highest.

From 1976-80 to 1981-84, the pressure to reduce the budget deficit resulted in the decline in State capital expenditure. In contrast, the decline in State expenditure from 1981-84 to 1985-88 mostly fell onto current expenditure. Such changes in pattern of State expenditure were consistent with the changing direction of foreign aid mentioned earlier.

Table V.2.
Budget Operation, 1976-88

	(percent of GDP)			
	1976-80	1981-84	1985-88	1976-88
Revenue	25.1	26.1	13.7	21.9
Tax	3.3	5.2	2.7	3.7
<i>Agriculture</i>	1.1	1.3	0.7	1.0
<i>Non-Agriculture</i>	2.1	3.5	1.4	2.3
<i>Trade</i>	0.0	0.4	0.7	0.4
Non-Tax	21.8	20.9	11.0	18.2
<i>SOE Transfer</i>	20.0	15.9	9.9	15.6
<i>Joint-Venture</i>	-	-	-	-
<i>Others</i>	1.9	5.1	1.0	2.6
Expenditure	42.2	36.1	21.4	33.9
Current	27.6	28.1	15.4	24.0
Saving	-2.5	-2.1	-1.8	-2.1
Capital	14.6	8.0	6.0	9.9
Interest Payment	-	-	-	-
Balance	-17.1	-10.1	-7.8	-12.1
Finance	17.1	10.2	7.4	12.0
Foreign Transfer	16.1	7.4	2.9	9.4
<i>Grant</i>	16.1	7.4	1.4	8.9
<i>Foreign Loan</i>	-	-	1.6	0.5
Domestic Loan	1.0	2.7	4.5	2.6

Source: Table V.A.2.

Within State revenue, direct transfer from SOEs was the most important component. For the entire pre-reform period it accounted for more than 70 percent of State domestic revenue and imposed influential impact on changes in State domestic revenue. The declining share of State revenue over GDP in the pre-reform period was mostly explained by the decrease in the contribution of SOEs. In contrast, the contribution from agriculture, specifically tax contribution of agricultural cooperatives, was not as high as expected. For the entire period, tax revenue just accounted for 17 percent of State domestic revenue; in which share of agricultural tax was less than 30 percent. As a result, agricultural tax contributed just less than 5 percent to State domestic revenue. Further, contribution of State farms to State revenue was not expected much as this sector accounted for a very small share in SOEs' output.

As a result, it is doubted at whether agriculture could contribute resources to industrialization. Related to this point is the question whether the industrial sector could finance itself and under what mechanism the surplus fund came from. The explanation that efficient utilization of resources within industrial SOEs could generate sufficient surplus for industrialization is undoubtedly rejected as it was reiterated that the SOEs had wasted a lot of resources under the centrally planned system. Truong Chinh, former General Secretary of VCP disclosed in VCP's Congress, 1986 that

due to [Vietnam's] system of mismanagement marked by bureaucratic centralism and State subsidization, we have not turned this aid to good account. Instead, we have spent each year a few hundred million rubles on social consumption, [State] subsidies and loss compensation [for unprofitable SOEs]. Several other hundred millions of rubles have been scattered on so many construction projects (quoted by Vo, N.T. 1990: 156-7).

Therefore, relatively high profit and transfer of SOEs, instead, may have come from low prices of wage goods and intermediate inputs that were provided either by domestic agriculture or by generous assistance of CMEA countries.

In short, the pre-reform period witnessed low investment rates and it was utilized inefficiently. Growth was enhanced by institutional reform rather than by increases in capital stock. As domestic saving was negative for most of the years, investment was heavily dependent on foreign aid that was mostly contributed by the Soviet Union. Basing on the principle

of 'mutual advantage' cooperation within the CMEA countries and facing the Soviet intention of minimizing its net cost of assistance, Vietnam had to generate sufficient supplies of export and other important intermediate inputs for the utilization of the existing capacity that had been built up by Soviet aid. In this aspect, agriculture needed to be the source of export of industrial crops, vegetables and fruits, as well as the supplies of food and other intermediate inputs for the domestic industrial sector.

Domestic resource mobilization was under control of the State as financial institutions were confined to the mono-bank system, whose main functions were to allocate credits to SOEs. According to the mandatory of planning authorities, SOEs were the major basis for State revenue. Nevertheless, contribution from SOEs was decreasing sharply in the pre-reform period, which partially was resulted from SOE inefficiency. Meanwhile, agricultural tax contributed very little to State revenue.

Therefore, putting all together, it suggests that the burden of domestic resource mobilization, if possible, may have been put on agriculture through low terms of trade. Nevertheless, such extraction of resources needed a growing agricultural marketed surplus that may have been existed in forms of export, intermediate inputs and food. The availability of agricultural marketed surplus, in turn, was expected to increase the capacity utilization of SOEs. Particularly, as food shortage always threatened the living standards of people in urban areas, then the problem of the State was how to get out of the Ricardian trap, meaning to have sufficient amount of agricultural marketed surplus either through investment or the re-organization of agricultural production.

5.1.2. The post-reform period

Looking at Figure V.1 again and Table V.3, investment rate was relative high at 23 percent of GDP in the post-reform period. It was more than 1.5 times the investment rate in the pre-reform period. Particularly, after its low level in the early stage of 1989 reform, investment was approaching 30 percent of GDP, the rate that enhanced Vietnam to come into the stage of economic take-off since 1993. Investment had positive impact on economic growth in the post-reform period, particularly during 1993-96 when economic growth reached its highest level of 9 percent per year.

Table V.3.
Financial Mobilization and Relocation, 1989-2000

	(percent of GDP)			
	1989-92	1993-96	1997-2000	1989-2000
Consumption	92.4	82.7	77.3	84.1
Export	28.9	34.1	48.1	37.0
Import	36.2	43.7	53.2	44.4
ICOR	2.5	2.9	4.5	3.2
Investment	15.4	26.3	28.5	23.4
Budget	4.9	6.1	6.7	5.8
Non-Budget	8.1	12.5	15.2	11.7
SOEs	1.2	4.8	9.4	5.0
Domestic Private	6.9	7.7	5.8	6.8
FDI	2.4	7.7	6.6	5.2
Gross Saving	11.9	21.2	23.5	17.1
Domestic Saving	7.6	17.3	22.1	14.1
Budget	1.1	4.9	5.1	3.1
Non-Budget	6.5	12.4	17.0	11.0
Current Transfer	4.3	3.8	2.2	3.2
Capital Transfer	2.9	5.7	3.9	4.9

Source: Table V.A.1.

Compared to the pre-reform period, investment showed its higher efficiency as the ICOR decreased from 4.0 in the pre-reform period to 3.2 in the post-reform period. During 1989-92, the initial positive impact of the 1989 reform brought about good economic performance with a growth rate of more than 6 percent per year as the ICOR was as low as 2.5¹ (though investment rate was only 15 percent). This excellent performance of the economy during 1993-96 came from the continuing effort of reform and drastic increase in investment. During 1997-2000, the economic growth rate of more than 6 percent per year was considered relatively good at the time of regional financial crisis. This performance was significantly influenced by high the investment rate of nearly 30 percent. The high ICOR of 4.5 during 1997-2000 period was understandable, as the initial positive impact of the 1989 reform was over.

Looking at the composition of investment in Table V.3, foreign finance was not as high as expected in the post-reform period. FDI just accounted for a bit more than 20 percent of total investment for the entire period. In the early post-reform period of 1989-92, the share of FDI in total investment was only 15 percent, even though investment was low already in this period. In fact, the 15 percent investment rate of Vietnam in the initial stage after the reform even received praises from Western countries and multinational institutions as the country faced serious decline in Soviet aid² and FDI was still in its infancy. The commitments of FDI projects were not high and just few of them were implemented due to uncertainty surrounding the economic and political situation and the authorities' excessive red tape and bureaucracy in dealing with foreign investors (Fforde and de Vylder 1996: 286-7).

In its height of 1993-96, FDI, though growing rapidly, also accounted for just less than 30 percent of total investment. This was reflected in large trade and current account deficit during 1993-96, 60 percent of which was financed by FDI that was mostly used for the import of capital and intermediate goods (World Bank 1995a: 12-3). In fact, the growth of FDI disbursement in this period was mostly due to the lift of US trade and investment embargo and the resumption of relationships between Vietnam and the Breton Wood institutions, and the Paris Club (Sepehri and Arkam-Lodhi 2002: 20). The re-emergence of multinational financial institutions also contributed to the increasing foreign financing for Vietnam, but this source of finance fluctuated, reflecting the weak absorptive capacity of Vietnam's economy as ODA disbursements were much lower than ODA commitments in this period (Kokko and Zejan 1996: 15-6).

In the period of 1997-2000, FDI contributed only 23 percent of total investment due to the negative impact of regional financial crisis, though investment rate was still increasing. Both FDI commitments and disbursements showed serious decline, which mostly caused by FDI from East Asia countries and Japan – the biggest source of FDI since those countries were dealing with their own severe domestic crisis (World Bank 1999: 2-3). The low rate of FDI disbursements could also be linked to the perceived high cost of doing business in Vietnam and the stricter access to foreign exchange for the imports of FDI ventures since the

Vietnam's government attempted to restrict import and current account deficits during the time of the regional crisis (Kokko 1998: 5-6).

The role of the State in capital formation was drastically reduced in the post-reform period after the centrally planned system was demolished. The share of State in total investment was only 25 percent for the entire period. Particularly, State investment was reduced considerably from 10 to less than 5 percent of GDP between 1985-88 and 1989-92 as a result of declining foreign aid along with the collapse of CMEA system. As share of GDP, State investment was gradually improved in the periods of 1993-96 and 1997-2000 to 6-7 percent. Nonetheless, as share of total investment, State investment was steadily declining from 32 percent in 1989-92, to 23 percent in 1993-96 and 1997-2000. Albeit, this rate of investment was remarkable at the time when the old system of State budget was removed without much external assistance.

Owned budgetary saving played increasingly dominant role in financing State investment. Compared to the pre-reform period when budgetary saving was negative for most of the time, budgetary saving in the post-reform period accounted for 65 percent of State investment and this share increased considerably from around 20 percent in 1989-92 period to 80 percent in the 1993-96 and 1997-2000 periods.

In its effort to stabilize the economy, the budget deficit was restrained at a low level of 3 percent of GDP for the whole post-reform period. This deficit also decreased considerably from 4 percent of GDP in 1989-92 period to 2 percent in 1993-96 and 1997-2000 periods. The dependence on foreign financing of budget deficit was reduced either, and most of domestic finance existed in the form of issuance of government bonds to avoid inflation.

Table V.4.
Budget Operation, 1989-2000

	(percent of GDP)			
	1989-92	1993-96	1997-2000	1989-2000
Revenue	15.0	22.3	19.7	19.0
Tax	4.2	8.8	7.4	6.8
<i>Agriculture</i>	1.0	0.8	0.5	0.7
<i>Non-Agriculture</i>	1.6	2.7	2.4	2.2
<i>Trade</i>	1.6	5.4	4.6	3.9
Non-Tax	10.9	13.5	12.2	12.2
<i>SOE Transfer</i>	8.9	10.4	8.7	9.3
<i>Joint-Venture</i>	0.0	0.7	1.1	0.6
<i>Others</i>	2.0	2.4	2.4	2.3
Expenditure	19.4	24.5	21.7	21.9
Current	13.9	17.4	14.4	15.2
Saving	1.1	4.9	5.3	3.8
Capital	4.9	6.1	6.7	5.9
Interest Payment	0.7	1.0	0.6	0.8
Balance	-4.4	-2.2	-2.1	-2.9
Finance	4.4	2.2	2.2	3.0
Foreign Transfer	2.3	1.2	1.3	1.6
<i>Grant</i>	0.3	0.7	0.6	0.5
<i>Foreign Loan</i>	2.0	0.5	0.7	1.1
Domestic Loan	2.2	1.0	1.0	1.4

Source: Table V.A.2.

Such an achievement came from efforts to consolidate budget revenue and restraint current expenditure. Looking at Table V.4, State current expenditure was kept in line with State budget revenue and as share of GDP it was much lower compared to that in the pre-reform period. This came from the declining share of subsidies and wage for State administrative staffs and workers along with the efforts to rationalize State employment and modernize the social insurance system³. Compared to the pre-reform period, State domestic revenue in the post-reform periods did not declined much as it still amounted to 19 percent of GDP for the entire period. As a share of GDP, State revenue increased sharply

from 15 percent in 1989-92 to 22 percent in 1993-96, and then leveled off at around 20 percent in 1997-2000.

The composition of State revenue changed considerably after the 1989 reform. Tax revenue became more important, while SOE transfer was not as much as that in the pre-reform period, though its share was still dominant. Tax revenue contributed to more than 35 percent of State revenue, more than double that in the pre-reform period. The most important item in tax revenue was trade tax that amounted to 60 percent in total tax revenue. As the external trade was gradually liberalized with the replacement of licenses and quotas by import and export duties since 1988, trade taxes sharply increased, particularly in the 1993-96 when growth of export and import were highest in the post-reform period. The decline in contribution of trade taxes caused a significant reduction in State revenue in 1997-2000, which came from a combination of factors such as the falling share of imports in GDP in an attempt to confront the regional crisis, as well as the shift in the composition of imports away from consumption goods that suffered higher tariff compared to intermediate and capital goods (IMF 2002: 4).

Other types of taxation did not contribute much to the State revenue, though new tax laws such as turnover, profit, income and VAT taxes had been introduced as early as 1990. As noted by Fforde and de Vylder (1996: 289),

the implementation of the new tax laws was proved to be far more difficult than their promulgation. Non-payment of taxes remained endemic, and actual tax rates were still subject to negotiation and outright evasion. Corruption was widespread...and taxes collected by provincial and local governments on behalf of the central government were often only partly transferred to higher levels.

In addition, agricultural tax, as usual, contributed insignificant share at only 10 percent to total tax revenue. As a result, agricultural tax amounted to even less than 5 percent of State domestic revenue.

SOE transfer was amounted to about half of State revenue in the post-reform period, of which half came from oil revenue after the exploration of oil in the southern coast since 1989. The emergence of oil revenue in fact saved the State budget from collapse in 1989-92, when SOEs faced serious difficulties caused by the reduction of cheap inputs and declining demand associated with the collapse of CMEA system⁴.

During 1993-96, non-oil SOE contribution improved considerably along with high growth of the sector and consolidation of tax regulations on the sector. Since 1992, SOEs were no longer allowed to avoid their capital depreciation payment to the State and had to pay a levy on the use of capital allocated through the budget (Dollar 1992: 366, Harvie and Tran, V.H. 1997: 69-70). During 1997-2000, SOE transfer was again highly dependent on oil revenue, as the non-oil SOEs showed poor performance at the time of the regional financial crisis.

The 1989 reform had positive impact on domestic non-budget investment and this investment had become dominant in total investment. Domestic private investment played increasingly dominant role during 1989-92 and 1993-96. Along with this, SOEs' investment was also becoming important, particularly in the 1997-2000 period it accounted for up to 35 percent of total investment. It is not clear whether growth of SOEs' investment was based on their own resources or financed by the other sectors, because there is no data that dissects the decomposed share of SOEs and domestic private sector in total domestic saving. Nevertheless, it is certain that most of SOEs' investment was financed by domestic non-budget saving as domestic sector accounted for more than 80 percent of gross saving, of which 80 percent came from non-budget sector.

It is argued that a significant amount of SOEs' investment was financed by the domestic private sector. Fforde and de Vylder (1996: 274) suggest that coping with the difficulties due to the loss of Soviet aid in the early 1990s, the State may have looked for some domestic resources to subsidize and maintain SOE operation. As the 1989 reform and its growth achievement had started with agriculture, it was then possible for the consequent rural saving to be mobilized by the State, and then channeled into SOEs through State monopoly control over the financial system.

Vu, Q.V. *et al.* (2002: 153-3) estimates that private households contributed most of domestic saving in the 1990 decade. This share was considered to be very high in the early 1990s as budget saving was negative at that time. In addition, the non-financial corporations were not a big source for net capital formation as 80 percent of their saving came from depreciation funds. Meanwhile, this sector, which was dominated

by SOEs and foreign joint-ventures, accounted for the largest share of 70 percent in gross capital formation.

On the same line, Kokko (1998: 3) argues that SOEs put the burden of financing its growth on credit from the banking system. It is noteworthy that SOEs played the dominant role in non-financial corporations and industrial sectors, and most of agricultural activities were under control of private peasant households. Therefore, the above evidence seems to suggest that the growth of industrial sector, particularly industrial SOEs in the post-reform period relied heavily on resource transfer from peasant households through the financial system.

In short, the 1989 reform and the end of CMEA aid did not lead to investment collapse in the post-reform period in Vietnam. Investment was significant for economic growth as its rate and efficiency was improved considerably. Contribution of FDI in total investment was unstable and not as high as expected. Instead, the improvement of investment rate was mostly due to growth of domestic saving that was contributed both by budget and non-budget sources.

State budget was consolidated in the effort to stabilize the economy. Current state expenditure was restrained as subsidies for SOEs and wages for State administrative staffs and workers were reduced under rationalization programs. State revenue was maintained at the level of the pre-reform period despite the negative effect of the 1989 reform. Nevertheless, composition of State revenue changed considerably. Non-oil SOEs' transfers were not as important as in the pre-reform period. Instead, most of State revenue came from trade tax and oil revenue. Agricultural tax as usual did not contribute much to State revenue.

Yet in spite of improvement in budget saving, the major source to finance investment in the post-reform period came from non-budget saving. As a majority of investment was undertaken in the non-financial corporations that were dominated by industrial SOEs and foreign joint ventures, it is argued that the domestic private sector became net savers and played an important role in financing industrialization in the post-reform period. Following this, agriculture was believed to transfer capital to industrial sector through the financial institutions, as most of agricultural activities belonged to private peasant households.

5.2. Agricultural Constraints on Industrialization

This section is set up to clarify the major constraints imposed by agriculture on Vietnam's economic growth. These constraints were attributed to resource endowment of the country and/or to a given context of Vietnam's economic development at a specific point in time. Policy makers can realize these constraints and address them. However, this is not always the case. The constraints can be released, but not intended by policy makers or the constraints may also put obstacles to economic growth. Furthermore, an empirical clarification of agriculture's constraints on economic growth has important implications to assess the optimal patterns of intersectoral resource flows in the next chapter. In other words, it will show the actual constraints imposed by agriculture on economic growth and give the suggestion for the direction of the intersectoral resource flows to release those constraints.

In theories, agriculture may play five roles in industrialization:

1. Supplying intermediate inputs and food as wage goods for industrial sector;
2. Transferring surplus labor at a low wage cost to the industrial sector;
3. Providing foreign exchange through export to import intermediate inputs and capital goods for industrial sector;
4. Contributing financial resources for industrial sector;
5. Establishing markets for industrial products.

The first four roles involve with the contribution of factors of production for the industrial sector. Roles (1), (2) and (4) are interrelated. The expansion of the industrial sector may need not only financial resource but also labor and commodities from agriculture. The transfer of labor is enhanced by a sufficient amount of wage goods transferred from agriculture, which in turn affects the contribution of financial resources from agriculture. Role (3) is relatively independent from the others since it operates where industrial growth faces foreign exchange constraint. The last role may be operated by two mechanisms: (i) agriculture generates a big demand for industrial products if agricultural income and marketed surplus are significantly high; and (ii) availability of agricultural

goods increases the relative price of industrial goods, hence giving incentives for industrial investment and growth.

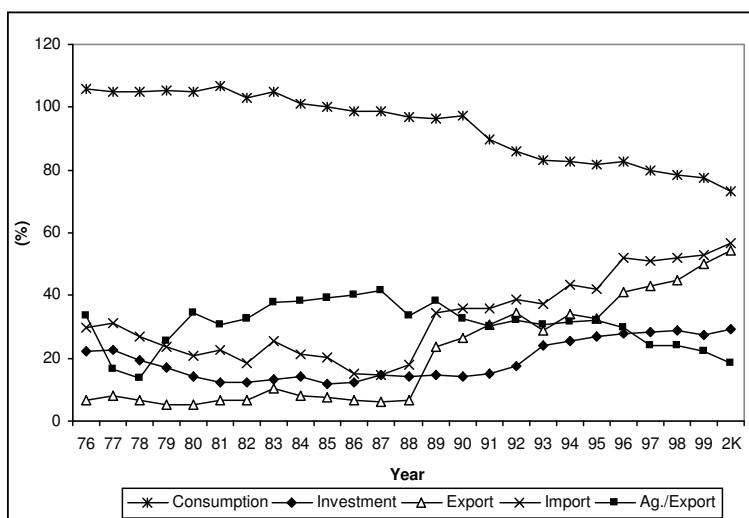
With this theoretical framework in mind, this section is structured as follows. First, it examines the foreign exchange constraint on Vietnam's economic growth and contribution of agricultural export in releasing this constraint. Second, an attempt is made to analyse the transfer of agricultural marketed surplus along with the labor transfer from agriculture to non-agriculture. It shows the extent to which the availability of food and labor transferred from agriculture contributes to capital accumulation and economic growth in non-agriculture by keeping low real wage. Third, it assesses the size of demand established by agriculture for industrial products and the effect of agricultural terms of trade on demand for industrial products.

5.2.1. Foreign exchange constraint

Vietnam's agriculture has not contributed significantly to the relief of foreign exchange constraint. Looking at Figure V.2, in the pre-reform period of 1976-88, Vietnam had to import for the domestic demand of both consumption and investment goods, and domestic consumption was even higher than GDP up to 1985. Share of exports over GDP was very low at 6-7 percent, while that of imports was much higher at 22 percent, leaving the trade deficit of 15 percent of GDP, which was mostly financed by foreign resources.

Investment rate followed changes in import quite well. Furthermore, agriculture even did not contribute significantly to the limited amount of export, hence relieving foreign exchange constraint. Share of export in GDP was stable, while that of import was decreasing over time from 26 to 22, then to 17 percent in 1976-80, 1981-84 and 1985-88, respectively. In contrast, at the same time, share of agriculture over total export was increasing continuously from 25 to 35, then to 40 percent. As a result, it implies that during 1976-88 agricultural export did not play a significant role in releasing the foreign exchange constraint on the import of capital goods. This conclusion reconciles with the earlier suggestion in Section I.1 that Vietnam was highly dependent on foreign aid to finance the import of capital goods.

Figure V.2.
Composition of GDP by Uses and Agricultural Export, 1976-2000
 (percent of GDP)



Note: Ag./Export is the percentage of agricultural exports in total exports

Source: Table V.A.4

In the post-reform period, both export and import was pushed up to high level. Investment rate was still positively related to imports. Yet, exports strongly followed the continuous growth of import. As share of consumption over GDP was less than 100 percent and decreasing, it means that investment was increasingly financed by domestic saving and most of foreign exchange for import of capital goods came from export earnings. Share of agriculture in total export, however, was decreasing continuously from 33 to 31, then to only 22 percent in 1989-92, 1993-96 and 1997-2000, respectively. It implies that most of foreign exchange for the import of capital goods came from export earnings of non-agricultural sector.

Consequently, agricultural exports were not the major source to release foreign exchange constraint in both the pre- and post-reform periods. It was against the expectation of the State that agriculture must have

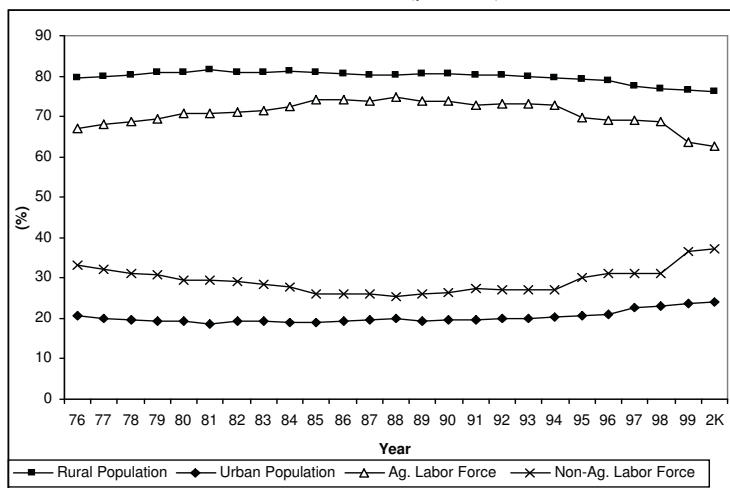
played important role to push up foreign exchange earnings. In the initial stage of development, this insignificant contribution of agricultural export points to two implications. First, stagnation of agricultural production put supply-constraint on the expansion of agricultural export. Second, growth of cash crops, that Vietnam had comparative advantages such as industrial crops, fruits and vegetables, was not relatively promoted. In terms of resource allocation between sectors, it implies that resources for the growth of agricultural sector as a whole were limited and/or the cash crop sector was ignored in agricultural investment policy. These suggestions will be discussed in more details on the issues of agricultural growth in Chapter VII.

5.2.2. Wage goods constraint

As suggested in the introduction of this section, wage goods constraints can put obstacles to the development of the non-agricultural sector. First, industrialization needs labor transfers from agriculture and food accompanied with it. Second, under the limited capacity to import food of the country, availability and relatively low prices of food enhances profitability of industrial enterprises by lowering wage share in total cost of production, hence fostering capital accumulation and expansion of the sector. The study will make an assessment on the role of Vietnam's agriculture in providing wage goods for industrialization by looking at the changes in structure of the population and labor force, terms of trade and wage rate in non-agricultural sector.

Looking at Figures V.3 and V.4 and Table V.5, the structure of the population and labor force changed very slowly and most of population and labor force was concentrated in rural and agricultural sector. From the pre- to post-reform periods, share of rural population decreased slightly from 81 to 79 percent, while share of agricultural labor also reduced from 71 to 70 percent⁵.

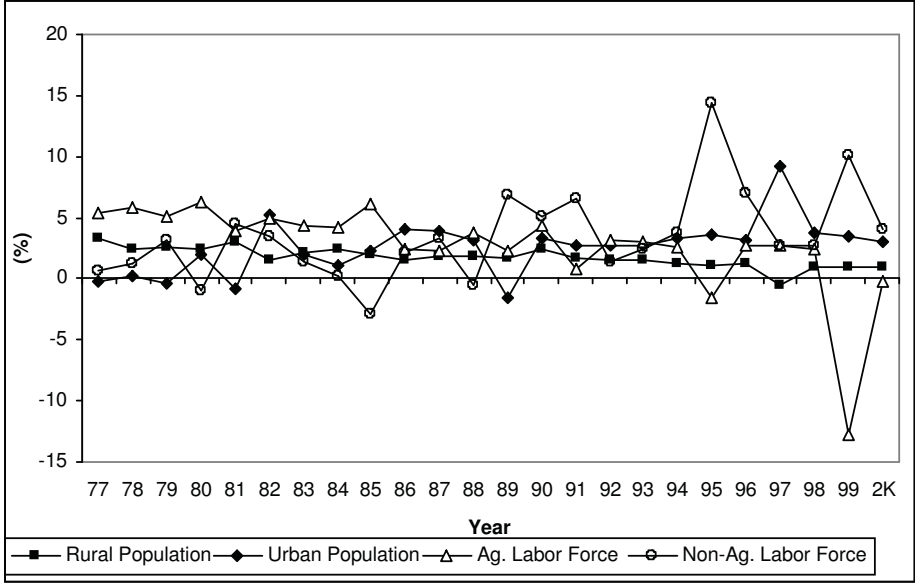
Figure V.3.
Composition of Population and Labor Force, 1976-2000
 (percent)



Source: Table V.A.5.

In the pre-reform period, structure of population and labor force was likely to favor the rural and agricultural sector. Share of rural population slightly increased from 80 to 81 percent, and share of agricultural labor force correspondingly increased at faster rate from 69 to 74 percent. It can be observed from Figure V.4 and Table V.5 that the growth rate of rural population and agricultural labor force was higher than that of urban and non-agricultural labor force, respectively, for most of the time in the pre-reform period.

Figure V.4.
Growth of Population and Labor Force, 1976-2000
(percent)



Source: Table V.A.5.

Table V.5.
Structure and Growth of Population and Labor Force, 1976-2000

(annual average, percent)

Pe- riod	Composition				Growth			
	Population		Labor Force		Population		Labor Force	
	Rural	Urban	Ag.	Non-Ag.	Rural	Urban	Ag.	Non-Ag.
76-80	80	20	69	31	2.7	0.4	5.7	1.0
81-84	81	19	71	29	2.3	1.9	4.4	2.4
85-88	81	19	74	26	1.8	3.3	3.6	0.5
76-88	81	19	71	29	2.3	1.9	4.6	1.3
89-92	80	20	73	27	1.8	1.8	2.6	5.0
93-96	79	21	71	29	1.3	3.2	1.7	6.9
97-2K	77	23	66	34	0.6	4.9	-2.0	4.9
89-2K	79	21	70	30	1.2	3.3	0.8	5.6

Source: Table V.A.4.

In the post-reform period, urban and non-agricultural sector seemed to have absorbed more population and labor force. Share of rural population decreased from 80 to 77 percent, and share of agricultural labor force reduced at a faster rate from 73 to 66 percent. In contrast to the pre-reform period, the growth rate of rural population and agricultural labor force was lower than that of urban population and non-agricultural labor force for most of the time in the post-reform period⁶. Particularly, the urbanization process showed a clearer tendency since 1994 when the growth rate of the urban population and non-agricultural labor force started rising at a much faster speed than that of rural population and agricultural labor force.

The slow pace of rural-urban and agriculture-industry labor transfer for the whole period can be explained by the high concentration of industrial development in a few big urban centers (Mellor 1994: 4). It is shown that the urban concentration was relatively high in Vietnam, compared to other countries in the Southeast Asian region. In fact, the level of urban concentration in Vietnam was only lower than that of the Philippines, which was a bad example of excess urban concentration. This high urban concentration not only generated a limited amount of

employment, but also imposed great costs in terms of infrastructure and quality of life. In addition, there was no government attempt to counter this urban concentration.

Laquian (1996: vi-ix) suggests that infrastructure investment was concentrated in the two biggest cities, Hanoi and Ho Chi Minh City, and this approach would inevitably lead to mega-urban regional development. A strategy for widespread development of urban industries was not clearly determined. Instead, the government tried to counter urban concentration by forestalling rural-urban migration. Furthermore, the bias for the development of heavy and import-substitution industries was not expected to generate sufficient employment in the non-agricultural sector. Even in the post-reform period, when some rural-urban migration occurred, employment generation of non-agriculture was still limited due to the bias for SOEs concentrating import-substitution industries with low employment intensity (Belser 2000: 6).

The de-urbanization process in the pre-reform period was attributed to three factors. First, the resident registration system, which was compulsory for people to get access to food and other necessary goods in the pre-reform period, hindered the free transfer of labor from agriculture to non-agriculture.

Second, rural-urban migration was not encouraged by State policies, as urban infrastructure was not well prepared in the post-war time. In fact, migration in the pre-reform period took two major forms of urban-rural and rural-rural. After the country's reunification in 1975, the State encouraged surplus population in large urban centers, particularly in the South, to move to the rural areas and small towns (Nguyen, K.V. 1990: 14). In addition, it was reported that thousands of residents of the former Saigon (now Ho Chi Minh City) were also sent to resettlement villages to be re-educated (Laquian 1996: vii).

Third, large-scale programs⁷ were implemented to bring people from densely populated areas such as Red River Delta and Central Coast to new economic zones in the Northern Mountain, the Central Highlands, the Eastern South and Mekong River Delta. It is reported that 3.7 million people had been migrated in this way to new economic zones during 1976-90 (Do, V.H. and Trinh, K.T. 1999: 5).

In the post-reform period, labor transfer from agriculture to non-agriculture was freed and there were signs of significant rural-to-urban

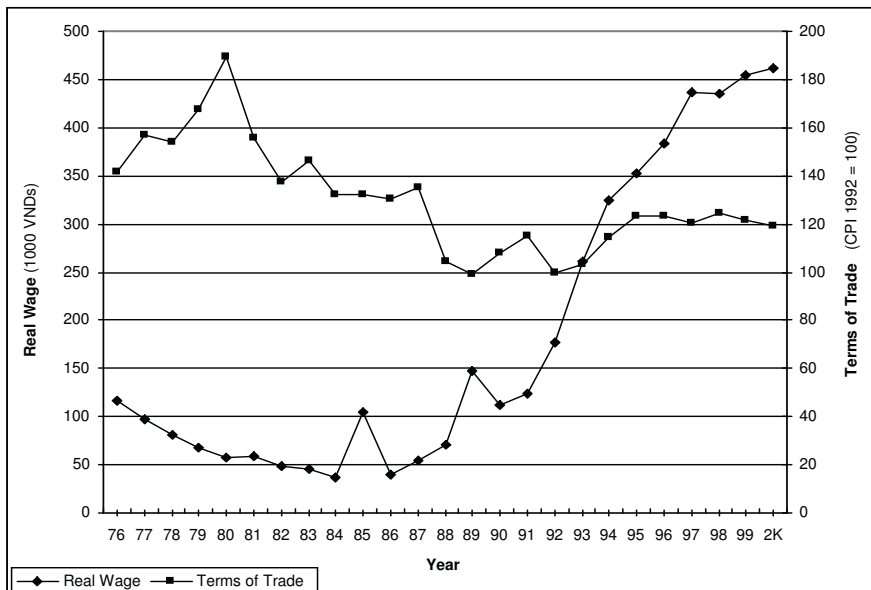
migration to look for jobs in low-paid sectors. As the economic structure after the economic reform was relatively more labor-intensive, particularly in the private non-agricultural sector, more chances for job seeking were generated in urban area.

Changes in employment structure between the pre- and post-reform periods bring about two implications. First, in the pre-reform period, internal capital accumulation within non-agricultural sector was dependent on either lowering real wage rate of industrial workers and/or lowering agricultural terms of trade, as agriculture-industry labor transfer did not take place. Second, in the post-reform period, labor transfer to low-paid jobs in non-agricultural sector may have contributed to internal capital accumulation of the sector.

In Figure V.5, the 1992 consumer price index (CPI) is used to calculate agricultural terms of trade and real wage⁸. In addition, real wage of State administrative staffs and SOE workers is selected as the proxy for real wage in non-agricultural sector, as there is no data available for the sector as a whole.

There are two important observations from Figure V.5. First, take CPI as the prices faced by agricultural producers, agricultural terms of trade were higher by about 30 percent in the pre-reform period, compared to those in the post-reform period. Though we need to check with other price indexes, the relatively high terms of trade for agriculture in the pre-reform period are against the conventional perception that the agricultural sector was relatively squeezed under the centrally planned system. Second, real wage was relatively low and agricultural terms of trade were relatively high in the pre-reform period. In contrast, real wage was relatively high and terms of trade were relatively low in the post-reform period. This implies that internal capital accumulation within non-agricultural sector, if possible, was based on the low wage rate of industrial workers in the pre-reform periods. Contribution of the agricultural sector, in terms of providing food at relatively low prices, was insignificant for internal capital accumulation within non-agricultural sector in the pre-reform period. In contrast, both labor transfers from agriculture, and relative low prices of wage goods enhanced the accumulation of non-agricultural sector in the post-reform period.

Figure V.5.
Wage of State Administrative Staffs and Workers, and Terms of Trade, 1976-2000
 (1992 prices)



Source: Data on terms of trade are from Table VI.A.24. Data on real wage rate are estimated from nominal wage, using consumer price index of 1992. Data on nominal wage are from Tran, V.T. (ed. 2000m Table 1.5: 242) for 1976-98, and from IMF (2002, Table 12: 66) for 1999-2000.

Table V.6.
Inflation by Markets and Sectors, 1976-87

(percent of changes in CPI from previous year)

Year	Inflation	Share by Markets (%)		Share by Sectors (%)	
		Official	Unofficial	Agriculture	Non-Ag.
1976	21.9	-2.3	102.3	47.3	52.7
1977	18.6	3.6	96.4	76.8	23.2
1978	20.9	14.5	85.5	84.1	15.9
1979	19.4	8.8	91.2	69.5	30.5
1980	25.2	17.6	82.4	69.9	30.1
1981	69.6	71.5	28.5	36.4	63.6
1982	95.4	70.1	29.9	37.9	62.1
1983	49.5	45.5	54.5	54.9	45.1
1984	64.9	48.1	51.9	33.6	66.4
1985	91.6	84.1	15.9	52.3	47.7
1986	487.2	68.9	31.1	50.5	49.5
1987	316.7	73.3	26.7	45.5	54.5

Source: Data for 1976 is from GSO (1980, Table 248: 370), for 1977-79 from GSO (1981, Table 182: 273-4), for 1980-82 from GSO (1983, Table 199: 309-10), for 1983 from GSO (1985a, Table 192: 269), for 1984-86 from GSO (1987, Table 177: 257), for 1987 from GSO (1989, Table 196: 294), and for 1988 from GSO (1990a, Table 171: 233).

Further investigation shows that internal capital accumulation within the non-agricultural sector was very limited in the pre-reform period under the relatively high prices of wage goods and the pressure to maintain living standards of urban workers. Within the pre-reform period, agricultural terms of trade were very unstable. They were improved and highest during 1976-80, decreased during 1981-84, and lowest in 1985-88, except for the year of 1985.

Table V.7.
Share of Markets in Internal Trade by Sectors, 1976-87

Year	(percent)					
	Total		Agricultural Goods		Non-Ag. Goods	
	Official	Unofficial	Official	Unofficial	Official	Unofficial
1976	55.8	44.2	-	-	-	-
1977	58.6	41.4	-	-	-	-
1978	60.5	39.5	44.4	55.6	77.8	22.2
1979	54.0	46.0	43.3	56.7	68.7	31.3
1980	48.8	51.2	39.7	60.3	59.9	40.1
1981	53.8	46.2	48.9	51.1	59.0	41.0
1982	51.8	48.2	45.2	54.8	57.1	42.9
1983	52.9	47.1	51.2	48.8	54.4	45.6
1984	55.9	44.1	52.2	47.8	58.7	41.3
1985	72.2	27.8	68.3	31.7	75.6	24.4
1986	73.8	26.2	68.5	31.5	78.3	21.7
1987	74.3	25.7	69.5	30.5	77.7	22.3

Source: Data for 1976 is from GSO (1980, Table 248: 370), for 1977-79 from GSO (1981, Table 182: 273-4), for 1980-82 from GSO (1983, Table 199: 309-10), for 1983 from GSO (1985a, Table 192: 269), for 1984-86 from GSO (1987, Table 177: 257), for 1987 from GSO (1989, Table 196: 294), for 1988 from GSO (1990a, Table 171: 233).

Tables V.6 and V.7 give a clear picture on the changes in terms of trade classified by markets. During 1976-80, most of inflation was caused by price increase of agricultural commodities in the unofficial (free or black) market. During 1981-84, the State took more control over internal trade. At this time, inflation became higher, and most inflation was caused by price increases in non-agricultural goods in the official markets. The State initiated policies of price and wage liberalization in 1985-86, when consumption subsidies were abandoned and the gap between prices in official and unofficial markets were gradually narrowed. This intervention led to very high inflation in the subsequent years of 1986-88, which was equally contributed by price increase of both agricultural and non-agricultural commodities in official market.

Looking at Figure V.5 again, real wages of industrial workers showed a declining tendency from 1970-80 to 1981-84. Price and wage liberalization in 1985 was associated with drastic acceleration in nominal and real

wage rate. Though inflation was high in 1986-88, real wage still increased as nominal wage was sharply rising. On average, real wage rate was highest in 1976-80 at around 85 thousand VNDs at 1992 prices. The lowest wage rate was reported in 1981-84, near 50 thousand VNDs. In 1985-88, real wage rate improved to near 70 thousand VNDs.

Combining with above observations on changes in inflation and terms of trade, we may come to two major points for discussion. First, only in the 1976-80 period, there was the tendency of declining real wage rate due to the increase in relative prices of agricultural commodities. Theoretically, it implies that a major share of internal capital accumulation within the, non-agricultural sector, if possible, must have come from lowering real wage of industrial workers in 1976-80 as agricultural price relatively increased.

Second, during 1981-88, agriculture played a more enhancing role by providing wage goods at low prices for internal capital accumulation as the State tried to depress relative price of agricultural commodities in this period. In particular, within the pre-reform period real wage was declining along with decreasing agricultural terms of trade level in 1981-84. Then, except for the year of 1985, during 1985-88 real wage was slightly increasing while agricultural terms of trade declined to the lowest level in the pre-reform period. Theoretically, it implies that lowering the prices of wage goods, if possible, would have largely financed internal capital accumulation within non-agricultural sector during 1981-88.

Yet, Section I.1 shows that domestic saving were negative in both 1976-80 and 1981-84, and the saving were just improved marginally to a positive level in 1985-88. It means that there was no clear relation between real wage and the actual internal capital accumulation within the non-agricultural sector in the pre-reform period. Therefore, one may conclude that by providing wage goods at low prices, the role of agriculture for internal capital accumulation within non-agricultural sector, was very limited in the pre-reform period. As a result, it may help explaining the high dependency of Vietnam on foreign aid for capital formation in the pre-reform period.

In the post-reform period, for most of the time, agricultural terms of trade were lower than those in the pre-reform period. Compared to the pre-reform period, agricultural terms of trade were quite stable, associated with the stability of general CPI in the post-reform period. As there

were signs of labor transfers from agriculture in the post-reform period, theoretically it may be concluded that low agricultural terms of trade and availability of agricultural goods after the economic reform brought about higher industrial profitability due to lower real wages. Nevertheless, one may doubt the conclusion as the growth of real wages of industrial workers and administrative staffs were so high since 1990. It means that although relative prices of wage goods were low, nominal wages in industrial sector increased so fast, hence labor transfers from agriculture did not contribute significantly to internal accumulation in non-agricultural sector.

There are two points for discussion. First, wages shown in Figure V.5 were those of State employees, which were much higher than those of private employees. Available data shows that wages of State employees in non-agricultural sector were often three to five times higher than those of non-State employees (GSO 2000f, SPC/GSO 1994). Second, most of labor transfers from agriculture were involved with economic activities, which required unskilled labor at low wage rates.

Table V.8.
Share in Total Non-Agricultural Employment of Productive Activities, 1989-97

Year	Total	(percent)					
		Classified by Sectors of Ownership		Classified by Economic Activities			
		State	Non-State	Manufacture	Construction	Trade	Others
1989	76.6	25.0	51.6	40.3	9.9	20.0	6.5
1990	76.6	20.8	55.8	40.4	9.7	20.0	6.5
1991	76.4	18.0	58.4	40.0	9.7	20.2	6.6
1992	76.4	16.8	59.6	40.1	9.6	20.1	6.6
1993	76.3	16.0	60.2	39.9	9.6	20.1	6.6
1994	76.5	15.5	60.9	39.4	10.6	20.0	6.5
1995	69.3	13.8	55.5	34.3	9.5	18.0	7.5
1996	69.4	13.6	55.8	33.2	8.9	19.6	7.8
1997	70.6	13.4	57.2	31.7	8.5	23.1	7.4

Source: Data for 1989 is from GSO (1991b, Tables 3, 5: 9, 11), for 1990-93 from GSO (1994, Tables 6, 8: 16, 18), for 1994 from GSO (1996a, Tables 2.4, 2.6: 29, 31), for 1995-96 from GSO (1998, Tables 3, 4: 10, 11), and for 1997 from GSO (1999d, Tables 3, 4: 10, 11)

Table V.9.
Growth and Share of Non-State Sector in Total Employment of Non-Agriculture, 1989-97

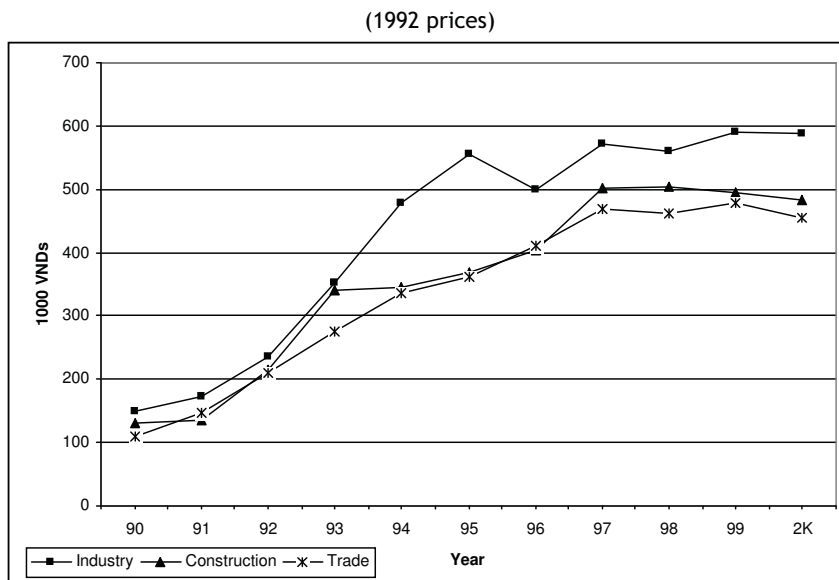
Year	(percent)							
	Non-Agriculture		Manufacture		Construction		Trade	
	Growth	Share	Growth	Share	Growth	Share	Growth	Share
1989	10.5	58.9	6.8	72.1	1.1	42.7	38.5	73.9
1990	14.1	64.4	10.6	76.2	28.2	53.2	12.0	79.2
1991	6.0	67.5	4.1	79.3	19.0	63.1	5.0	81.3
1992	4.2	69.4	2.7	80.1	5.7	66.4	3.1	83.1
1993	4.2	70.6	2.6	80.5	4.1	67.2	5.0	85.2
1994	4.9	71.3	1.6	79.9	24.1	72.8	5.7	87.5
1995	18.1	73.6	-1.6	79.0	-1.2	70.2	5.7	89.5
1996	5.6	73.9	1.2	78.5	-2.6	69.8	15.5	90.4
1997	5.0	73.9	-0.6	77.9	-6.3	65.3	26.4	92.3
Average	7.6	69.3	2.5	78.2	8.2	63.4	9.6	84.7

Source: Data for 1989 is from GSO (1991b, Tables 3, 5: 9, 11), for 1990-93 from GSO (1994, Tables 6, 8: 16, 18), for 1994 from GSO (1996a, Tables 2.4, 2.6: 29, 31), for 1995-96 from GSO (1998, Tables 3, 4: 10, 11), and for 1997 from GSO (1999d, Tables 3, 4: 10, 11)

Tables V.8 and V.9, and Figure V.6 show the employment and real wages in the non-agricultural sector, classified by three biggest branches; namely manufacture, construction and trade. There are 4 major observations from those tables and figures. First, the State sector became increasingly insignificant in employment generation. Second, within the productive sector of non-agriculture, share of manufacture in total employment decreased, which was significantly compensated by the increasing share of trade sector.

Third, share of the non-State sector in total employment increased sharply in construction and trade, where the growth rate of employment in non-State sector was the highest. It implies that construction and trade, which required mainly unskilled labor, were the most likely outcomes for labor transfer from agriculture.

Figure V.6.
Monthly Real Wages in Non-Agricultural Sector, 1990-2000



Source: Data are from IMF (1995b, Table 17: 17) for 1990-92, from IMF (1999b, Table 16: 18) for 1993-97, and from IMF (2002, Table 12: 66) for 1998-2000.

Fourth, assuming that real wages of private employees followed the changes in those of State employees, real wages increased fastest in the manufacture while they accelerated much slower in construction and trade. It suggests that labor transfers from agriculture in the post-reform period mainly went to construction and trade, where labor skill and wage rate was low. Meanwhile, economic growth rate of domestic non-State sector was recorded the highest in construction and trade. It implies that the labor transfer from agriculture at a low wage rate contributed somewhat to economic growth and increasing profitability of construction and trade sectors in the post-reform period.

It is worth noting that domestic saving, particularly from non-budget sources, were improved significantly since 1993 when rural-urban migra-

tion accelerated along with a widening wage gap between manufacture against construction and trade sectors. In addition, it was envisaged that domestic saving from the private sector played important role to finance manufacture SOEs. Therefore, we may conclude that the increasing profitability of construction and service sector may have been mobilized through the financial system for investment in manufacturing SOEs.

In short, internal capital accumulation within the non-agricultural sector was not enhanced by agriculture in the pre-reform period, as rural-urban labor transfer was limited. In addition, terms of trade were relatively high and it put pressure on the real wage rate of industrial workers. Yet, there was no clear signal that real wage rate of industrial workers was affected by relative prices of wage goods since the nominal wage rate was kept in line with changes in general price level. As a result, capital formation was highly dependent on foreign aid in the pre-reform period.

In the post-reform period, agriculture played a more enhancing role for internal capital accumulation within non-agricultural sector. The speed of rural-urban migration was relatively faster, and most of labor transfer went to low skilled and low-paid jobs in construction and service sectors. In addition, prices of wage goods were relatively stable and low. It created a good basis for high profitability of enterprises in construction and service sector, which was then envisaged to transfer for uses in the manufacturing SOEs.

5.2.3. Demand constraint

Has Vietnam's agriculture imposed demand-constraint on industrial growth? This question was irrelevant in the pre-reform period as Vietnam was a 'shortage economy' and domestic demand was controlled under the centrally planning system. In the post-reform period, it was possible for agriculture to impose demand-constraint on industrial growth, as supply was driven by demand in the market-oriented system.

As suggested in the theoretical framework, agriculture can impose demand constraint on industrial growth in two ways. First, the size of the agricultural sector is large enough and stagnation in the growth of agricultural income can put an obstacle to industrial expansion, particularly when the external market is limited for the country in the early stage of industrialization. Second, shortage of food can raise the terms of trade

against industrial sector and then increasing the share of expenditure on food, according to Engel's law that income elasticity of demand for food is high and price elasticity of demand for food is low at a low income level. Furthermore, trade liberalization also can increase agricultural terms of trade as relative prices of agricultural products in the domestic market may increase to follow the price level in the world market.

Empirical evidence shows that even though the growth of Vietnam's industrial sector may have been constrained by a shortage of domestic demand, such constraint came from factors rather than agricultural sector itself⁹. In terms of income size, agriculture just accounted for 25 percent, on annual average, in the post-reform period. Share of agriculture over total GDP declined continuously from 35 percent in 1989 to 20 percent in 2000. The relatively declining size of the agricultural sector was not due to a stagnation of the sector, but due to the very high growth in the non-agricultural sector. In fact, State investment played the dominant role to the growth of demand for the non-agricultural sector. Furthermore, anecdotal evidence shows that a major problem for industrial growth was low competitiveness of the sector, hence making it very difficult for the sector to compete with imported goods, particularly smuggling goods from China at very low prices.

In terms of changes in relative prices between sectors, there is no clear evidence that the growth of agricultural terms of trade imposed demand constraints on industrial growth in the post-reform period. First, industrial growth was on the downturn since 1996 and became lowest in 1998-99. However, looking at Figure V.5 again, the CPI-based agricultural terms of trade just increased sharply during 1992-96. Since 1996, agricultural terms of trade were quite stable, and the 1998-2000 period witnessed a declining trend in agricultural terms of trade.

Second, it will be shown later in Chapter VII that there was increasing availability of agricultural marketed surplus in the post-reform period and food shortage was not the reason to explain the growth of agricultural terms of trade. Instead, growth of CPI-based agricultural terms of trade followed those in the world markets.

Finally, related to the last point, growth of agricultural terms of trade in the domestic markets did not lead to the decrease in share of expenditure on industrial products. Instead, data from various sources share the same suggestion that share of expenditure on agricultural goods was con-

tinuously decreasing along with growing income level, though relative prices of agriculture increased¹⁰.

It is shown in the two I-O tables for 1989 and 1996 that the share of agricultural goods in total consumption decreased two times from 32 to 16 percent between 1989 and 1996 (GSO 1992a: 187-206, GSO 1999a: 248-52). In addition, VLSS (GSO 2000f, Tables 6.3.1, 6.3.2: 274-5, SPC/GSO 1994, Tables 6.7.1, 6.7.2: 199-200) shows that the share of expenditure on food decreased from 56 to 53 percent between 1993 and 1998. For the urban sector, the figures were 48 and 43 percent, respectively. In the 1992/1993 VLSS, share of expenditure on food declined steadily from 70 to 48 percent, along with the increasing level of income from the first to the fifth quintiles. Similarly, the 1997/1998 VLSS shows the same tendency, in which the share of expenditure on food decreased from 66 to 40 percent.

The GSO surveys (GSO 1999b, Tables 2.14, 2.37: 96, 120-1, GSO 2000a, Tables 2.14, 2.37: 100, 137-8) give further evidence to the argument that the growth of agricultural terms of trade in the domestic markets did not necessarily lead to the decrease in share of expenditure on industrial products in the post-reform period. Share of expenditure on food decreased from 64 to 63 percent between 1994 and 1999. The figures for urban sector were 60 and 59 percent, respectively. In 1994, between the first and the fifth quintile, the share of expenditure on food decreased steadily from 75 to 55 percent. In 1999, the corresponding figures were 73 and 53 percent.

All of the evidence implies that income elasticity of demand for food was not too high and/or price elasticity for food was not too low, thus the growth of agricultural terms of trade did not impose demand-constraint on industrial growth in the post-reform period. IFPRI study (1996: 207, 221) estimates that own-price elasticity of demand for rice (the main diet in Vietnam) was around -0.87 to -1.12, which was much higher than that in other countries with the same level of income. In contrast, income elasticity of demand for rice was quite low at 0.2. Furthermore, the IFPRI study suggests that increase in relative prices of rice may have led to a higher income for agricultural sector, and a higher economic growth due to multiplier effects. Benjamin and Brand (2002: 14-6, 43-4), using panel data from VLSS 1992/1993 and 1997/1998,

shows that expenditure elasticity to food was around 0.8 – the figure is lower than one, hence consistent with the normal demand for food.

In short, agriculture did not impose the actual demand constraint on economic growth in both the pre- and post-reform periods. In the pre-reform period, domestic demand was controlled under the centrally planning system, and the most important constraint came from the supply-side since Vietnam faced the ‘shortage economy’.

In the post-reform period, domestic demand possibly imposed constraints on economic growth, but not by agricultural sector for two major reasons. First, the size of agricultural sector was not significantly large. In addition, though agricultural growth was high in the post-reform period, the size of the sector was declining since non-agricultural sector accelerated quite fast. Second, there is no concrete evidence for the decline in budget share for industrial consumption goods due to the increase in agricultural terms of trade in the post-reform period. Price elasticity of demand for food was not too low and income elasticity of demand for food was not too high in Vietnam, hence Engel’s effect was not expected to be too strong in the post-reform period. In fact, it is suggested that an increase in agricultural terms of trade was likely to push up demand for industrial growth through the multiplier effect of increasing expenditure on industrial goods by agricultural households. Yet, this multiplier effect was not expected to be too strong, since the size of the sector in total GDP was insignificant and declining in the post-reform period¹¹.

5.3. Conclusions and Implications

In brief, in the pre-reform period the State played dominant role in resource mobilization and allocation under the centrally planned system. Foreign aid contributed overwhelmingly to investment and most of State domestic revenue came from the SOEs. Under these conditions, agriculture was perceived to play two important roles. First, it had to generate a considerable amount of exports, so Vietnam could participate into the "mutual advantage" cooperation with CMEA countries. Second, the utilization of existing industrial capacity created by Soviet aid needed the sufficient supplies of food and intermediate inputs at low prices from agriculture. The low share of wage goods in total value-added of the non-agricultural sector was expected to contribute to a high profit and

transfer of SOEs to the State. In addition, heavy taxation on agriculture was argued to extract resources from agriculture to the State.

Under this economic model, Vietnam's economy performed very poor in both agricultural and non-agricultural sectors. Low economic growth in non-agricultural sector was explained by the inefficiency of the system. However, other economic indicators like decreasing contribution from SOEs, high budget deficits and high inflation suggests that the poor performance of agriculture in terms of exports, food and other intermediate inputs put significant constraints on non-agricultural growth.

Empirical evidence shows that the import of capital goods was totally dependent on foreign aid in the pre-reform period. Agricultural exports, though accounted for a large share in total exports, did not contribute much to release foreign exchange constraint as the sector performed very poorly. Labor transfer from agriculture was very limited and could not become a source of non-agricultural accumulation because agricultural terms of trade in fact was relatively high, hence leading to low share of profit and transfer of SOEs to the State. This is against the usual thinking that under the centrally planned system the agricultural sector was highly squeezed through the terms of trade mechanism to finance the industrial sector. Furthermore, as agricultural tax was also very low compared to other sources of State revenue, it is likely that agriculture did not contribute any financial resource for industrialization in the pre-reform period. Internal capital accumulation, if possible, may have to come from the consumption depression on industrial workers.

In the post-reform period, the role of the State and foreign sector in financing industrialization decreased. Domestic non-budget saving became the main source to finance investment. The import of capital goods had to rely on the expansion of exports.

Under this new economic model, role of agriculture to finance industrialization, by intention of the State, was not regarded as important as in the pre-reform period. Instead, it was expected that agriculture could contribute considerable amount of foreign exchange earnings through exports to replace the previous foreign aid after the collapse of the CMEA system. The stabilization program required sufficient supplies of food from agriculture. Furthermore, the agricultural sector with more than 70 percent of population was expected to establish sizable domestic market for industrial sector in its initial stages.

With this intention, the 1989 reform to a market-oriented economy witnessed good economic performance, such as high growth rate, improvement in the volume and efficiency of investment, low budget deficits, low inflation and export expansion. Empirical evidence shows that in the new context agricultural sector just contributed to release the wage goods constraints on non-agricultural growth. Agricultural export was not as important as earlier and increasingly replaced by non-agricultural export. In fact, growth of the import of capital goods was mostly financed by non-agricultural exports as the share of agricultural exports was on the downturn. In addition, the agricultural sector did not provide significant domestic demand for industrial products as the size of the sector declined considerably. The price effect on the composition of demand for agricultural/non-agricultural goods was not as high as expected because income elasticity of demand for food was relatively low and price elasticity of demand for food was relatively high. As a result, unexpectedly agriculture made indirect contributions to capital formation in the non-agricultural sector by providing low-price wage goods to the non-agricultural sector, particularly since 1993. In addition, it is also argued that agricultural institutions may have made some capital transfer to SOEs that were mostly concentrated in the industrial sector.

The above primary investigation shows a very challenging result. In the pre-reform period, the State intended to squeeze agriculture, particularly through the terms of a trade mechanism. In fact, the empirical result shows that agricultural terms of trade were relatively high in this period, and it is likely that the agricultural sector did not make net resource contribution to the other sectors. In contrast, in the post-reform period State intention to squeeze agriculture was released. Unexpectedly agricultural terms of trade became lower compared to the pre-reform period, and the low price wage goods contributed significantly to capital formation in the non-agricultural sector. In addition, agricultural institutions may have financed some investment in industrial SOEs by transferring capital through the financial system. Such primary results required further investigation on the ISRFs in the next chapters:

1. Did the direction of ISRFs really change (from net resource inflows to agriculture to net resource outflows from agriculture) from the pre- to post-reform periods?

2. Was it reasonable to explain changes in the direction of ISRFs between the two periods by differences in agricultural growth performance alone?
3. Why were agricultural terms of trade low in the post-reform period, compared to those in the pre-reform period?
4. What were other mechanisms affecting the changes in ISRFs?

Appendix of Chapter 5

Table V.A.1.
Macroeconomic Indicators, 1976-2000

(bil. new VNDs, current prices)

Year	GDP*	GDP	Con- sumption	Export	Import	Total	Investment				Saving				Current Transfer	Capital Transfer
							Budget	Non- Budget	SOEs	Domestic Private	FDI	Gross	Domestic	Budget	Non- Budget	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1976	56249.9	1.9	2.0	0.1	0.6	0.4	0.4	0.1	0.1	0.0	0.0	0.3	-0.1	-0.1	0.0	0.4
1977	60012.7	2.1	2.2	0.2	0.6	0.5	0.3	0.1	0.1	0.0	0.0	0.2	-0.1	0.0	-0.1	0.3
1978	61724.4	2.5	2.6	0.2	0.7	0.5	0.4	0.1	0.1	0.0	0.0	0.2	-0.1	0.0	-0.2	0.3
1979	59883.4	2.8	3.0	0.1	0.7	0.5	0.4	0.1	0.1	0.0	0.0	0.3	-0.2	0.0	0.0	0.1
1980	56480.4	3.3	3.5	0.2	0.7	0.5	0.3	0.1	0.1	0.0	0.0	0.4	-0.2	-0.2	0.0	0.5
1981	57325.2	7.5	8.0	0.5	1.7	0.9	0.5	0.4	0.4	0.0	0.0	0.0	-0.5	-0.5	0.0	0.6
1982	61959.8	16.2	16.7	1.1	3.0	1.6	1.4	0.6	0.6	0.0	0.0	1.1	-0.5	-0.7	0.2	1.6
1983	66288.0	21.4	22.4	2.2	5.4	2.8	1.9	0.9	0.9	0.0	0.0	0.6	-1.0	0.0	-1.0	1.6
1984	73016.2	33.6	34.0	2.6	7.1	4.8	2.7	2.2	2.2	0.0	0.0	1.1	-0.4	0.7	-1.2	2.9
1985	77319.0	117.0	117.0	9.0	24.0	14.0	10.7	3.3	-0.7	4.0	0.0	6.4	0.0	-4.9	4.9	8.6
1986	79514.6	599.0	592.0	40.0	90.0	75.0	38.0	6.9	30.2	0.0	0.0	4.8	7.0	1.0	6.0	-2.2
1987	82402.0	2870.0	2879.0	172.0	425.0	421.0	120.0	301.0	102.3	198.7	0.0	19.4	41.0	-14.0	55.0	274.6
1988	87358.3	15420.0	14925.0	1050.0	2756.0	2214.0	673.0	1485.7	507.1	978.6	55.4	311.6	495.0	-401.0	896.0	-183.4
1989	91444.4	28093.0	27096.0	6700.0	9657.0	4114.0	1626.0	1928.5	245.9	1682.6	559.5	2793.0	997.0	-439.0	1436.0	1796.0
1990	96102.9	41955.0	40736.0	11084.0	14960.0	6025.0	2124.0	3111.7	298.1	2813.7	789.3	3557.0	1219.0	-3.0	1222.0	2338.0
1991	101685.5	76707.0	68959.0	23714.0	27639.0	11506.0	2135.0	7725.6	2237.3	5488.4	1645.4	9886.0	7748.0	1355.0	6393.0	2138.0
1992	110532.0	110532.0	95314.0	38405.0	42921.0	19498.0	6450.0	8953.4	393.8	8599.6	4094.6	18103.0	15218.0	4723.0	10495.0	2885.0
1993	119460.8	140258.0	116719.0	40286.0	52582.0	34020.0	9600.0	15847.0	5368.8	10478.2	8573.0	28032.0	23539.0	4053.0	19486.0	4493.0
1994	130013.6	178534.0	148037.0	60725.0	77591.0	45483.0	11715.0	19941.2	5705.0	14236.2	13826.8	37869.0	30497.0	9805.0	20692.0	7372.0
1995	142418.2	228892.0	187233.0	75106.0	95925.0	62131.0	12079.0	29983.7	11717.2	18266.5	20068.3	52346.0	41659.0	12135.0	29524.0	10142.0
1996	155719.3	272037.0	252321.0	111177.0	141016.0	76450.0	15630.0	38955.3	18925.4	20029.9	21864.7	55897.0	46806.0	16286.0	30520.0	20745.0
1997	168413.1	313624.0	250584.0	135180.0	160706.0	88754.0	19482.0	41580.8	23208.7	18372.1	27780.0	67851.0	63040.0	13235.0	49805.0	4811.0
1998	178121.1	361016.0	283444.0	161910.0	188281.0	104875.0	20514.0	58247.1	36118.5	22128.6	26218.8	86280.0	77572.0	18625.0	58947.0	8708.0
1999	186622.4	399942.0	301690.0	199836.0	211254.0	109017.0	29697.0	59478.9	37457.5	22021.4	19841.1	99328.0	98252.0	23335.0	74917.0	10076.0
2000	199230.2	444139.0	324258.0	241401.0	251747.0	130827.0	33564.0	72929.2	47417.9	25511.3	24333.8	-	119881.0	26176.0	93705.0	-

*/ 1992 prices

Source: Data in Column 1 are estimated by using GDP deflator of 1992 from Table VI.5. Data in Columns 2, 3, 4, 5, 6, 7, 12, 13 and 16 are from Tables VI.A.1 and VI.A.2. Data in Column 17 is the balance of current account, which is equal to the sum of trade balance, net factor payment from abroad and net current transfer from abroad. Data in Columns 7 and 14 are from Table V.A.2, Column 10 and the difference between Columns 8 and 9. Data in Column 15 are the residual between Columns 13 and 14. Data in Columns 8, 9, 10 and 11 for 1976-98 are estimated from GSO (2000d, Tables 183, 196: 336, 350), for 1999-2000 from GSO (2001a, Table 166: 343).

Table V.A.2.

State Budget Operation, 1976-2000

(bil. new VNDs, current prices)

Year	Revenue					Expenditure				Balance		Foreign Finance		Domestic Finance	
	Total	Tax		Trade	SOEs	Non-Tax		Total	Current	Capital	Interest	Grant	Loan		
		Ag.	Non-Ag.			Joint-Venture	Others								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1976	0.5	0.02	0.04	0.00	0.4	0.0	0.0	0.9	0.6	0.4	0.0	-0.4	0.4	0.0	0.0
1977	0.6	0.02	0.05	0.00	0.5	0.0	0.0	0.9	0.9	0.3	0.0	-0.3	0.3	0.0	0.0
1978	0.7	0.03	0.04	0.00	0.5	0.0	0.1	1.0	0.6	0.4	0.0	-0.3	0.3	0.0	0.0
1979	0.7	0.03	0.05	0.00	0.5	0.0	0.1	1.2	0.8	0.4	0.0	-0.5	0.4	0.0	0.1
1980	0.7	0.04	0.08	0.00	0.5	0.0	0.1	1.2	0.9	0.3	0.0	-0.5	0.5	0.0	0.0
1981	1.7	0.06	0.23	0.02	0.4	0.0	1.1	2.7	2.2	0.5	0.0	-0.9	0.6	0.0	0.4
1982	4.0	0.25	0.45	0.03	3.0	0.0	0.3	6.1	4.7	1.4	0.0	-2.1	1.6	0.0	0.5
1983	5.9	0.3	0.9	0.1	4.2	0.0	0.4	7.8	5.9	1.9	0.0	-1.9	1.6	0.0	0.3
1984	9.6	0.4	1.2	0.2	6.8	0.0	0.9	11.5	8.9	2.7	0.0	-1.9	1.5	0.0	0.4
1985	19.0	0.7	1.9	0.4	14.7	0.0	1.2	34.6	23.9	10.7	0.0	-15.6	6.4	0.0	9.3
1986	83.0	4.0	8.0	6.0	60.0	0.0	5.0	120.0	82.0	38.0	0.0	-37.0	0.0	14.0	23.0
1987	379.0	12.0	38.0	17.0	285.0	0.0	27.0	513.0	393.0	120.0	0.0	-134.0	0.0	43.0	92.0
1988	1740.0	136.0	184.0	131.0	1110.0	0.0	179.0	2814.0	2141.0	673.0	0.0	-1074.0	0.0	370.0	467.0
1989	3899.0	308.0	428.0	363.0	2244.0	0.0	556.0	6012.0	4338.0	1626.0	48.0	-2113.0	0.0	414.0	1700.0
1990	6153.0	298.0	667.0	733.0	3620.0	0.0	835.0	8590.0	6136.0	2124.0	310.0	-2437.0	0.0	1264.0	1173.0
1991	10083.0	707.0	1008.0	1099.0	6189.0	0.0	1080.0	11513.0	8728.0	2135.0	650.0	-1430.0	270.0	767.0	393.0
1992	20175.0	1294.0	1992.0	2194.0	11913.0	0.0	2782.0	22902.0	15452.0	6450.0	1000.0	-2727.0	848.0	2673.0	-794.0
1993	29679.0	1350.0	3364.0	6398.0	15322.0	225.0	3020.0	36936.0	25626.0	9600.0	1710.0	-7257.0	1017.0	3726.0	2514.0
1994	40926.0	1107.0	4512.0	10012.0	20558.0	1215.0	3522.0	43930.0	31121.0	11715.0	1094.0	-3004.0	1200.0	240.0	1565.0
1995	51750.0	1552.0	6419.0	13273.0	21938.0	2131.0	6437.0	54589.0	39615.0	12079.0	2895.0	-2839.0	1620.0	-1490.0	2709.0
1996	60845.0	1902.0	8103.0	15105.0	25887.0	2992.0	6856.0	62889.0	44559.0	15630.0	2700.0	-2044.0	1543.0	-50.0	552.0
1997	62586.0	1697.0	8352.0	13546.0	27149.0	3799.0	8043.0	70749.0	49351.0	19482.0	1916.0	-8163.0	2586.0	192.0	5205.0
1998	70822.0	1956.0	8869.0	16323.0	28911.0	4240.0	10523.0	74761.0	52197.0	20514.0	2050.0	-3939.0	2143.0	2005.0	-209.0
1999	76128.0	1973.0	9142.0	20813.0	32114.0	3874.0	8212.0	84887.0	52793.0	29697.0	2397.0	-8759.0	2361.0	4837.0	1491.0
2000	88764.0	1776.0	9079.0	18958.0	44994.0	4736.0	9221.0	99301.0	62588.0	33564.0	3149.0	-10537.0	1900.0	4202.0	7835.0

Source: Data are taken from Harvie and Tran, V.H. (1997: 42) for 1976-85, World Bank (1995a, Appendix, Tables 5.1 and 5.2A) for 1986-91, World Bank (1999, Appendix, Tables 5.1 and 5.2A) for 1992-95 and World Bank (2001, Appendix, Tables 5.1 and 5.2A) for 1996-2000.

Table V.A.3.
Revenue Sources of State Bank, 1976-86

Year	(percent)			
	Commercial Sale	Service	SOE Transfer	Household Deposits
	1	2	3	4
1976	72.0	4.9	5.4	9.9
1977	72.2	5.9	5.3	10.3
1978	71.8	6.9	4.5	11.3
1979	69.7	7.0	6.3	10.5
1980	65.7	7.0	9.8	10.6
1981	70.6	6.3	11.9	5.8
1982	72.1	5.7	11.9	4.9
1983	68.0	5.7	15.1	5.5
1984	70.9	4.7	11.9	4.3
1985	73.0	4.0	8.2	5.2
1986	77.5	3.5	9.0	4.6

Note: Under the centrally planned system, the State Bank also played the role as the Treasury for the State, hence it managed all revenue of State trading agencies and SOEs. Data in Column 1 are share of money transferred from State trading agencies. Data in Column 2 are share of income generated from banking services. Data in Column 3 are required transfer from SOEs. Data in Column 4 are deposits held by private household sector.

Source: Data are taken from GSO (1982, Table 18: 36) for 1976-79, from GSO (1987, Table 23: 30) for 1980-86.

Table V.A.4.
Composition of Total Export, 1976-2000

(mil. Rub-USD, current prices)

Year	Total	Heavy Ind.& Mining	Light Ind.& Handicraft	Agriculture	Forestry	Fishery
1976	223	36	86	75	6	19
1977	323	-	-	53	-	-
1978	327	-	-	44	-	-
1979	321	-	-	82	-	-
1980	339	37	161	116	14	11
1981	401	69	161	123	19	29
1982	527	59	205	171	35	57
1983	617	46	220	234	39	78
1984	648	53	230	247	37	81
1985	696	63	236	274	41	83
1986	821	62	246	329	80	104
1987	852	45	265	356	54	132
1988	1037	67	384	349	59	178
1989	1943	355	571	742	87	188
1990	2404	617	636	783	127	239
1991	2087	697	300	628	176	285
1992	2581	955	350	828	141	308
1993	2985	1014	527	920	98	427
1994	4054	1168	938	1280	112	556
1995	5449	1378	1550	1746	154	621
1996	7256	2085	2101	2160	212	697
1997	9185	2574	3372	2231	225	782
1998	9360	2609	3428	2274	191	858
1999	11540	3576	4190	2585	218	971
2000	14308	5100	4900	2613	220	1475

Source: Data are taken from GSO (1989, Table 202: 297) for 1976, 1980-86, GSO (1990a, Table 155: 220) for 1987-88, GSO (1993, Table 129: 293) for 1989-91, GSO (1997, Table 125: 207) for 1992-95, GSO (2001a, Table 155: 275) for 1996-98 and GSO (2001a, Table 202: 401) for 1999-2000. Data for 1977-79 are estimated from GSO (1981, Table 190: 282)

Table V.A.5.
Population and Labor Force, 1976-2000

(1000 people)

Year	Population			Labor Force		
	Total	Rural	Urban	Total	Agriculture*	Non-Agriculture
	1	2	3	4	5	6
1976	49160	39033	10127	18358	12275	6083
1977	50413	40305	10108	19056	12933	6123
1978	51421	41291	10130	19894	13694	6200
1979	52462	42368	10094	20786	14390	6396
1980	53722	43421	10301	21638	15301	6337
1981	54927	44704	10223	22527	15909	6618
1982	56170	45410	10760	23548	16700	6848
1983	57373	46392	10981	24362	17418	6944
1984	58653	47551	11102	25114	18159	6955
1985	59872	48512	11360	26020	19267	6753
1986	61109	49292	11817	26636	19736	6900
1987	62452	50181	12271	27310	20179	7131
1988	63727	51065	12662	28023	20925	7098
1989	64376	51903	12473	28989	21404	7585
1990	66016	53136	12880	30286	22319	7967
1991	67243	54015	13228	30974	22483	8491
1992	68451	54863	13588	31815	23208	8607
1993	69644	55683	13961	32718	23898	8820
1994	70825	56399	14426	33664	24511	9153
1995	71995	57057	14938	34590	24122	10468
1996	73157	57737	15420	35972	24775	11197
1997	74307	57472	16835	36944	25443	11501
1998	75457	57992	17465	37877	26070	11807
1999	76597	58515	18082	35731	22726	13005
2000	77686	59066	18620	36206	22670	13536

*/ including agriculture, forestry and fishery

Source: Data in Columns 1, 2, 3 are from World Bank (2002, Appendix, Table 1.1), which is also adopted from SYBs. Data in Columns 4, 5, 6 are taken from Tran, V.T. (ed. 2000, Table 1.4: 241) for 1976-97 and from IMF (2002, Table 11: 65).

Endnotes of Chapter 5

¹ Low ICOR in the early period of the 1989 reform can be explained by two other factors. First, investment data was underreported as it could not cover investment undertaken by district authorities, agricultural cooperatives and private sector particularly in industrial and commercial small-scale activities. Second, some large investment projects that had begun during the period of Soviet aid started to be utilized after the 1989 reform (Dapice 1994: Ch.3, 12, Dollar 1992: 364-5, Fforde and de Vylder 1996: 284, World Bank 1995b: 5).

² This is reflected in the improved trade balance from a deficit of \$350 million in 1989 to \$60 million in 1992 mostly due to the slow growth of import. Western aid did not materialize to replace the loss of Soviet aid at this time (Dollar 1992: 365, 371).

³ The rationalization program in 1991 laid off around 1 million State employees. All State subsidies for State employees on food, housing and other utilities were gradually removed by the 1989 reform. In fact, the sharp increase of State current expenditure during 1993-96 was accrued to compensation for civil servants for the elimination of such in-kind payment benefits. In the late 1990s, State expenditure on social transfer drastically fell mostly due to the shift of spending from the budget to Social Insurance Fund (IMF 2002: 4, WB 1995a: 9-10).

⁴ In the early 1990s, SOEs were treated quite favorably by the State by being granted access to credit on easy terms and being allowed to negotiate their contribution to the State Treasury. This harmed stabilization efforts by increasing inflation particularly in 1990-91. It is estimated that during 1989-92 outstanding credit to SOEs exceeded 10 percent of GDP, and the subsidy element (through strongly negative real rates of interest) represented several percentage points of GDP (Fforde and de Vylder 1996: 288-9, Harvie and Tran, V.H. 1997: 69-70).

⁵ For data consistency, the structure of labor force takes the demarcation between agriculture/forestry/fishery against the other. Though GSO (2000d, Tables 1.17 and 1.18: 49-68) provides data on population and labor force of agricultural sector, the corresponding data on population and labor force of non-agricultural sector are not available. As majority of population and labor force of agriculture/forestry/fishery lives in rural area, in which agricultural sector plays dominant role, the demarcation between rural and urban as well as between agriculture/forestry/fishery and the other is believed to help the investigation of changes on employment structure.

⁶ Growth rate of agricultural labor force was higher than that of non-agricultural labor force only in 1992-93, when rationalization programs and military demobilization (at then end of military intervention in Cambodia) laid off more than 1 million State administrative staffs, SOE workers and former

soldiers. Many of them returned to agricultural sector and received allocated land following the agricultural de-collectivization.

⁷ The main purposes of these programs were to reduce high population pressure on the Red River Delta and the Central Coast and to expand area of cultivated land by land reclamation in new economic zones (Do, V.H. and Trinh, K.T. 1999: 4-5).

⁸ The 1992 GDP deflator is used for the estimate of real ISRFs, therefore the 1992 CPI is selected. The reason to choose the year of 1992 as the benchmark year will be explained in Chapter 7.

⁹ For more details, see Table VI.2, VI.A.2 and VI.A.3.

¹⁰ The succeeding comparison is selected in the years when the agricultural terms of trade in the later year were higher than those in the previous one.

¹¹ It is worth noting that agriculture still accounted for majority of population and labor force, though share of the sector in total GDP was insignificant and declining in the post-reform period. It rendered to both the drastically widening urban-rural and agriculture-non-agriculture income gap. In fact, the non-agricultural institutions generated the majority of domestic demand for industrial goods, but Engel's effect is not strong for those institutions because their income level is already high. In contrast, changes in price of food may not have significant impacts on food consumption of agricultural households since they mostly utilize self-consumption of food.

6 Estimate of the Intersectoral Resource Flows in Vietnam during 1976-2000

This chapter aims to estimate the intersectoral resource flows (ISRFs) in Vietnam during 1976-2000. First, in Section 1 it is necessary to verify the use of data to estimate the ISRFs since the direction and magnitude of ISRFs depends strongly on the quality of data. Section 2 is devoted to the readjustment of crucial variables for the estimate of ISRFs such as total output, GDP, and GDP deflators dis-aggregated by sectors. Section 3 gives the estimate of agricultural marketed surplus. In section 4, attempts will be made to estimate the financial side of ISRFs. Based on the estimated results, Section 5 will describe major trends of ISRFs in Vietnam during 1976-2000.

6.1. Data Use

The study mostly uses secondary data, which, similar to other developing countries, presents certain problems. Such problems become more serious for a country in transition like Vietnam. In 1988, Marr and White (1988: 7) observed that: ‘Today, a curious American, European, or Australian going to her local library, or even a nearby university collection, will have difficulty finding enough on domestic Vietnam since 1975 to compose a high-school essay’.

Along with the economic reform, international agency officials and experts all agree that the quantity and quality of available data has improved since 1988. Nevertheless, it is also noted that data on key economic indicators still contained serious weaknesses. In a June 1998, the UNDP warned that Vietnam ‘is in the midst of an information crisis which needs to be urgently redressed to avert financial crisis’ (quoted from GAO, 1999: 6).

It is observed that there are four major weaknesses in the secondary data available in Vietnam. *First, it is inadequate.* Before 1987, obtaining statistical data outside official channels was difficult, and the official data

that was available was quite limited. Two officially published series of economic data by the General Statistical Office (GSO) were *So Lien Thong Ke* (Statistical Data SD) and *Nien Giam Thong Ke* (Statistical Yearbook SYB). The former was used as propaganda and the latter was considered more reliable but stamped in bold 'top secret' and was used for 'internal circulation only' (Vo, N.T 1990: ix-x).

After 1987, all restrictions were lifted and data became more available as international agencies (World Bank, IMF and UNDP) also provided statistical data on their economic reports. Nevertheless, GAO (1999: 3-4) reported that there were major gaps in the availability of data such as State budget and activities of State-owned enterprises (SOEs). In addition, Vietnamese authorities did not provide standard financial information used by the IMF for its monthly *International Financial Statistics* (IFS) publication. Virtually all countries in the world, including transitional economies and the poorest countries, published their country pages in the IFS.

Second, the methods used for data collection and reporting are not transparent. When data is available, it is highly aggregated and there is no report as to how aggregate indicators are derived. Even international agencies that republish GSO figures in their report also do not disclose the methods they use to evaluate or revise the data. It is only suggested that data should be treated with caution.

Third, related to the second point, the quality of data is poor. Under the centrally planned system, the production of SOEs and cooperatives was sometimes over-reported to claim 'achievements' (McCarty, 1991: 4). Meanwhile, measurements of private activities were often underestimated. In addition, statistical personals were under-qualified (Fforde and de Vylder 1988). Even data published by international agencies also mainly came from the GSO.

Finally, data is inconsistent and discontinuous as Vietnam's statistical system has moved from the Material Product System (MPS) to System of National Account (SNA) along with the economic reform from centrally planned system to the market economy. The MPS was applied until 1992. With the assistance of UNDP, Vietnamese authorities started reporting statistical data under the framework of the SNA since 1986 (GSO 1992c, Le, V.T. 1992). Such a change causes inconsistencies between data before and after 1986.

For instance, the MPS excludes the service sector in national income while it is included in the SNA. Depreciation is included in the use of intermediate inputs within the MPS while it is accounted for in the value-added estimates in the SNA.

In addition, changes in the sectoral categorization of economic activities also brought about both data inconsistency and discontinuity. Before 1995, agriculture and forestry were reported separately, while fishery was accounted in the processing industry. After 1995, all three sectors were unified into only a single sector 'agriculture-forestry-fishery' in SYBs.

Up to 1985, the retail price index recorded changes in the prices of food and foodstuffs, other consumption goods, and intermediate inputs for agricultural production. Since 1986, the index was composed of food and foodstuffs, non-food and non-foodstuffs, and services.

Particularly, the change in the denomination of currency in 1985, when one new Vietnamese dong (VND) was exchanged for ten old VNDs, makes it difficult to ensure the reliability of data. In the SYBs for 1985-88, there is even no note on whether the figures are in old VND or new VND.

Vu, Q.H. (1991: 19) suggests that 'it would make sense to study and concentrate only on the data post-1986 or, even better, post-1988'. With such limitation of data reliability and consistency, McCarty (1991: 5) concludes, 'official Vietnamese data to 1991 can only be used in an indicative manner, that is, as little more than signs of possible or probable changes in the economy. As such, they should rarely be left to 'stand alone' to substantiate an argument or be used for economic modeling exercises'.

So, how can these problems possibly be addressed? It, obviously, depends on the scope of a specific study. The present study has two major characteristics. First, it covers a long period of 1976-2000, and, hence, requires the consistency and continuity of data in conjunction with the economic reform. Second, the estimate of the ISRFs requires highly disaggregated data, particularly the sectoral distinction between agriculture and non-agriculture. With the existing availability of secondary data in Vietnam, it is impossible to ensure the validity of an absolute measurement. As GAO (1999) suggests, data from international agencies cannot avoid this shortcoming either. Therefore, the present study just attempts to show the tendency of changes in concerning variables. Hence, within its own scope, the present study tries to ensure the consistency, continu-

ity, and dis-aggregation of data. This, in turn, requires the application of the two following rules:

First, the data from GSO is the major source of estimates to ensure consistency and continuity. Data from international agencies like World Bank, IMF, UNDP and ADB are discontinuous and estimated by different methods, and are, therefore, inappropriate. Nevertheless, it is worth noting that even data published by GSO before 1992 are not consistent and continuous either.

Fortunately, the improvement of the statistical system recently has produced valuable reports that guarantee the consistency of data. Four books, which delineate clear methods of data collection and reporting, are considered the most appropriate for macro data: *System of National Accounts of Vietnam 1986-90* (GSO 1992c – which adjusts the national income of MPS to GDP of SNA and includes an Input-Output Table and specific accounts of SNA for 1989), *Kinh Te Viet Nam 1955-2000: Tinh Toan Moi, Phan Tich Moi* [Vietnam's Economy 1955-2000: New Measurement, New Analysis] (Tran, V.T. 2000 – which shows a clear method of estimating GDP at both current and constant price for both the North and the South of Vietnam during 1955-2000), *Statistical Data of Vietnam Socio-Economy 1975-2000* (GSO 2000c – which has a rich content of all indicators of socio-economic statistics during 1975-2000), and *Kinh Te Viet Nam Trong Nhung Nam Doi Moi* [Vietnam's Economy in the Years of Reform] (GSO, 2000a – which contains all accounts under SNA for 1990-2000 and an Input-Output Table for 1996). Such books, however, still lack some necessary indicators like money supply and disbursement of foreign direct investment (FDI). In this case, the study will have to look for data from other sources with serious caution or extrapolation will be used.

Second, the dis-aggregation of data requires the use of all available sources of statistics. Nevertheless, it is necessary to compare different sources of data to ensure the consistency. Data with the clearest methods of collection are selected. In addition, micro data from GSO surveys is more favored¹.

6.2. Estimate of GDP and GDP Deflator

Three important indicators, which are necessary for the estimate ISRFs, are gross output (Q), gross domestic product or value-added (GDP), and GDP deflators dis-aggregated by sectors. The two former indicators are

needed to determine the extent to which the agricultural sector has been squeezed or enhanced. The last indicator is required to estimate the invisible transfers between sectors through changes in relative prices. In addition, all indicators should be dis-aggregated between agriculture and non-agriculture.

As suggested in Chapter IV, the sectoral demarcation should reflect both the accounting equality between the commodity and financial sides of ISRFs, and the relation between the peasantry, the State, and the industrial workers. The study selects the distinction between agricultural and non-agricultural activities. In Vietnam's statistical yearbooks (SYBs), figures are often aggregated for agriculture, forestry and fishery. Most forestry activities have been under the control of State-owned forestry farms and fishery includes many activities of the processing industry. Therefore, they should be excluded from the agricultural sector. This raises the need to decompose figures on agriculture (including mainly crops and husbandry, where most of activities have been conducted by the peasantry) from those on fishery and fishery.

Table VI.1.
Agricultural NI and GDP, 1976-85

Year	(current price, mil. new VNDs)				
	NI _a	NI _f	NI _a /NI _{af}	GDP _{af}	GDP _a
	1	2	3 = 1/(1+2)	4	5 = 3*4
1976	660	7	0.99	760	752
1977	663	10	0.99	770	758
1978	852	12	0.99	970	957
1979	1043	10	0.99	1060	1050
1980	1326	10	0.99	1460	1449
1981	3304	11	1.00	3520	3508
1982	7080	49	0.99	7410	7359
1983	8925	78	0.99	9390	9309
1984	13560	119	0.99	14340	14216
1985	35738	415	0.99	47000	46460

Source: Data in Columns 1 and 2 for 1976-84 is from GSO (1985a, Table. 25: 41-2), and for 1985 from GSO (1991b, Table. 15: 22). Data in Column 4 is from Tran, V.T. (ed. 2000, Table 7.14: 296-7).

Another major problem for the estimation of ISRFs in general and GDP, classified by sector in particular, is the change from Material Product System (MPS) to System of National Account (SNA) in 1992. In MPS, only the production of material goods is included in Q and national income (NI) and most of service sector is excluded. In addition, NI does not include capital depreciation that is accounted in the use of intermediate inputs. Meanwhile, SNA takes into account production of both goods and services in Q and GDP; and GDP or value-added includes capital depreciation. Some international agencies like World Bank and UNDP, basing their numbers on NI, tried to estimate GDP in Vietnam before 1992 by multiplying NI by 1.18 (0.13 higher proportion accounts for service sector and 0.05 for capital depreciation) (Tran, V.T. *ed.* 2000: 91). This is quite arbitrary and not creditable. Recent publications of GSO (2000b, 2000d) and Tran, V.T. (*ed.* 2000) show a clear methodology for the estimate of GDP, hence those sources of data are selected.

In GSO (2000b), there is data on GDP classified into agriculture and non-agriculture for 1986-99. From same source of data, Tran, V.T. (*ed.* 2000) estimates GDP for the period of 1955-99. Nevertheless, it combines both agriculture and forestry into a single activity². Hence, it is necessary to distinguish between agriculture and forestry on such GDP data gathered before 1985. The pre-1985 SYBs have data on NI of agriculture (NI_a) and forestry (NI_f). Assuming that agriculture and forestry have had the same proportion of service activities and capital depreciation in the GDP, agricultural GDP is estimated by the formula (Table VI.1):

$$GDP_a = \frac{NI_a}{NI_a + NI_f} \times GDP_{af} \quad (VI.1)$$

where GDP_a is agricultural GDP and GDP_{af} is the GDP of both agriculture and forestry.

Such estimates calculate GDP at current price, nominated in 'new' VNDs (Table VI.2)³. Nonetheless, it is necessary to estimate GDP at constant prices to point out the tendency of economic growth and to calculate GDP deflators, which are important figures in the estimation of the terms of trade between agriculture and non-agriculture. GSO (2000b: 50-64) shows the GDP for the 1986-99 period classified into agriculture

and non-agriculture and calculated 1994 prices. There is no available data on GDP at constant prices before 1985. Instead, there was only data on NI at 1970 prices for 1976-82 and NI at 1982 prices for the period of 1982-92. From these data, one may calculate the growth indexes (**g**) for 1976-85 from NI (Table VI.3). As the service sector counted for an insignificant share in total production before 1985, Tran, V.T (ed., 2000: 95) suggests that growth indexes from NI can represent those of GDP. Hence, GDP of 1985 at 1994 prices can be calculated as:

$$GDP_a^{1985} (1994 \text{ prices}) = \frac{GDP_a^{1986} (1994 \text{ prices})}{g \text{ of } GDP_a^{1985-1986} (1982 \text{ prices})} \quad (VI.2)$$

$$GDP_n^{1985} (1994 \text{ prices}) = \frac{GDP_n^{1986} (1994 \text{ prices})}{g \text{ of } GDP_n^{1985-1986} (1982 \text{ prices})} \quad (VI.3)$$

$$\text{Total } GDP^{1985} (1994 \text{ prices}) = GDP_a^{1985} (1994 \text{ prices}) + GDP_n^{1985} (1994 \text{ prices}) \quad (VI.4)$$

Table VI.2.
GDP of Agriculture and Non-Agriculture, 1976-2000

Year	(current prices, mil. new VNDs)		
	Total GDP	GDP _a	GDP _n
	1	2	3 = 1 - 2
1976	1930	752	1178
1977	2070	758	1322
1978	2470	957	1063
1979	2840	1050	1690
1980	3300	1449	1851
1981	7490	3508	3982
1982	16230	7359	8871
1983	21390	9309	12081
1984	33610	14216	19394
1985	117000	46460	70540
1986	599000	185000	414000
1987	2870000	947000	1923000
1988	15420000	5941000	9479000
1989	28093000	9924000	18165000
1990	41955000	13721000	28234000
1991	76707000	27061000	51646000
1992	110532000	32432000	78100000
1993	140258000	35836000	104420000
1994	178534000	41839000	136695000
1995	228892000	52713000	176116000
1996	272037000	61048000	210989000
1997	313624000	65883000	247741000
1998	361016000	76170000	284846000
1999	399942000	83336000	316607000
2000	444139000	88409000	355730000

Source: Data in Column 1 for 1976-99 is from Tran, V.T. (ed. 2000, Table 7.14: 296-7), and for 2000 from GSO (2001b, Table. 28: 71-2). Data in Column 2 for 1976-85 is from Table VI.1, Column 5, for 1986-99 from GSO (2000b: 19-34), for 2000 from GSO (2001a, Table. 28: 71-2).

Table VI.3.
Growth of NI, 1976-86

Year	(previous year = 100)		
	Total NI	NI _a	NI _n
	1	2	3
1976	-	-	-
1977	105.3	99.4	109.9
1978	101.1	93.5	106.5
1979	98.2	104.2	94.6
1980	96.4	105.8	90.0
1981	102.3	104.4	100.2
1982	108.8	110.6	106.9
1983	107.1	107.5	106.7
1984	108.3	104.1	113.1
1985	105.7	105.2	106.2
1986	102.8	103.1	102.7
Memo: GDP 1986 at 1994 prices (mil. new VNDs)	109189000	33536000	75653000

Source: Growth indexes of 1977-80 are calculated at 1970 prices, adopted from GSO (1985a, Table 25: 41-2). Growth indexes of 1981-85 are calculated at 1982 prices, adopted from GSO (1987, Tables 18, 19: 26, 27). Growth index of 1986 is calculated at 1994 price, taken from GSO (2000b: 65).

Data for the 1976-84 period is also calculated by the same method (Table VI.3). Then from data of the GDP at current and constant prices, the GDP deflators for the entire economy and for each sector can be calculated (Tables VI.4 and VI.5).

Table VI.4.
GDP of Agriculture and Non-Agriculture, 1976-2000

(1994 prices, mil. new VNDs)

Year	Total GDP	GDP _a	GDP _n
	1 = 2+3	2	3
1976	77241969	23358529	53883440
1977	82409180	23217635	59191545
1978	84759675	21710495	63049180
1979	82231518	22615633	59615885
1980	77558656	23922105	53636551
1981	78718689	24963553	53755136
1982	85082752	27615931	57466821
1983	91026430	29691026	61335403
1984	100265420	30911900	69353520
1985	106174068	32515028	73659040
1986	109189000	33536000	75653000
1987	113154000	32931000	80223000
1988	119960000	33690000	86270000
1989	125571000	35513000	90058000
1990	131968000	35717000	96251000
1991	139634000	36285000	103349000
1992	151782000	39051000	112731000
1993	164043000	40428000	123615000
1994	178534000	41839000	136695000
1995	195568000	43658000	151910000
1996	213833000	45652000	168181000
1997	231264000	47915000	183349000
1998	244595000	49639000	194956000
1999	256269000	52370000	203899000
2000	273582000	54512000	219070000

Source: Data for 1986-99 is from GSO (2000b: 50-64), and for 2000 from GSO (2001a, Table. 30: 75-6). Data for 1976-85 is estimated by using GDP of 1986 at 1994 prices and growth indexes of 1977-86 in Table VI.3.

Table VI.5.
GDP Deflators, 1976-2000

(1994 = 100)

Year	Total	Agriculture	Non-Agriculture
	1	2	3
1976	0.0025	0.0032	0.0022
1977	0.0025	0.0033	0.0022
1978	0.0029	0.0044	0.0024
1979	0.0035	0.0046	0.0030
1980	0.0043	0.0061	0.0035
1981	0.0095	0.0141	0.0074
1982	0.0191	0.0266	0.0154
1983	0.0235	0.0314	0.0197
1984	0.0335	0.0460	0.0280
1985	0.1102	0.1429	0.0958
1986	0.5486	0.5516	0.5472
1987	2.5364	2.8757	2.3971
1988	12.8543	17.6343	10.9876
1989	22.3722	27.9447	20.1748
1990	31.7918	38.4159	29.3337
1991	54.9343	74.5790	48.0372
1992	72.8229	83.0504	69.2800
1993	85.5008	88.6415	84.4736
1994	100.0000	100.0000	100.0000
1995	117.0396	120.7408	115.9759
1996	127.2189	133.7247	125.4529
1997	135.6125	137.4997	135.1194
1998	147.5979	153.4479	146.1084
1999	156.0637	159.1293	155.2764
2000	162.3422	162.1826	162.3819

Source: Calculated from Tables VI.2 and VI.4.

Table VI.6.
Proportion of Intermediate Inputs in Total Output, 1976-85
 (percent)

Year	α_i of Q	α_i of Q_a
	1	2
1976	44.8	28.9
1977	45.7	28.4
1978	43.5	26.2
1979	42.2	25.9
1980	39.9	24.8
1981	40.2	26.4
1982	44.3	28.1
1983	46.2	30.2
1984	47.1	29.8
1985	47.9	31.6

Source: Data for 1976-82 period is from GSO (1983, Table 28: 70) and calculated at current prices. Data for 1983-85 period is from GSO (1987, Tables 17, 19: 25, 27) calculated at 1982 prices, hence it requires adjustment to current prices by using GDP deflator from Table VI.5.

Table VI.7.
Gross Output Classified by Sectors, 1976-2000
 (current prices, mil. new VNDs)

Year	Q	Q _a	Q _n
	1	2	3
1976	3496	1058	2439
1977	3812	1059	2753
1978	4372	1297	3075
1979	4913	1417	3496
1980	5491	1927	3564
1981	12525	4766	7759
1982	29138	10235	18903
1983	39744	13329	26415
1984	63568	20239	43329
1985	224374	67885	156489
1986	1028496	235200	793296
1987	4864071	1232500	3631571
1988	26042207	7751600	18290607
1989	48997673	13382500	35615173
1990	73300837	20666500	52634337
1991	140689212	41892600	98796612
1992	202269645	49061100	153208545
1993	263858985	53929200	209929785
1994	346355863	64876800	281479063
1995	456745236	85507600	371237636
1996	550416259	95385801	455030458
1997	612099000	98852000	513247000
1998	692013000	113269000	578744000
1999	765521000	126902523	638618477
2000	852159900	134627594	717532306

Source: Data on Q and Q_a for the 1976-85 period is estimated by respectively multiplying GDP and GDP_a (from Table VI.2) with $1/(1-a_i)$ (from Table VI.6). Q_n for 1976-85 period is the residual between Q and Q_a. Data on Q_a for the 1986-95 period is taken from GSO (2000d, Table 37: 81) and for the 1996-99 period from GSO (2000b: 80-94, 248-52). Data on Q for the 1986-90 period is estimated by multiplying GDP with $1/(1-a_i)$, where a_i is available from GSO (1992a, Table 6: 69). Data on Q_n for 1986-90 is the residual between Q and Q_a. Data on Q_n for the 1991-95 period is estimated by multiplying GDP_n with $1/(1-a_i)$, where a_i is extrapolated by using the indicators of 1990 and 1996: $a_i^t = a_i^{t-1} + (a_i^{1996} - a_i^{1990})/6$. Data on Q for 1991-95 period is the sum of Q_a and Q_n. Data on Q for 1996-99 is available from GSO (2000b: 80-94, 248-52). Data on Q_n for 1996-99 is the residual between Q and Q_a. Data for 2000 is estimated by multiplying GDP of 2000 with $1/(1-a_i)$ of 1999.

Data of agricultural output (Q_a) at current prices is available for the 1986-2000 period. For the period of 1976-85, these figures can be obtained if the share of intermediate inputs in the total output is known. In MPS, there is data on the material use of inputs in production (Table VI.6). It is different from SNA in terms of including capital depreciation and excluding the use of intermediate services. As the use of services and capital depreciation consists of small components in Q_a , one may assume that they cancel each other out. Another problem with the data from 1976 to 1985 is the aggregation of both agriculture and forestry into a single sector. Assuming that agriculture and forestry share the same proportion of intermediate use in their gross output, Q_a can be estimated from the data on GDP_a and the use of intermediate inputs in agricultural production. Q_n for the 1976-85 period is the residual between total Q and Q_a .

For the period of 1986-99, the data is available on Q_a for the entire period and total Q for 1986-90 and 1996-99. Thus, Q_n can be estimated as the residual between Q and Q_a . For other years, Q_{na} is estimated by using data on GDP_n and the extrapolated proportion of intermediate use in Q_n . Total Q will be equal to the sum of Q_a and Q_{na} (Table VI.7).

Before continuing further, it is also worth noting that three price systems are applied in Vietnam's statistics, i.e.: basic, producer, and purchaser prices.

Value of production at basic prices	=	Cost of production	+	Profit mark-up
Value of production at producer prices	=	Value of production at basic prices	+	Production tax
Value of production at purchaser prices	=	Value of production at producer prices	+	Marketing margin

Basic prices are only applied in I-O Tables. Purchaser prices are used to calculate retail trade and output of the entire economy. Most of economic indicators like GDP, Q of each industry, investment, saving, etc., are calculated at producer prices. Therefore, the ISRFs also need to be estimated at producer prices for comparability.

6.3. The Commodity Side of ISRFs

On the commodity side of ISRFs, only the sale of agricultural goods can be estimated because there is discontinuity in the data for an estimate of the purchases by the agricultural sector. Such purchases, however, can be obtained if the balance of trade between the two sectors, which also can be estimated from the financial side, is known. Yet, this estimate should be made with caution, considering that the sectoral re-demarcation or estimation bias may lead to incorrect interpretations of the direction and magnitude of ISRFs. Therefore, the study reserves Appendix VI.2 of this chapter to justify the estimated results of the ISRFs.

For the sale of agricultural goods (or agricultural marketed surplus - X_a), the method of estimation is different between the two periods of 1976-88 and 1989-2000 as there were changes in both the agricultural trading system and in the methods of data collection on agricultural trade. During 1976-88, most of X_a was procured by the State trading agencies, and there was data on such procurement. Along with the economic reform since 1989, the sales of agricultural goods took place in the free markets and they were not reported. Instead, there were two coherent Input-Output tables for 1989 and 1996, and corresponding living standards surveys for some years, which can be used for the estimate of X_a .

During 1979-88, X_a consisted of: (i) delivery in kind from State farms and cooperatives to the State; (ii) compulsory sales by State farms, cooperatives, and peasant households to the State at administrative prices; (iii) sales by State farms, cooperatives, and peasant households to the State at negotiated prices; and (iv) sales by State farms, cooperatives, and peasant households to the non-agricultural sector in the parallel markets. Vietnamese statistics provide the value of the first three items, without any decomposition, at the producer prices. As the entire transfer of agricultural goods to non-agriculture should be estimated at the producer prices, the sales in the parallel markets are estimated by multiplying the share of trade outside the control of the State over total value of domestic trade on agricultural products.

Table VI.8.
Delivery of Agricultural Goods to the State, 1976-88
 (current prices, mil. new VNDs)

Year	Total Delivery			o/w Agricultural Tax
	Total	Food	Others	
	1 = 2+3	2	3	4
1976	143	65	78	20
1977	122	53	69	23
1978	159	64	94	28
1979	158	64	94	29
1980	324	162	162	44
1981	1074	612	462	61
1982	2048	1109	940	249
1983	3146	1459	1687	317
1984	5761	2126	3635	434
1985	12069	3848	8222	679
1986	56705	15900	40805	4000
1987	273645	97300	176345	12000
1988	1317978	662200	655778	136000

Source: Data in Columns 1, 2, and 3 for 1976-85 from GSO (1987, Table 148: 219), for 1987-88 from GSO (1991b, Table 141: 203). In such SYBs, data on procurement by State trading agencies includes both agricultural and forestry products. Therefore, procurement of agricultural goods is estimated by multiplying procurement of both agricultural and forestry goods with share of agriculture over total GDP of both agriculture and forestry (from Table VI.1 - Column 3). Data in Column 4 for 1976-85 is from GSO (1988) adopted by Harvie and Tran, V.H. (1997, Table 3.4: 42), for 1986-88 from WB (1995a, Appendix, Tables 5.1, 5.2A).

During 1976-88, the first three items in X_a was reported as the procurement of agricultural goods by State trading agencies (official market), which included purchases for final consumption, purchases of intermediate inputs for industrial enterprises, purchases for export, and also the delivery from State farms plus in-kind agricultural taxes provided by agricultural cooperatives (GSO, 1987: 219, 355). This procurement is shown in Table VI.8.

Table VI.9.
Share of State and Private Sectors in Agricultural Retail Trade, 1976-88

Year	Retail Trade of Ag. Goods Classified by Markets		Total Retail Trade in Unofficial Mar- kets Classified by Sectors		Retail Trade of Ag. Goods Classified by Sec- tors	
	Official	Unofficial	State	Private	State	Private
	1	2	3	4	5 = (1+2*3)%	6 = 2*4%
1976	44	56	42	58	68	32
1977	44	56	43	57	68	32
1978	44	56	41	59	67	33
1979	43	57	43	57	67	33
1980	40	60	44	56	66	34
1981	49	51	44	56	71	29
1982	45	55	45	55	70	30
1983	51	49	46	54	74	26
1984	52	48	46	54	74	26
1985	68	32	51	49	85	15
1986	69	31	55	45	86	14
1987	-	-	-	-	51	49
1988	-	-	-	-	41	59

Source: Data in Columns 1 and 2 for 1978-79 is from GSO (1981, Table 176: 265), for 1980-82 from GSO (1983, Table 193: 302), for 1984-84 from GSO (1985a, Table 185: 261), for 1985-86 from GSO (1987, Table 166: 243). Data in Columns 1 and 2 for 1976-77 takes the same proportion as those of 1978. Data in Columns 3 and 4 is from GSO (1987, Table 163: 240). Data in Columns 5 and 6 for 1987-88 from GSO (1993, Table 123: 84).

Table VI.10.
Agricultural Marketed Surplus, 1976-88
 (current prices, mil. new VNDs)

Year	Delivery to the State	Agricultural Export			Delivery to the State for Domestic Use	Private/State Ratio in Domestic Ag. Trade	Sales to Private Sector	Xa
		In mil. VNDs	In mil. Rubles-US\$	Ex. Rate (VNDs/R-US\$)				
	1	2 = 3*4	3	4	5 = 1-2	6	7 = 5*6	8 = 1+7
1976	143	20	75	0.27	123	0.48	59	203
1977	122	14	53	0.26	108	0.47	50	172
1978	159	10	44	0.23	148	0.48	72	230
1979	158	18	82	0.22	140	0.48	68	226
1980	324	26	116	0.22	298	0.51	152	476
1981	1074	69	123	0.57	1004	0.40	401	1475
1982	2048	161	171	0.94	1888	0.43	809	2858
1983	3146	230	234	0.99	2916	0.36	1046	4192
1984	5761	280	247	1.13	5481	0.35	1914	7675
1985	12069	322	274	1.17	11748	0.18	2139	14208
1986	56705	4938	329	15.00	51767	0.16	8450	65154
1987	273645	93904	356	263.85	179741	0.97	173934	447579
1988	1317978	130426	349	373.50	1187552	1.42	1683734	3001712

Source: Data in Column 1 is from Table VI.8 – Column 1. Data in Column 2 for 1976, 1980-86 is from GSO (1989, Table 202: 297), for 1977-79 from GSO (1981, Table 190: 282). Data in Column 2 includes export of both primary and processing products of agricultural goods. GSO (1981, Table 190: 282) provides data on export of only primary agricultural products for 1977-79, hence data for 1977-79 need to be adjusted, according to share of primary over total export of agricultural goods in 1976. Data in Column 3 from Tran, V.T. (ed., 2000, Table 4.8: 270), according to Vietnam's Bank for Foreign Trade (VIETCOMBANK). For sake of simplicity, 1 ruble is considered to be equal to 1 US\$. Exchange rate is the average between selling and buying prices of US\$ offered by VIETCOMBANK, except in 1986 when there is only availability of selling price of US\$ from Tran, V.T (ed., 2000). Data in Column 6 is calculated from Table VI.9 – Columns 5 and 6.

To estimate the sale of agricultural goods in the free, or unofficial markets (Tables VI.9 and VI.10), the sale of agricultural goods to State trading agencies for domestic use needs to, first, be estimated by deducting the external exports of agricultural goods from total delivery of agricultural goods to the State⁴. Retail trade of agricultural goods in unofficial markets was carried out by both the State and by the private sectors.

Hence, the share of the private sector in the unofficial market needs to be estimated.

Here, the assumption is that the share of the private sector in unofficial retail trade of agricultural goods is the same as that of the total unofficial retail trade. Such methods may underestimate the actual sale of agricultural goods by the private sector as agricultural exports are reported in retail, or purchaser, prices. Nevertheless, this method may be justified as there are two sources of overestimation of X_a : (i) the VND was overvalued under the centrally planned system, so the value of the agricultural export in VNDs was underestimated, and, hence, the sale of agricultural goods by the private sector as well as the entire sale of agricultural goods are overestimated; (ii) the estimating method does not take into account the purchases of agricultural goods by the agricultural sector itself.

During 1989-2000, the procurement of State trading agencies was dismantled, along with the statistics on this procurement. Therefore, transfers of agricultural goods to non-agriculture are estimated by the formula:

$$X_a = C_{an} + A_{an} + E_a \quad (\text{VI.5})$$

where C_{an} , A_{an} and E_a are transfers of agricultural goods for consumption and intermediate use in non-agriculture and for export, respectively.

C_{an} , A_{an} and E_a need to be estimated by producer prices, in order to be consistent with other data. In other words, agricultural goods transferred to non-agriculture should be estimated at the prices paid to the agricultural producer, rather than including the marketing margin. Nevertheless, there are only figures on consumption of agricultural goods (the expenditures of 'eating, drinking and smoking') and agricultural exports, both at retail prices (GSO 1992a: 88; GSO 2000b: 193). Therefore, some adjustments are needed.

Data is available on the eating, drinking and smoking expenditures for 1989 and 1995-99. Therefore, data on these figures for 1990-94 are extrapolated as a share of this expenditure in total consumption between 1989 and 1995. In addition, the total expenditure of eating, drinking and smoking includes the consumption of goods produced by agriculture, forestry, fishery and the agro-processing industry, and also includes im-

ported goods. Therefore, we need to dis-aggregate this figure to get the sale of agricultural consumption goods to the non-agricultural sector in producer prices, both in the form of un-processed and processed goods.

Table VI.11.
Consumption of Agricultural Goods at Retail Prices, 1989-2000
(current prices, mil. new VNDs)

Year	Total Consumption	Share of Expenditure on Eating, Drinking and Smoking (%)	Expenditure on Eating, Drinking and Smoking	Share of Consumption of Ag. Goods (%)	Consumption of Agricultural Goods	Import of Ag. Consumption Goods	Domestic Sale of Ag. Consumption Goods
	1	2	3 = 1*2	4	5 = 3*4	6	7 = 5-6
1989	24357962	50.4	12282836	80.4	9869607	379607	9490001
1990	40736000	50.8	20700373	80.9	16751387	366507	16384881
1991	68959000	51.2	35310780	81.5	28775956	729802	28046153
1992	95314000	51.6	49177277	82.1	40356686	963026	39393659
1993	116719000	52.0	60675869	82.6	50138879	1611639	48527240
1994	148037000	52.4	77533074	83.2	64510815	1858723	62652091
1995	187233000	52.8	98791000	83.8	82761701	3188484	79573217
1996	225231000	48.4	108904000	84.3	91854881	3526222	88328659
1997	250584000	42.1	105476000	84.3	88963541	2935614	86027927
1998	283444000	40.1	113730000	84.3	95925362	3711200	92214162
1999	301690000	40.8	122939000	84.3	103692676	2982264	100710412
2000	324258000	40.8	132135484	84.3	111449434	3293630	108155804

Source: Data in Column 1 for 1989 is from GSO (1992a, Table 16: 87), for 1990-99 from GSO (2000b: 189), for 2000 from Vu, Q.V. *et al.* (2002, Table 25: 471). Data in Column 2 for 1989, 1995-99 are the ratios between value in Column 3 and Column 1; for 1990-94 are extrapolated between figures in 1989 and 1995 by the formula: $r^t = r^{t-1} + (r^{1995} - r^{1989})/6$; for 2000 takes the same value as that of 1999. Data in Column 3 for 1989 is from GSO (1992a, Table. 17: 88), for 1995-99 from GSO (2000b: 193). Data in Column 4 for 1990-95 are extrapolated from the ratios between 1989 and 1996 by the formula: $r^t = r^{t-1} + (r^{1996} - r^{1989})/7$, for 1997-2000 take the same value as that of 1996. Data in Column 5 for 1989 is from GSO (1992a: 146-7, 187-206), for 1996 from GSO (1999a: 99-158, 293-321). Data in Column 6 are converted from US\$ value of import: for 1989 from GSO (1994, Table 149: 236-7), for 1990-93 from GSO (1995a, Table. 8.11: 279), for 1994-95 from GSO (1998, Table 151: 271), for 1996 from GSO (1999c, Table 154: 275), for 1997-98 from GSO (2001a, Table 203: 402), for 1999-2000 take the same share in total value of import of consumption goods. The exchange rate is taken from Tran, V.T. (ed., 2000, Table 4.8: 270).

First of all, the import of agricultural consumption goods has to be removed (Table VI.11). There is data availability on the import of food and foodstuff valued in US dollars, in which imported food is mostly

used as intermediate inputs for food processing industry⁵. Therefore, only figures on imported foodstuffs are regarded as import of agricultural consumption goods.

Then, it is necessary to separate value of the consumption goods produced only by the agriculture (C_{ad}) and the agro-processing industries (C_{ap}) at prices paid to the agricultural producer. From I-O tables in 1989 and 1996, one may calculate the share of C_{ad} and C_{ap} in the total expenditure of eating, drinking and smoking. Hence, data on C_{ad} and C_{ap} for 1990-95 is extrapolated as share of such expenditure between 1989 and 1996, and the data for 1997-2000 are estimated by applying the same share as that of 1996.

Furthermore, it is necessary to separate the value of C_{ad} and C_{ap} because C_{ad} is estimated at prices paid to farmers whereas C_{ap} is estimated at the prices paid to the agro-processing producer including the value-added of the sector. Based on the 1989 and 1996 I-O tables, C_{ad} and C_{ap} are estimated by applying the same methods as the prior stage. C_{ad} can be immediately accepted as a part of the value of agricultural consumption goods, whereas C_{ap} needs to be adjusted by excluding the value-added of the agro-processing industry sector. The 1989 and 1996 I-O tables provide data on the intermediate inputs transferred from agriculture to the agro-processing industry; hence one can estimate the input coefficients of the agro-processing industry provided by agriculture for 1989 and 1996, and extrapolating these coefficients for other years. Assuming that the consumption goods produced by agro-processing receive the same share of inputs provided by agriculture, one may have a rough estimate on C_{ap} at prices paid to farmers (C_{ap}^f) by multiplying C_{ap} by the input coefficients of the agro-processing industry provided by agriculture. Putting C_{ad} and C_{ap}^f together, C_a^f is shown in Table VI.12.

Table VI.12.
Consumption of Agricultural Goods at Producer Prices, 1989-2000
 (current prices, mil. new VNDs)

Year	C _a	C _{ad} /C _a (%)	C _{ap} /C _a (%)	C _{ad}	C _{ap}	C _{ap} ^f /C _{ap} (%)	C _{ap} ^f	C _a ^f
	1	2	3 = 1-2	4 = 1*2	5 = 1*3	6	7 = 5*6	8 = 4+7
1989	9490001	78.5	21.5	7451204	2038797	19.0	386964	7838167
1990	16384881	72.7	27.3	11917373	4467508	24.4	1091897	13009270
1991	28046153	67.0	33.0	18777336	9268817	29.9	2771535	21548871
1992	39393659	61.2	38.8	24096767	15296892	35.4	5409374	29506141
1993	48527240	55.4	44.6	26877659	21649582	40.8	8838102	35715761
1994	62652091	49.6	50.4	31078156	31573936	46.3	14613773	45691928
1995	79573217	43.8	56.2	34870522	44702695	51.7	23131478	58001999
1996	88328659	38.0	62.0	33599804	54728855	57.2	31308189	64907993
1997	86027927	38.0	62.0	32724616	53303310	57.2	30492692	63217308
1998	92214162	38.0	62.0	35077831	57136331	57.2	32685410	67763240
1999	100710412	38.0	62.0	38309764	62400648	57.2	35696915	74006679
2000	108155804	38.0	62.0	41141956	67013848	57.2	38335942	79477898

Source: Data in Column 1 is from Table VI.11, Column 5. Data in Column 2 for 1990-95 are extrapolated between ratios in 1989 and 1996, which are from GSO (1992a: 146-7, 187-206) and GSO (1999a, 99-158, 293-321), by the formula: $r^t = r^{t-1} + (r^{1996} - r^{1989})/7$; for 1997-2000 take the same value that of 1996. Data in Column 6 are the input coefficients of agro-processing industry provided by agriculture, which are also extrapolated from the coefficients between 1989 and 1996 (GSO, 1992a: 146-7, 187-206; GSO, 1999a: 99-158, 293-321).

Table VI.13.
Share of Agriculture and Non-Agriculture in Total Consumption of Agricultural Goods, 1989-2000

(current prices, mil. new VNDs)

Year	$\frac{C_{aa}}{DY_{ah}}$	$\frac{C_{an}}{DY_{nh}}$	$\frac{DY_{ah}}{DY_h}$	$\frac{DY_{nh}}{DY_h}$	$\frac{C_{aa}}{DY_h}$	$\frac{C_{an}}{DY_h}$	$\frac{C_a/D}{Y_h}$	$\frac{C_{aa}}{C_a}$	$\frac{C_{an}}{C_a}$
	1	2	3	4	5 = 1*3	6 = 2*4	7 = 5+6	8 = 5/7	9 = 6/7
1989	0.66	0.61	0.55	0.45	0.36	0.28	0.64	0.57	0.43
1990	0.63	0.56	0.52	0.48	0.33	0.27	0.59	0.55	0.45
1991	0.59	0.51	0.50	0.50	0.29	0.26	0.55	0.53	0.47
1992	0.56	0.46	0.47	0.53	0.26	0.24	0.51	0.52	0.48
1993	0.52	0.41	0.45	0.55	0.23	0.23	0.46	0.51	0.49
1994	0.49	0.36	0.43	0.57	0.21	0.21	0.42	0.50	0.50
1995	0.50	0.39	0.40	0.60	0.20	0.23	0.43	0.46	0.54
1996	0.47	0.36	0.40	0.60	0.19	0.22	0.41	0.47	0.53
1997	0.46	0.33	0.39	0.61	0.18	0.20	0.38	0.47	0.53
1998	0.44	0.31	0.39	0.61	0.17	0.19	0.36	0.48	0.52
1999	0.43	0.28	0.38	0.62	0.16	0.17	0.34	0.49	0.51
2000	0.43	0.28	0.38	0.62	0.16	0.17	0.34	0.49	0.51

Source: Data in Column 1 from Appendix, Tables VI.A.8, Column 1 and VI.A.9, Columns 2. Data in Column 2 from Appendix, Table VI.A.11, Columns 1 and 3. Data in Columns 3 and 4 from Appendix, Table VI.A.4, Columns 6 and 5.

C_{an} is estimated by the formula (Tables VI.13, VI.14):

$$C_{an} = C_a \times \frac{C_{an}}{DY_{nh}} \times \frac{DY_{nh}}{DY_h} \times \frac{1}{C_a / DY_h} \quad (VI.6)$$

where $\frac{C_{an}}{DY_{nh}}$ is the share of agricultural goods consumption in total income of non-agricultural households, which is estimated from living standards surveys (Appendix, Table VI.A.11).

$\frac{DY_{nh}}{DY_h}$ is the share of non-agricultural households in gross disposable income of households, which is equal to the gross disposable income of all

households minus the gross disposable income of agricultural households⁶ (Appendix, Table VI.A.4).

$\frac{C_a}{DY_h}$ is the share of agricultural goods consumption in the total disposable income and defined by:

$$\frac{C_a}{DY_h} = \frac{C_{aa} + C_{an}}{DY_h} = \frac{C_{aa}}{DY_{ah}} \times \frac{DY_{ah}}{DY_h} + \frac{C_{an}}{DY_{nh}} \times \frac{DY_{nh}}{DY_h} \quad (\text{VI.7})$$

Table VI.14.
Consumption of Agricultural Goods by Sectors, 1989-2000
(current prices, mil. new VNDs)

Year	C_{aa}/C_a	C_{an}/C_a	C_a^f	C_{aa}	C_{an}
	1	2	3	4 = 1*3	5 = 2*3
1989	0.57	0.43	7838167	4431241	3406927
1990	0.55	0.45	13009270	7130150	5879119
1991	0.53	0.47	21548871	11462940	10085931
1992	0.52	0.48	29506141	15259696	14246445
1993	0.51	0.49	35715761	18072655	17643105
1994	0.50	0.50	45691928	22711264	22980664
1995	0.46	0.54	58001999	26926425	31075574
1996	0.47	0.53	64907993	30370910	34537083
1997	0.47	0.53	63217308	29757057	33460251
1998	0.48	0.52	67763240	32338914	35424326
1999	0.49	0.51	74006679	35952196	38054482
2000	0.49	0.51	79477898	38610096	40867801

Source: Data in Columns 1 and 2 is from Table VI.13, Columns 8 and 9. Data in Column 3 is from Table VI.12, Column 8.

A_{an} includes the intermediate inputs provided by agriculture for direct use in non-agriculture, excluding the agro-processing industry (A_{and}) and those for the agro-processing industry then transferred as intermediate inputs for other non-agricultural sectors (A_{anp}). To estimate A_{and} and A_{anp} , first of all, it is necessary to separate the output of the agro-processing industry (Q_{np}) from other non-agricultural sectors (Q_{no}).

Table VI.15.
Gross Output of Agro-Processing Industry and Other Non-Agricultural Sectors, 1989-2000

(current prices, new mil. VNDs)

Year	Industrial Output	Share of Agro-Processing Industry (%)	Q _{np}	Q _n	Q _{no}
	1	2	3 = 1*2	4	5 = 4-3
1989	12363187	0.26	3254596	35615173	32360577
1990	23174759	0.36	8304821	52634337	44329517
1991	44554981	0.37	16438796	98796612	82357816
1992	71884095	0.38	27526840	153208545	125681705
1993	88708532	0.40	35643301	209929785	174286484
1994	114343883	0.39	45145150	281479063	236333914
1995	156093415	0.41	64502461	371237636	306735175
1996	172613702	0.42	72727280	455030458	382303178
1997	208781000	0.41	84567957	513247000	428679043
1998	244947000	0.40	97705106	578744000	481038894
1999	285048000	0.38	108482415	638618477	530136063
2000	352320419	0.37	128699749	717532306	588832558

Source: Data in Column 1 for 1989 is from GSO (1992b, Table 25: 32), for 1990-96 from GSO (1997, Table 70: 117), for 1996-2000 from GSO (2001a, Tables 131, 162: 258-9, 320). These all come from SYBs, which provide data on gross output of industrial sector⁷ at current prices for 1989, 1996-99, at 1989 prices for 1990-94 and at 1994 prices for 2000. Using GDP deflator for industrial sector only, provided by the World Bank (1997, Appendix, Table 2.3; 2002, Appendix, Table 2.3A), one may have data on gross output of industrial sector at current prices for 1990-94. These data, however, are smaller than those from 1989 and 1996 I-O tables (GSO, 1992a: 146-7, 187-206; GSO, 1999a: 99-158, 293-321) and gross industrial output provided in GSO (2000b: 80-94). The 1996 gross industrial output from I-O table, in addition, is much larger than that provided by SYBs (around 1.5 times), whereas it is only about 1.15 times for the other years. This may reflect the difference in the classification of industrial branches between the SYBs and the I-O tables. Therefore, the gross industrial output, provided in SYBs, needs to be adjusted for 1989-96. The difference between data on gross industrial output from SYBs, and the 1989 I-O and 1997 data on gross industrial output from GSO (2000b: 80-4), gives a rough estimate on the higher share of the later against the former. Multiplying gross industrial output from SYBs with the extrapolated ratios of those shares between 1989 and 1997, one will get the data on gross industrial output for 1990-96. Data in Column 2 for 1990 and 1995 are the sum of share of agro-processing industry in gross industrial output, provided by SYBs, and the extrapolated deviation of such share from those provided in 1989 and 1996 I-O tables. For 1997-2000, the same method is applied with one adjustment that the deviation of 1997-2000 keeps the same value as that of 1996. Data in Column 3 for 1989 from GSO (1992a: 146-7, 187-206) and for 1996 from GSO (1999a: 99-158, 293-321). Data in Column 4 is from Table VI.7, Column 3.

The SYBs provide data on the share of the agro-processing industry in the gross industrial output. This data, however, is also different from those provided by the 1989 and 1996 I-O tables. Here again the deviation between the data from the SYBs and the I-O tables in 1989 and 1996 is selected as the benchmark to estimate the output of agro-processing for other years (Q_{ap}). By deducting this output from the total output of non-agriculture in Table VI.7, the data on output of non-agriculture can be calculated, excluding the agro-processing industry (Q_{no}) (Table VI.15).

The intermediate inputs transferred directly from agriculture to non-agriculture (Q_{no}) can be estimated by using the input coefficients of Q_{no} in 1989 and 1996. For 1990-95, the coefficients are extrapolated from those between 1989 and 1996; for 1997-2000 those coefficients are assumed to be unchanged from that in 1996. Multiplying Q_{no} by those coefficients, will calculate the value of intermediate inputs transferred directly from agriculture to non-agriculture, excluding the agro-processing industry (A_{and}).

Similarly, the 1989 and the 1996 I-O tables provide data on the input coefficients between agriculture and agro-processing, and between agro-processing and the other sectors in non-agriculture (Q_{no}). This helps estimate the share of inputs originally supplied by agriculture in non-agricultural production, excluding agro-processing industry. Extrapolating this share between 1989 and 1996, and assuming no change in this share for 1996-2000, the value of the intermediate inputs transferred to non-agriculture indirectly through agro-processing industry can be calculated by multiplying output of non-agriculture, excluding agro-processing industry, with the above shares (A_{anp}). The combining of A_{and} and A_{anp} , A_{an} is shown in Table VI.16.

Table VI.16.
Intermediate Inputs Transferred from Agriculture to Non-Agriculture,
1989-2000

(current prices, new mil. VNDs)

Year	Directly to Non-Agriculture			Indirectly through Agro-Processing Industry				A _{an}
	a _{and} (%)	Q _{no}	A _{and}	a _{ap} (%)	a _{pno} (%)	Q _{no}	A _{ap}	
	1	2	3 = 1*2	4	5	6	7 = 4*5*6	
1989	1.2	32360577	394870	19.0	2.3	32360577	141574	536444
1990	1.2	44329517	521206	24.4	2.1	44329517	226426	747632
1991	1.1	82357816	931705	29.9	1.9	82357816	461672	1393377
1992	1.1	125681705	1365941	35.4	1.7	125681705	737575	2103516
1993	1.0	174286484	1816694	40.8	1.4	174286484	1027686	2844380
1994	1.0	236333914	2358368	46.3	1.2	236333914	1344617	3702985
1995	1.0	306735175	2924512	51.7	1.0	306735175	1609576	4534088
1996	0.9	382303178	3475013	57.2	0.8	382303178	1747290	5222303
1997	0.9	428679043	3896555	57.2	0.8	428679043	1959247	5855802
1998	0.9	481038894	4372489	57.2	0.8	481038894	2198554	6571043
1999	0.9	530136063	4818766	57.2	0.8	530136063	2422949	7241716
2000	0.9	588832558	5352299	57.2	0.8	588832558	2691217	8043516

Source: Data in Column 1 for 1989 is from 1989 I-O table (GSO, 1992a: 146-7, 187-206), for 1996 from 1996 I-O table (GSO, 1999a: 99-158, 293-321). Data for 1990 and 1995 are extrapolated from the ratio between 1989 and 1996 by the formula: $r^t = r^{t-1} + (r^{1996} - r^{1989})/6$, for 1997-2000 take the same value as that of 1996. Data in Columns 2 and 6 are from Table VI.15, Column 5. Data in Columns 4 and 5 are similarly based on the 1989 and 1996 I-O tables.

The external export of agricultural goods also includes direct exports from agriculture and indirect exports through the agro-processing industry. Data on direct exports of agricultural goods (E_{ad}) in US\$ are available in statistics. Using the exchange rate of VIETCOMBANK, the value of these exports in VNDs at retail (purchaser) prices can be extracted. As all of figures need to be calculated in producer prices, such data is adjusted to producer prices by using the adjusted producer/retail price ratio, extrapolated from figures in 1989 and 1996 (Table VI. 17).

Table VI.17.
Direct Agricultural Exports, 1989-2000

(current prices, mil. new VNDs)

Year	E_{ad} (mil. US\$)	Exchange rate	E_{ad} (retail prices)	Producer/Retail Price Ratio	E_{ad} (producer prices)
	1	2	3 = 1*2	4	5 = 3*4
1989	742	4635	3441024	0.52	1787636
1990	783	5374	4208917	0.53	2245272
1991	628	9628	6046384	0.55	3309821
1992	828	11172	9245947	0.56	5190249
1993	920	10582	9732265	0.58	5599001
1994	1280	10908	13964422	0.59	8228563
1995	1746	11029	19254428	0.60	11614289
1996	2160	11016	23790154	0.62	14682092
1997	2231	11705	26117367	0.62	16118331
1998	2274	13393	30459700	0.62	18798202
1999	2585	14017	36239791	0.62	22365385
2000	2613	14494	37873000	0.62	23373320

Source: Data in Column 1 for 1989-92 is from GSO (1993, Table 126: 193), for 1993-95 from GSO (1997, Table 125: 207), for 1996-98 (2000c, Table 155: 275). Data in Column 1 for 1999-2000 is estimated by multiplying the share of agriculture in total export of agriculture and forestry in 1998 with value of total export of agriculture and forestry in 1999 and 2000, which is provided by GSO (2001a, Table 202: 401). Data in Column 2 for 1989-99 is from Tran, V.T. (ed., 2000, Table 4.8: 270), and for 2000 is estimated by using the price index of US\$ from GSO (2001a, Table 198: 395-6). Data in Column 4 for 1989 and 1996 is estimated by comparing the difference between the value of agricultural export at retail prices with those of agricultural export at producer prices, which are provided by GSO (1992a: 135-6, 187-206), and GSO (2000b: 248-52, 262), respectively. Data in Column 4 for 1990-95 are estimated by the formula: $r^t = r^{t-1} + (r^{1996} - r^{1989})/7$, for 1997-2000 take the same value as that of 1996

To estimate the indirect exports of agricultural goods (E_{ap}), first of all, it is necessary to calculate the share of exports of the agro-processing industry in the total export of non-agriculture. This is provided in 1989 and 1996 I-O tables. Multiplying this share with input-coefficients of agro-processing industry provided by agriculture, one may arrive at the share of inputs originated from agriculture in the total export of non-agriculture. The share in the other years is extrapolated by applying the method similar to the previous one. Putting E_{ad} and E_{ap} together, E_a is shown in Table VI.18.

Table VI.18.
Indirect and Total Agricultural Export, 1989-2000
(current prices, new mil. VNDs)

Year	E_{ad}	E_{ap}					E_a
		a_{ap} (%)	E_{ap}/E_n (%)	E_n (mil. US\$)	E_n (mil. VNDs)	E_{ap}	
		1	2	3	4	5	6 = 2*3*5
		1	2	3	4	5	7 = 1+6
1989	1787636	19.0	4.5	1201	5566635	53767	1841403
1990	2245272	24.4	5.9	1621	8709642	102174	2347445
1991	3309821	29.9	7.3	1459	14048215	187672	3497492
1992	5190249	35.4	8.7	1753	19585633	284831	5475080
1993	5599001	40.8	10.1	2065	21856063	334012	5933013
1994	8228563	46.3	11.5	2774	30258792	471358	8699921
1995	11614289	51.7	12.9	3703	40841490	630124	12244413
1996	14682092	57.2	14.3	5096	56140841	832861	15514953
1997	16118331	57.2	14.3	6954	81393059	1207483	17325814
1998	18798202	57.2	14.3	7086	94902798	1407903	20206105
1999	22365385	57.2	14.3	8955	125516389	1862062	24227447
2000	23373320	57.2	14.3	11695	169501114	2514585	25887904

Source: Data in Column 1 are from Table VI.17, Column 5. Data in Column 2 are from Table VI.16, Column 4. Data in Column 3 for 1989 is from GSO (1992a: 146-7, 187-206; GSO), for 1996 from GSO (1999a: 99-158, 293-321), for 1990-95 are extrapolated from the value between 1989 and 1996 by the formula: $r^t = r^{t-1} + (r^{1996} - r^{1989})/7$, for 1997-2000 take the same value as that of 1996. Data in Column 4 for 1989-92 is from GSO (1993, Table 126: 193), for 1993-95 from GSO (1997, Table 125: 207), for 1996-98 (2000c, Table 155: 275), for 1999-2000 from GSO (2001a, Table 202: 401). Data in Column 5 are provided by using exchange rate from Table VI.17, Column 2.

Table VI.19.
Agricultural Marketed Surplus, 1989-2000
 (current prices, new mil. VNDs)

Year	C _{an}	A _{an}	E _a	X _a
	1	2	3	4 = 1+2+3
1989	3406927	536444	1841403	5784774
1990	5879119	747632	2347445	8974196
1991	10085931	1393377	3497492	14976801
1992	14246445	2103516	5475080	21825041
1993	17643105	2844380	5933013	26420498
1994	22980664	3702985	8699921	35383571
1995	31075574	4534088	12244413	47854076
1996	34537083	5222303	15514953	55274338
1997	33460251	5855802	17325814	56641867
1998	35424326	6571043	20206105	62201474
1999	38054482	7241716	24227447	69523645
2000	40867801	8043516	25887904	74799222

Source: Data in Column 1 are from Table VI.14, Column 5. Data in Column 2 are from Table VI.16, Column 8. Data in Column 3 are from Table VI.18, Column 7.

6.4. The Financial Side of ISRFs

6.4.1. Net factor payment transfer: $(F_a - Y_a) = (F_{ga} + F_{na} - F_{an})$

where F_a is value-added or GDP of agriculture

Y_a is the factor income received by agricultural institutions from both agricultural and non-agricultural activities

F_{na} is the factor payment received by non-State non-agricultural institutions from the agricultural sector

F_{an} is the factor payment received by agricultural institutions from the non-agricultural sector.

F_{ga} is the factor payment received by the State from the agricultural sector, and this is estimated as:

$$F_{ga} = F_{gsa} + NIT_{ga}$$

where F_{gsa} is the delivery of State farms to the State

NIT_{ga} is the net indirect tax paid by agriculture to the State.

F_{ga} : During 1976-88, State farms existed and these enterprises were responsible for delivering their products to the State. The GSO did not have direct data on the total value of delivery of State farms. However, it did provide data on the volume of delivery of State farms on two major agricultural products: rice and pork. Hence, the share of State farms in total delivery of food and foodstuffs can be estimated. Then the value of State farm delivery can be obtained by multiplying these shares with total value of delivery of food and foodstuffs to the State (Table VI.20). After 1988, land was contracted to the former State-farm workers, who were then obligated to pay agricultural tax only. So, profits transferred to the State were cancelled or insignificant after 1988.

Table VI.20.
Delivery of State Farms, 1976-88

(current prices, mil. new VNDs)

Year	Food Delivery			Foodstuff Delivery			State Farm Delivery
	Total	Share of State Farm	State Farm Delivery	Total	Share of State Farm	State Farm Delivery	
	1	2	3 = 1*2	4	5	6 = 4*5	
1976	65	0.01	0	78	0.03	2	3
1977	53	0.01	1	69	0.03	2	2
1978	64	0.01	1	94	0.03	3	3
1979	64	0.02	1	94	0.06	6	7
1980	162	0.02	3	162	0.03	4	7
1981	612	0.02	11	462	0.01	6	17
1982	1109	0.01	14	940	0.02	17	31
1983	1459	0.01	21	1687	0.02	35	56
1984	2126	0.01	25	3635	0.02	80	105
1985	3848	0.02	61	8222	0.02	181	241
1986	15900	0.01	182	-	0.05	-	3785
1987	97300	0.01	1272	-	0.08	-	15472
1988	662200	0.02	11895	-	0.15	-	113895

Source: Data in Columns 1 and 4 from GSO (1987, Table 148: 219). Data in Columns 2 and 5 respectively are the share of State farms in total delivery, except for 1976-79 when there was only data on the agricultural delivery to the State excluding the State farm; hence for 1976-79, data in Columns 2 and 5 respectively are ratios of delivery from State farms over that of non-State agricultural sectors. Data in Columns 2 and 5 are from GSO (1981, Tables 65, 66: 109-111) for 1976-78, from GSO (1983, Tables 79, 80: 141-2) for 1979-82, from GSO (1985a, Tables 69, 70, 173: 102-3, 244) for 1983-84, from GSO (1987, Table 75, 153: 112, 225) for 1985-86, and from GSO (1990a, Tables 79, 155, 158: 108, 210, 213). Data on delivery of State farms is available for 1986-88 from GSO (1987, Table 155: 227) for 1986, GSO (1989, Table 174: 261), and from GSO (1990a, Table 157: 212). Nevertheless, these data do not include the delivery of food from State farms. Therefore, the delivery of food in Column 2 should be added to such data to get the total delivery of State farms in 1986-88.

Table VI.21.
Distribution of Agricultural GDP, 1976-2000
 (current prices, mil. new VNDs)

Year	GDP _a (F _a)	F _{aa}	F _{na}	F _{gsa}	NIT _{ga}
	1	2 = 1-(3+4+5)	3	4	5
1976	752	716	14	3	20
1977	758	714	19	2	23
1978	957	905	21	3	28
1979	1050	993	21	7	29
1980	1449	1379	18	7	44
1981	3508	3397	33	17	61
1982	7359	7014	65	31	249
1983	9309	8835	101	56	317
1984	14216	13495	182	105	434
1985	46460	44963	577	241	679
1986	185000	174113	3103	3785	4000
1987	947000	908431	11097	15472	12000
1988	5941000	5642811	48293	113895	136000
1989	9924000	9172289	158375		593336
1990	13721000	13154327	60073		506600
1991	27061000	25753241	105859		1201900
1992	32432000	30003116	229084		2199800
1993	35836000	32990052	550948		2295000
1994	41839000	38562549	1394551		1881900
1995	52713000	47776170	2226830		2710000
1996	61048000	56167545	1712455		3168000
1997	65883000	60785632	1719368		3378000
1998	76170000	71266524	2330476		2573000
1999	83336000	77709579	2652421		2974000
2000	88409000	82201870	3187930		3019200

Source: Data in Column 1 is from Table VI.2, Column 2. Data in Column 3 is from Table VI.29, Column 7, Table VI.30, Column 7, and Table VI.31, Column 5. Data in Column 4 is from Table VI.20, Column 7. Data in Column 5 for 1976-88 is from Table VI.8, Column 4, for 1989 from GSO (1992a: 200), for 1990-92 from World Bank (1995a, Appendix, Tables 5.1, 5.2A), for 1993-94 from World Bank (1997, Appendix, Tables 5.1, 5.2A), for 1995-99 from GSO (2000b: 81-127), for 2000 from World Bank (2002, Appendix, Table 5.2A). Nevertheless, data on indirect taxes imposed on agriculture from WB (1995a, 1997, 2002) needs to be adjusted as it does not count such taxes as slaughter tax, land tax etc., in agricultural tax. Available data in 1989 and 1995-99 from the GSO gives the evidence that total indirect taxes imposed on agriculture is often 1.7 times higher than those of the World Bank (1995a, 1997, 2002).

F_{na} represents the payments to non-agricultural institutions for the factors of production, in the form of interest payments made by agriculture to the banking system. Interest payments paid by the agricultural sector to the banking system⁸ obtained by multiplying the annual interest rate by the value of credits lent to the agricultural sector, which will be shown later in Tables VI.29 - VI.31.

It is also known that:

$$F_a \text{ or } GDP_a = F_{aa} + F_{na} + F_{gsa} + NIT_{ga} \quad (VI.8)$$

Therefore, rearranging equation (VI.4) we have:

$$F_{aa} = GDP_a - (F_{na} + F_{gsa} + NIT_{ga}) \quad (VI.9)$$

Data on F_{aa} is important because it helps to estimate the non-farm income (F_{an}) as well as the total income received by agricultural institutions (Y_a). The figure on the income of agricultural institutions, in turn, is necessary to estimate the consumption and saving of agricultural institutions.

F_{an} includes non-agricultural income earned by agricultural households and interest payment paid by the banking system to agricultural sector (Table VI.22).

In the period of 1976-88, Vietnamese statistics provided the composition of peasant households' income as a result of living standards surveys. This income came from three sources: cooperative production, family production, and 'other income' (Appendix, Table VI.A.7). Income from cooperatives and from family production⁹ took the form of agricultural income. Non-agricultural income earned by peasant households may have been mainly stemmed from 'other income'. Multiplying the ratio of 'other income' over agricultural income (from cooperative and family production) by agricultural income (F_{aa}) provides the value of non-agricultural income earned by peasant households during 1976-88. This may have also included gifts or current transfers from non-agricultural sector; hence T_{an} should not account for this item to avoid 'double counting'.

Table VI.22.
Factor Income Inflows to Agriculture, 1976-2000
 (current prices, mil. new VNDs)

Year	Non-Farm Income			Interest Payment to Agriculture		
	F _{aa}	Non-Farm/Farm Income Ratio	Non-Farm Income	D _a	Annual Inter- est Rate (%)	Payment
	1	2	3 = 1*2	4	5	6 = 4*5
1976	716	0.12	88	23	34.5	8
1977	714	0.11	77	25	34.5	9
1978	905	0.12	104	29	34.5	10
1979	993	0.12	117	33	34.5	12
1980	1379	0.12	162	48	34.5	16
1981	3397	0.14	468	86	34.5	30
1982	7014	0.09	661	379	34.5	131
1983	8835	0.05	436	603	34.5	208
1984	13495	0.03	461	1151	34.5	397
1985	44963	0.08	3779	4497	34.5	1551
1986	174113	0.13	23321	21716	125.2	27192
1987	908431	0.22	201577	89901	125.2	112574
1988	5642811	0.31	1748423	427004	125.2	534691
1989	9172289	0.40	3648768	865297	105.8	915684
1990	13154327	0.38	5016292	1209586	33.7	407676
1991	25753241	0.36	9396838	2253148	30.6	689576
1992	30003116	0.35	10453627	2661364	22.4	596671
1993	32990052	0.33	10951255	2864467	11.7	334641
1994	38562549	0.32	12166272	3651540	18.2	664580
1995	47776170	0.34	16471272	4761919	18.2	866669
1996	56167545	0.35	19449364	5543529	9.1	504461
1997	60785632	0.32	19447794	6506115	8.1	526995
1998	71266524	0.29	20924366	7920067	9.7	766267
1999	77709579	0.27	20769734	11951679	6.9	824666
2000	82201870	0.27	21970406	16489830	3.9	638981

Source: Data in Column 1 are from Table VI.21, Column 2. Data in Column 2 for 1976-84, 1986, 89, 1994-96 and 1999 are estimated from Appendix, Tables VI.A.7 and VI.A.8. Data in Column 2 for 1985 is the average of those of 1984 and 1986. For other years, non-farm/farm income ratio is extrapolated by the formula: $r^t = r^{t-1} + (r^{1989} - r^{1986})/3$ for 1987-1988, $r^t = r^{t-1} + (r^{1994} - r^{1989})/5$ for 1990-93 and $r^t = r^{t-1} + (r^{1999} - r^{1996})/3$ for 1997-98. The ratio of 2000 takes the same value of that in 1999. Data in Column 4 are from Table VI.25, Column 8. Data in Column 5 are annually interest rates, which are computed from average weighted monthly interest rates provided by Asian Development Bank (www.adb.org) for 1984-85, Le, V.T. (ed., 1992, Table 34: 110) for 1986-88, World Bank (1995b, Annex 1, Table 7: 101) for 1989-93, and IMF (1999b, Table 24: 26) for 1994-95, and IMF (2002, Appendix, Table 22: 76). Borrowing interest rates for 1976-83 are assumed to be the same as those of 1984.

During 1989-2000, the living standard surveys of 1994-96 and 1999 provided data on the composition of income of agricultural households, including income from farm activities, wages, non-farm activities, State subsidies, and 'other sources'¹⁰ (Appendix, Table VI.A.8). Income from wages and non-farm activities are regarded as non-agricultural income. State subsidies will be accounted for in the current transfers from the State to agriculture (T_{ag}) later on.

In principle, the item 'others' should be accounted as the current transfers from private non-agriculture to agriculture. Yet, to be comparable with figures in the 1976-88 period, current transfers from private non-agricultural sector to agriculture should be included in F_{an} . However, available evidence is not convincing enough to include the item 'other' as resource inflows to agriculture for 2 reasons (GSO, 2000f: 297-8). First, 'other' includes interest payments to agricultural households that have been accounted for in the factor payments to the agricultural sector already. Second, many gifts in the form of consumption goods are agricultural goods that reflect the intra-transfer within the agricultural sector only. As a result, only wages and income from non-agricultural activities are accounted for as non-agricultural income for agricultural sector (F_{an}). Subsidies from the State will be accounted separately in T_{ag} , which should not be estimated in this way because data on State expenditures are available.

Interest payments paid by the banking system to agricultural depositors are obtained by multiplying the annual deposit interest rate by deposits of the agricultural sector on the banking system.

Table VI.23.
Net Factor Income Outflows from Agriculture, 1976-2000
 (current prices, mil. new VNDs)

Year	$F_{ga} + F_{na}$	F_{an}	$F_{ga} + F_{na} - F_{an}$
	1	2	3 = 1-2
1976	36	96	-59
1977	44	86	-41
1978	52	114	-62
1979	57	128	-71
1980	70	178	-109
1981	111	497	-387
1982	345	791	-446
1983	474	644	-169
1984	721	858	-137
1985	1497	5330	-3832
1986	10887	50513	-39626
1987	38569	314151	-275582
1988	298189	2283114	-1984925
1989	751711	4564452	-3812741
1990	566673	5423967	-4857294
1991	1307759	10086414	-8778654
1992	2428884	11050298	-8621413
1993	2845948	11285896	-8439948
1994	3276451	12830853	-9554402
1995	4936830	17337941	-12401111
1996	4880455	19953825	-15073370
1997	5097368	19974789	-14877421
1998	4903476	21690632	-16787156
1999	5626421	21594400	-15967979
2000	6207130	22609387	-16402257

Source: Data in Column 1 are the sum of Columns 3-5 in Table VI.21. Data in Column 2 are the sum of Columns 3 and 6 in Table VI.22.

6.4.2. Net state capital transfer: ($K_{ga} - K_{ag}$)

where K_{ga} is capital transfers from agricultural institutions to the State

K_{ag} is capital transfers from the State to agricultural institutions

The sole component of ($K_{ga} - K_{ag}$) is State investment in agriculture, recognized as resource inflows to agricultural sector (K_{ag}) (Table VI.24)

Table VI.24.
State Investment, 1976-2000

(current prices, mil. new VNDs)

Year	Total	Industry	Construction	Agriculture	Forestry	Trade	Transport	Others
	1 = sum(2:8)	2	3	4	5	6	7	8
1976	298	95	16	60	7	13	65	42
1977	372	117	19	88	12	13	66	58
1978	407	137	23	92	14	12	74	55
1979	396	155	18	80	11	9	80	43
1980	371	151	20	71	10	6	77	36
1981	303	138	11	66	7	6	48	28
1982	1441	683	38	239	23	32	262	164
1983	2041	823	73	341	49	58	364	333
1984	2834	957	65	540	85	98	603	486
1985	3726	1163	77	691	118	158	689	830
1986	30839	11004	458	6075	1475	1041	4983	5803
1987	118224	51472	868	21551	2161	4071	13685	24417
1988	668452	303661	5715	128399	23773	20597	90200	96108
1989	1919767	947657	16057	238252	61156	44879	306966	304800
1990	2703998	1023117	15348	409165	53295	75659	541076	586338
1991	4503900	1944800	34900	615400	89400	110900	925300	783200
1992	7566400	3642600	57100	839800	118300	49200	1680300	1179100
1993	16751500	9212500	57800	1207600	276700	184900	3719100	2092900
1994	21141800	7861000	392100	1613100	367700	548600	4725000	5634300
1995	22963000	6914200	549900	2216500	433700	390700	7457600	5000400
1996	35894400	13495500	854900	2384400	498000	579900	11650100	6431600
1997	46570400	13777900	936200	2981200	485300	926100	17153500	10310200
1998	52536100	20352100	899500	4090900	370900	770900	12811500	13240300
1999	63871900	24167300	1236000	5124200	628800	591500	17327200	14796900
2000	74700000	-	-	5992897	-	-	-	-

Source: Data for 1976-82 is from GSO (1983, Table 145: 228-31), for 1983-84 from GSO (1985a, Tables 124, 125: 183-4), for 1985-86 from GSO (1987, Table 112: 178), for 1987 from GSO (1989, Table 124: 197), for 1988 from GSO (1990a, Table 111: 162), for 1989 from GSO (1991b, Table 105: 59), for 1990 from GSO (1992b, Table 111: 58), for 1991 from GSO (1993, Table 92: 145), for 1992 from GSO (1994, Table 92: 156), for 1993 from GSO (1995a, Table 7.7: 237), for 1994 from GSO (1996b, Table 7.7: 217), for 1995 from GSO (1997, Table 90: 162), for 1996 from GSO (1998, Tables 122, 125: 227, 231), for 1997 from GSO (1999c, Tables 125, 128: 232, 236), for 1998 from GSO (2000c, Tables 126, 129: 231, 235), for 1999-2000 from GSO (2001a, Tables 170, 172, 175: 347, 349, 352). Data for State investment in agriculture for 2000 is extrapolated by multiplying the share of agriculture in total State investment in 1999 with total State investment in 2000.

6.4.3. Net private capital transfer: ($K_{na} - K_{an}$)

where K_{na} are capital transfers from agricultural institutions to the non-State non-agricultural institutions

K_{ag} are capital transfers from the non-agricultural institutions to agricultural institutions

Table VI.25.
Deposits Held by Agricultural Sector, 1975-2000
(mil. new VNDs, current prices)

Year	s_{ah}	gdp_a	s_n	gdp_{nh}	s^*	ΔD_h	ΔD_a	D_a
	1	2	3	4	$5 = 1*3 / (1*3+2*4)$	6	$7 = 5*6$	$8 = D_a^{t-1} + \Delta D_a^t$
1975	-	0.35	-	0.65	0.34	-	-	17
1976	0.02	0.39	0.03	0.61	0.34	16	5	23
1977	0.02	0.37	0.02	0.63	0.36	6	2	25
1978	0.02	0.39	0.02	0.61	0.40	10	4	29
1979	0.00	0.37	0.01	0.63	0.31	13	4	33
1980	0.07	0.44	0.01	0.56	0.86	17	14	48
1981	0.01	0.47	0.01	0.53	0.26	148	38	86
1982	0.03	0.45	0.00	0.55	0.86	340	293	379
1983	0.23	0.44	0.01	0.56	0.95	236	224	603
1984	0.24	0.42	0.00	0.58	1.00	549	548	1151
1985	0.25	0.40	0.02	0.60	0.91	3685	3346	4497
1986	0.26	0.31	0.03	0.69	0.78	22142	17218	21716
1987	0.19	0.33	0.05	0.67	0.65	104403	68186	89901
1988	0.12	0.39	0.07	0.61	0.53	632849	337103	427004
1989	0.05	0.35	0.08	0.65	0.25	1743180	438293	865297
1990	0.07	0.33	0.10	0.67	0.25	1368654	344289	1209586
1991	0.09	0.35	0.12	0.65	0.29	3608650	1043562	2253148
1992	0.11	0.29	0.13	0.71	0.25	1656567	408216	2661364
1993	0.12	0.26	0.15	0.74	0.22	925333	203103	2864467
1994	0.14	0.23	0.17	0.77	0.21	3830221	787073	3651540
1995	0.17	0.23	0.19	0.77	0.21	5314371	1110379	4761919
1996	0.20	0.22	0.23	0.78	0.20	3887281	781610	5543529
1997	0.22	0.21	0.26	0.79	0.18	5302838	962585	6506115
1998	0.24	0.21	0.29	0.79	0.18	7970130	1413953	7920067
1999	0.26	0.21	0.33	0.79	0.17	23548232	4031612	11951679
2000	0.26	0.20	0.33	0.80	0.16	27805235	4538151	16489830

Source: Data in Column 1 is from Appendix, Table VI.A.10, Column 5. Data in Columns 2 and 4 is estimated from Table VI.2. Data in Column 3 is from Appendix, Table VI.A.11, Column 6. Data in Column 6 is from Appendix, Table VI.A.6, Column 4. Data in Column 8 for 1975 is the value of D_h in 1975 times s^* of 1976.

K_{na} : The first component of K_{na} is increments in deposits held by agricultural households on the banking system, assuming households are the main net savers in agriculture. With some adjustment, the data on total deposits on the banking system during 1976-2000 (Appendix, Table VI.A.5, Column 2) can be easily calculated. First of all, the changes in deposits held by financial and non-financial institutions should be excluded from changes in total deposits on the banking system, in order to get data on changes in total households' deposits (Appendix, Tables VI.A.6, Column 4). Then one has to separate only changes in the deposits held by agricultural households from such data.

If income was equally distributed between agricultural and non-agricultural sectors, increments in deposits held by agricultural households could be easily estimated by multiplying the share of agriculture in the total disposable income by the increments in total household deposits in the banking system because both sectors had the same saving rate¹¹. However, there is a disparity in income per capita between the agricultural and non-agricultural sectors, hence generating the difference in saving rates between sectors.

Living standard surveys provide data on saving rates of agricultural ($s_{ah} = \frac{S_{ah}}{Y_{ah}}$) and non-agricultural ($s_{nh} = \frac{S_{nh}}{Y_{nh}}$) households. Assuming that changes in household deposits in the banking system are distributed proportionally to the saving of each sector, it follows that:

$$\frac{\Delta D_a}{\Delta D_h} = \frac{S_{ah}}{S_h} \text{ or } \frac{\Delta D_{ah}}{\Delta D_{ah} + \Delta D_{nh}} = \frac{S_{ah}}{S_{ah} + S_{nh}} \quad (\text{VI.10})$$

where ΔD_{ah} and ΔD_{nh} are changes of deposits held by agricultural and non-agricultural households respectively.

ΔD_h is changes of total households' deposits on the banking system¹²

S_{ah} and S_{nh} are saving of agricultural and non-agricultural households respectively

S_h is total households' saving¹³

Assume that the ratio of household saving over income is the same as the ratio of household saving over GDP, and the household shares over GDP between sectors are the same¹⁴, we have:

$$S_{ah} = GDP_{ah} \cdot s_{ah} \quad (VI.11)$$

$$S_{nh} = GDP_{nh} \cdot s_{nh} \quad (VI.12)$$

Hence:

$$\frac{\Delta D_{ah}}{\Delta D_h} = \frac{GDP_{a.Sah}}{GDP_{a.Sah} + GDP_{n.Snh}} \quad (VI.13)$$

Dividing both the denominator and nominator of the right-hand side by total GDP¹⁵:

$$\frac{\Delta D_{ah}}{\Delta D_h} = \frac{gdp_{a.Sah}}{gdp_{a.Sah} + gdp_{n.Snh}} \quad (VI.14)$$

where gdp_a , gdp_n are share of agriculture and non-agriculture over the total GDP respectively.

$$\text{Denote } \frac{gdp_{a.Sah}}{gdp_{a.Sah} + gdp_{n.Snh}} \text{ as } s^*.$$

Changes in deposits held by agricultural households on the banking system are:

$$\Delta D_a = \Delta D_h \cdot s^* \quad (VI.15)$$

The second component of K_{na} is the changes in cash hoarding of the agricultural sector (Table VI.26). This is estimated by multiplying annual change in total cash circulation outside banks by the ratio of agricultural marketed surplus over the total GDP.

Table VI.26.
Change in Cash Hold by Agricultural Sector, 1976-2000
 (current prices, mil. new VNDs,)

Year	Change in Cash	Xa/GDP	Change in Cash Held by Ag.
	1	2	3 = 1*2
1976	46	0.10	5
1977	13	0.08	1
1978	37	0.09	3
1979	34	0.08	3
1980	42	0.14	6
1981	385	0.20	76
1982	803	0.18	141
1983	474	0.20	93
1984	1122	0.23	256
1985	7657	0.12	930
1986	44257	0.11	4814
1987	150000	0.16	23393
1988	819000	0.19	159429
1989	1328000	0.21	273455
1990	1383000	0.21	295824
1991	2684000	0.20	524043
1992	4160000	0.20	821411
1993	3639000	0.19	685481
1994	4406000	0.20	873223
1995	546000	0.21	114151
1996	3469000	0.20	704855
1997	2462000	0.18	444648
1998	1864000	0.17	321159
1999	14582000	0.17	2534852
2000	10653000	0.17	1794114

Source: Data in Column 1 are from Appendix, Table VI.A.5, Column 1. Data in Column 2 are estimated from Table VI.2, Column 2, Table VI.10, Column 8 for 1976-88 and Table VI.19, Column 4 for 1989-2000.

The third component of K_{na} is the investment of agricultural households in non-farm activities in rural areas (Table VI.27). During 1976-88, this investment was insignificant because private investments were depressed under the centrally planned system. Since 1989, non-agricultural activities were encouraged in rural areas and agricultural households put much of their resources for the development of those activities to obtain higher income. The returns from this investment have already been included in non-agricultural income earned by peasant households (F_{an}).

Investment in non-farm activities by agricultural households is estimated by multiplying share of non-agricultural activities in private investment of agricultural sector, which is the residual of the total investment in agriculture minus agricultural investments made by the State and by foreign partners.

Table VI.27.

Investment by Agricultural Institutions in Non-Farm Activities, 1989-2000

(current prices, mil. new VNDs)

Year	Investment in Agriculture				Non-Farm Investment by Agriculture
	Total	State	FDI	Private	
	1	2	3	4 = 1-(2+3)	5 = 4*0.42
1989	351938	238252	2025	111660	47238
1990	675557	409165	0	266392	112697
1991	1344871	615400	38133	691338	292469
1992	2074763	839800	95105	1139857	482214
1993	2649204	1207600	88674	1352930	572354
1994	6944075	1613100	413955	4917020	2080135
1995	4476833	2216500	990852	1269481	537051
1996	4773487	2384400	280238	2108848	892144
1997	5768770	2981200	551074	2236496	946145
1998	5913426	4090900	203813	1618714	684793
1999	6140853	5124200	311988	704665	298107
2000	7145772	5992897	274732	878143	371497

Source: Data in Column 1 is estimated by multiplying agriculture share in total GDP of both agriculture and forestry with total investment in agriculture and forestry, which is provided by Tran, V.T. (ed. 2000, Table 2.1: 243). Data in Column 2 is from Table VI.24, Column 4. Data in Column 3 is from Table VI.33, Column 7. Data in Column 5 is equal to value of Column 4 times 0.42, which is the share of non-farm investment in total investment of private agricultural households, taken from GSO (2000a, Table 5.22: 211). This figure is quite reasonable when comparing with that from the VLSS undertaken by World Bank in 1993 (SPC/GSO, 1994, Table 240: 240).

Table VI.28.
Capital Outflows from Agriculture, 1976-2000
 (current prices, mil. new VNDs)

Year	ΔDa	Change in Cash Holdings	Investment in Non-Farm	K_{na}
	1	2	3	4 = 1+2+3
1976	5	5	-	10
1977	2	1	-	3
1978	4	3	-	7
1979	4	3	-	7
1980	14	6	-	20
1981	38	76	-	114
1982	293	141	-	434
1983	224	93	-	317
1984	548	256	-	805
1985	3346	930	-	4276
1986	17218	4814	-	22032
1987	68186	23393	-	91578
1988	337103	159429	-	496532
1989	438293	273455	47238	758986
1990	344289	295824	112697	752810
1991	1043562	524043	292469	1860074
1992	408216	821411	482214	1711841
1993	203103	685481	572354	1460939
1994	787073	873223	2080135	3740431
1995	1110379	114151	537051	1761582
1996	781610	704855	892144	2378610
1997	962585	444648	946145	2353378
1998	1413953	321159	684793	2419905
1999	4031612	2534852	298107	6864571
2000	4538151	1794114	371497	6703762

Source: Data in Column 1 are from Table VI.25, Column 7. Data in Column 2 are from Table VI.26, Column 3. Data in Column 3 are from Table VI.27, Column 5.

K_{an} : The first component of K_{an} is the loans given by the banking system to agricultural sector. During 1976-90, these loans were solely credits from the State Bank to agricultural cooperatives since capital funds for State farms were accounted for as State investments in agriculture already (Table VI.29). As these loans were given to agriculture annually, the interest payments by agriculture are underestimated as they do not account for the payments on outstanding loans of fixed capital. However, this underestimate is not largely substantial, as most of the loans given in this period were short-term and default payments from agricultural cooperatives was quite prevalent in this period.

Table VI.29.
Credit to Agricultural Sector, 1976-89

(current prices, mil. new VNDs)

Year	Long-Term Credit			Short-Term Credit	Total Credit	Annual Interest Rate (%)	Interest Payment
	Dis-burse ment	Amor-tization	Net Lend-ing				
	1	2	3 = 1-2	4	5 = 3+4	6	7 =5*6/100
1976	11	6	5	41	46	29.8	14
1977	17	7	10	53	64	29.8	19
1978	17	8	9	60	69	29.8	21
1979	16	9	7	64	71	29.8	21
1980	13	12	1	61	62	29.8	18
1981	17	17	1	110	111	29.8	33
1982	49	25	24	195	219	29.8	65
1983	79	33	46	292	339	29.8	101
1984	130	62	68	544	611	29.8	182
1985	289	82	207	1727	1934	29.8	577
1986	2063	306	1757	8641	10398	29.8	3103
1987	6743	1470	5273	30098	35371	31.4	11097
1988	21858	7378	14480	125545	140025	34.5	48293
1989	32660	11011	21649	268158	289807	54.6	158375

Source: Data in Columns 1, 2 and 4 for 1976-84 is from GSO (1985a, Table 33, 34: 50), for 1985-89 from GSO (1991b, Tables 22, 23: 29-30). Data in Column 6 is the annually interest rates, which are computed from monthly interest rates provided by Le, V.T. (ed. 1992, Table 34: 110).

Since 1990-91, with the formation of Vietnam's Bank for Agriculture (VBA), credits were given both to the State, the cooperative and the private sectors in agriculture. There is available data of outstanding loans of VBA for 1990-95, but just part of its loans went to agriculture. Therefore, it is necessary to have data on the share of agricultural loans in total lending of VBA. Multiplying this share by the total lending of VBA will give the figures on outstanding credit of VBA to agriculture during 1990-95 (Table VI.30). In addition, agricultural households also could borrow from other rural financial institutions. Available data shows that this borrowing was about 15 percent of that from VBA in 1993 (SPC/GSO 1994, Table. 8.2.2: 238). Therefore, total outstanding loans to agriculture should be 1.15 times of those from VBA.

Table VI.30.
Outstanding Credit to Agricultural Sector, 1990-95
(current prices, mil. new VNDs)

Year	Outstanding Credit to Agriculture				Interest Payment		
	By VBA	Share of Agriculture	From VBA to Agriculture	To Agriculture	For VBA	From Agriculture to VBA	By Agriculture
	1	2	3 = 1*2	4 = 3*1.15	5	6 = 5*2	7 = 6*1.15
1990	1621672	0.25	405418	466231	208950	52238	60073
1991	2116178	0.25	529045	608401	368206	92052	105859
1992	3302786	0.23	759641	873587	866103	199204	229084
1993	5607719	0.38	2130933	2450573	1260751	479085	550948
1994	7761704	0.53	4113703	4730759	2288024	1212653	1394551
1995	12368478	0.59	7333271	8433261	3265937	1936374	2226830

Source: Data in Columns 1 and 5 are total loans of, and interest payment to Vietnam's Bank for Agriculture (VBA), and taken from CECARDE (1997b: 167-8). Data in Column 2 for 1991-92 are from World Bank (1995b, Table 6.1: 64), and for 1994-95 from CECARDE (1997b: 110, 216).

No available data on the VBA's outstanding credit exists for the period of 1996-2000. Instead, there is only data on the total outstanding credit of the entire banking system and the credit to agriculture, forestry and fishery in 1999-2000. Outstanding credit to agriculture in 1999-2000 is estimated by multiplying the share of agriculture in the total GDP of agriculture, forestry, and fishery with total credit to the three sectors. Data on outstanding credit to agriculture during 1996-98 is estimated by

multiplying the extrapolated share of agricultural loans by the total outstanding credit during 1996-98 (Table VI.31).

Then credit to agriculture during 1991-2000 is estimated as changes in outstanding credit are imposed by the banking system to agriculture (Table VI.34). Credits given to the cooperative and private sectors in agriculture may be used for both agricultural and non-agricultural purposes. However, as agricultural household investment in non-agricultural activities has been accounted in K_{na} , all of these credits can be treated as capital transfers to the agricultural sector.

Table VI.31.
Outstanding Credit to Agricultural Sector, 1996-2000

(current prices, mil. new VNDs)

Year	Total	Share of Credit to Agriculture	Credit to Agriculture	Annual Interest Rate (%)	Interest Payment
	1	2	3 = 1*2	4	5 = 3*4%
1996	50751000	0.20	10315992	16.6	1712455
1997	62201000	0.21	12879164	13.4	1719368
1998	72597000	0.21	15306904	15.2	2330476
1999	94063901	0.21	20189691	13.1	2652421
2000	140302761	0.22	30690056	10.4	3187930
2001	170377935	0.22	37268749	-	-

Source: Data in Column 1 for 1996-2000 are from IMF (2002, Appendix Table 20: 74), and for 2001 from World Bank (2002, Appendix Table 4.1). Data for 1999-2001 needs to be adjusted for changes in the methods of data collection. Before 1999, statistical data covers only the credits of four State-owned commercial banks and 24 non-State-owned banks. Data from 1999 onwards comprise six State-owned commercial banks and 83 non-State credit institutions. Therefore, to ensure consistency, data for 1999-2001 is adjusted to correspond to the share of State-owned commercial banks in the total credits in 1998. Data in Column 2 for 1999-2000 are available from IMF (2002, Appendix, Table 20: 74). Data in Column 2 for 2001 takes the same value as that of 2000, for 1996-98 are extrapolated by the formula: $r^t = r^{t-1} + (r^{1999} - r^{1995})/4$, where r^{1995} is estimated from data on credits to agriculture in 1995 (Table VI.30, Column 4) and total credits (IMF, 1999b, Table 22: 24). Data in Column 5 are annual interest rates, which are computed from the IMF (2002, Appendix, Table 22: 76).

Since 1989, foreign direct investments (FDIs) came to Vietnam along with the introduction of the Law on Foreign Investment in 1987. FDIs in agriculture are accounted as the second component of K_{an} . The statistical system provides only data on registered FDI classified by sector.

The World Bank provides the actual disbursement of FDI in its statistics on the balance of payment, without decomposition between agriculture and non-agriculture. Assuming that the actual rates of FDI disbursement between sectors are the same, one may have the actual inflows of FDI to agriculture by multiplying the share of agriculture total registered FDI by the actual disbursement of FDI (Tables VI.32 and VI.33).

Table VI.32.
Registered Capital of FDI, 1988-2000
(current prices, mil. US\$)

Year	Total	Agriculture and Forestry	Others
	1 = 2+3	2	3
1988	143	0	143
1989	192	1	191
1990	367	0	367
1991	1045	29	1017
1992	1383	41	1342
1993	2480	29	2451
1994	3765	144	3621
1995	6531	272	6259
1996	8497	128	8369
1997	4463	109	4354
1998	3897	79	3818
1999	1568	53	1515
2000	2012	51	1962

Source: Data for 1988-93 are from Kokko and Zejan (1996, Table 11: 32), in which data in Column 2 includes registered capital of FDI in agriculture, forestry and fishery. Data for 1994 is from GSO (1995a, Table 3.15: 63), for 1995 from GSO (1996b, Table 3.9: 52), for 1996 from GSO (1997, Table 110: 185), for 1997 from GSO (1998, Table 138: 248), for 1998 from GSO (1999c, Table 141: 253), for 1999 from GSO (2000c, Table 142: 252), for 2000 from GSO (2001a, Table 188: 370).

Table VI.33.
Flows of FDI into the Agricultural Sector, 1988-2000
 (current prices, mil. US\$)

Year	Total FDI Inflows	Share of Ag. And Forestry	FDI Inflows to Ag. and Forestry	Share of Ag.	FDI Inflows to Ag.	Ex- change Rate	FDI Inflows to Ag. (mil. VNDs)
	1	2	3 = 1*2	4	5 = 3*4	6	7 = 5*6
1988	0	0.00	0	0.83	0	374	0
1989	100	0.01	1	0.84	0	4635	2025
1990	120	0.00	0	0.84	0	5374	0
1991	165	0.03	5	0.87	4	9628	38133
1992	333	0.03	10	0.86	9	11172	95105
1993	832	0.01	10	0.86	8	10582	88674
1994	1048	0.04	40	0.95	38	10908	413955
1995	2276	0.04	95	0.95	90	11029	990852
1996	1813	0.02	27	0.93	25	11016	280238
1997	2074	0.02	51	0.93	47	11705	551074
1998	800	0.02	16	0.93	15	13393	203813
1999	700	0.03	24	0.94	22	14017	311988
2000	800	0.03	20	0.94	19	14494	274732

Source: Data in Column 1 for 1988-89 is from World Bank (1995a, Appendix, Table 3.1), for 1990-94 from World Bank (1998, Appendix, Table 3.1), for 1995-2000 from World Bank (2002, Appendix, Table 3.1). Data in Column 2 is estimated from the share of agriculture and forestry in the total registered capital of FDI, taken from Table VI.32, Columns 1 and 2. Data in Column 4 is the share of agriculture in total GDP of both agriculture and forestry (see source of Table V.2), except for 1988-93 when these are the share of agriculture in total GDP of both agriculture, forestry and fishery (because data in Column 2 for 1988-93 are correspondingly the share of both agriculture, forestry and fishery in total registered capital of FDI). Data in Column 6 is from Table VI.17, Column 2.

Table VI.34.
Private Capital Inflows to Agriculture, 1976-2000
 (current prices, mil. new VNDs)

Year	Credit to Ag.	FDI Inflows to Ag.	K _{an}
	1	2	3 = 1+2
1976	46	-	46
1977	64	-	64
1978	69	-	69
1979	71	-	71
1980	62	-	62
1981	111	-	111
1982	219	-	219
1983	339	-	339
1984	611	-	611
1985	1934	-	1934
1986	10398	-	10398
1987	35371	-	35371
1988	140025	-	140025
1989	289807	2025	291832
1990	313900	0	313900
1991	142170	38133	180303
1992	265186	95105	360291
1993	1576986	88674	1665660
1994	2280185	413955	2694140
1995	3702503	990852	4693355
1996	892376	280238	1172614
1997	2744334	551074	3295408
1998	2764714	203813	2968527
1999	5355006	311988	5666994
2000	10500365	274732	10775097

Source: Data in Column 2 are from Table VI.33, Column 7. Data in Column 1 for 1976-89 is from Table VI.29 - Column 5, for 1990 from Le, V.T. (ed., 1992, Table 31-2: 107-8), for 1991-99 is estimated as the changes in outstanding credit to agriculture, which is taken from Table VI.30 - Column 4 and Table VI.31 - Column 3.

Table VI.35.
Net Private Capital Outflows from Agriculture, 1976-2000
 (current prices mil. new VNDs)

Year	K_{na}	K_{an}	$K_{na} - K_{an}$
	1	2	3 = 1-2
1976	10	46	-36
1977	3	64	-60
1978	7	69	-61
1979	7	71	-64
1980	20	62	-41
1981	114	111	3
1982	434	219	215
1983	317	339	-22
1984	805	611	194
1985	4276	1934	2342
1986	22032	10398	11634
1987	91578	35371	56207
1988	496532	140025	356507
1989	758986	291832	467154
1990	752810	313900	438910
1991	1860074	180303	1679770
1992	1711841	360291	1351550
1993	1460939	1665660	-204722
1994	3740431	2694140	1046291
1995	1761582	4693355	-2931773
1996	2378610	1172614	1205995
1997	2353378	3295408	-942030
1998	2419905	2968527	-548621
1999	6864571	5666994	1197577
2000	6703762	10775097	-4071335

Source: Data in Column 1 is from Table VI.28, Column 4. Data in Column 2 is from Table VI.34, Column 3.

6.4.4. Net state current transfer: ($T_{ga} - T_{ag}$)

where T_{ga} is current transfers from agricultural institutions to the State

T_{ag} is current transfers from the State to agricultural institutions

There is only one way transfer from the State to the agricultural sector (T_{ag}), including State current expenditures on administrative, economic, and social services in agriculture. Data in Vietnam only provides the value of State current expenditures in general, without the sectoral classification into the agricultural and non-agricultural sectors. The State's current expenditures on economic and administrative services were used to pay for the State administrative staffs. This expenditure in agriculture is estimated by multiplying the share of agricultural sector over total State employment by the total State current expenditures on economic and administrative services (Appendix, Tables VI.A.13).

State expenditures on social services could be obtained by multiplying the share of agriculture over the total population by the total State expenditure on social services (Appendix, Table VI.A.14). Combining those two expenditures calculates the current State expenditure in agriculture, as shown in Table VI.36.

Table VI.36.
State Current Expenditure in Agriculture, 1976-2000
 (current prices, mil. new VNDs)

Year	Economic and Administrative Services			Social Services			State Current Expenditure in Agriculture
	Total	Share of Ag. (%)	In Ag.	Total	Share of Ag. (%)	In Ag.	
	1	2	3 = 1*2	4	5	6 = 4*5	7 = 3+6
1976	121	7.3	9	109	68.8	75	84
1977	126	7.3	9	114	68.2	77	87
1978	134	8.3	11	121	68.9	83	94
1979	165	8.6	14	148	68.8	102	116
1980	183	8.8	16	164	69.6	114	130
1981	468	5.5	26	421	69.6	293	319
1982	999	9.0	90	899	69.1	622	712
1983	1245	9.7	120	1120	69.2	775	895
1984	1875	10.6	199	1687	68.9	1163	1361
1985	5053	10.6	534	4549	68.9	3133	3667
1986	25000	10.4	2600	19000	68.5	13020	15620
1987	77000	10.1	7779	71000	68.5	48630	56409
1988	293000	9.9	28955	345000	68.5	236379	265334
1989	849000	10.1	85965	1252000	69.3	867975	953940
1990	1199000	10.0	120191	1998000	68.8	1374442	1494634
1991	2074000	9.7	201798	3343000	69.5	2323391	2525189
1992	3894000	9.2	360187	6245000	70.2	4385395	4745582
1993	6833000	9.8	667512	9639000	70.7	6816945	7484457
1994	7864000	9.0	708171	14042000	70.6	9915347	10623518
1995	9687000	8.7	846387	18249000	69.9	12758711	13605098
1996	10546000	7.0	739472	20317000	69.7	14165551	14905023
1997	11611000	6.7	783211	23708000	69.9	16582870	17366081
1998	11590000	6.1	711216	24420000	69.0	16845162	17556379
1999	11565000	5.7	662861	25576000	68.1	17416402	18079264
2000	13885000	5.6	777183	30691000	68.1	20899546	21676729

Source: Data in Columns 1 and 4 for 1986-92 from World Bank (1995a, Appendix, Table 5.3), for 1993-97 from World Bank (1999, Appendix, Table 5.3), and for 1998-2000 from World Bank (2002, Appendix, Table 5.3). Data in Columns 1 and 4 for 1976-85 is estimated by multiplying averaged share of economic and administrative services, and social services respectively between 1986-99 with total State current expenditure, which is provided by Harvie and Tran, V.H. (1997, Table 3.4: 41). Data in Column 2 is the share of agriculture in the total State employment, estimated from Table VI.A13. Data in Column 5 is the share of agriculture in the total population, as estimated by Table VI.A.14.

6.4.5. Net private current transfer: ($T_{na} - T_{an}$)

where T_{na} represents the current transfers from agricultural institutions to the non-State non-agricultural institutions

T_{ag} represents the current transfers from the non-agricultural institutions to agricultural institutions

This channel mainly takes the form of T_{an} and has been included in F_{an} .

Combining the net intersectoral transfers on the financial side, calculates the net intersectoral resource flows on the financial side, which is summarized in Appendix VI.1, Table VI.A.18. From this result, we may estimate the purchases of non-agricultural goods by agricultural institutions, which are shown in Appendix VI.1, Table VI.A.15.

6.5. Estimated Results of ISRFs

6.5.1. Commodity side

Looking at Table VI.37 and Figure VI.1, at current domestic prices, the purchases of non-agricultural goods by the agricultural sector (M_a) were larger than the sale of agricultural goods to non-agricultural sector (X_a) in both the pre- and post-reform periods. It means that there were net resource inflows to the agricultural sector in the entire studied period.

The ratio between X_a and M_a increased slightly from 59 percent in the pre-reform period to 61 percent in the post-reform period. In the pre-reform period, X_a/M_a was very low at 45 percent in 1976-80. This ratio rose sharply in 1981-84 as agricultural marketed surplus covered 73 percent of purchases of non-agricultural goods. In 1985-88, X_a/M_a slowed down at 62 percent. In the post-reform period, the ratio was quite stable at around 59 to 62 percent.

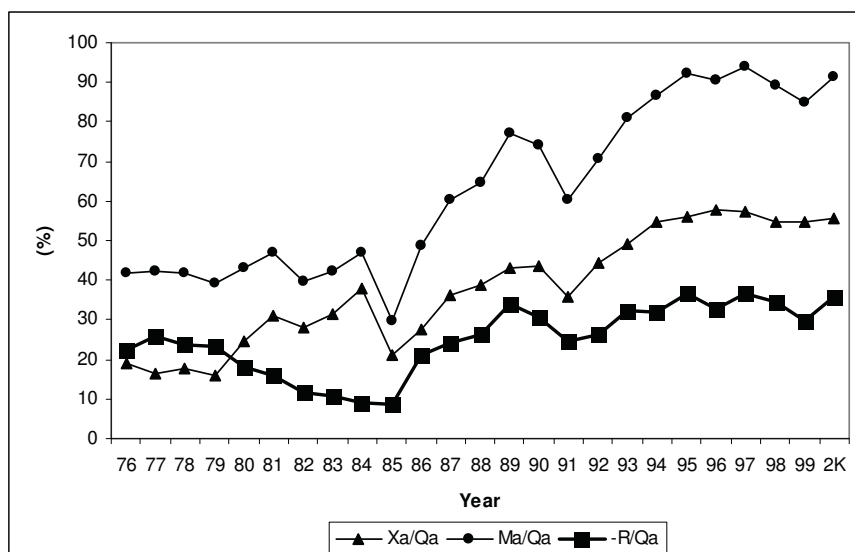
As the share of agricultural output (Q_a), both agricultural marketed surplus, purchases of non-agricultural goods and net resource inflows to agriculture increased over time. In the pre-reform period, agricultural marketed surplus accounted for only 27 percent of agricultural output while the purchases of non-agricultural goods were 45 percent of agricultural output, resulting in the share of net resource inflows over agricultural output at 18 percent. In the post-reform period, X_a/Q_a improved remarkably to 51 percent while M_a/Q_a increased also very fast to 83 percent, leading to the share of net resource inflows over agricultural output at 32 percent.

Table VI.37.
Commodity Side of ISRFs at Current Prices, 1976-2000
 (annual average, mil. new VNDs)

Year	X_a	M_a	R
	1	2	3 = 1-2
1976-80	261	563	-301
1981-84	4050	5356	-1306
1985-88	882163	1475918	-593755
1976-88	272781	455993	-183212
1989-92	12890203	21378873	-8488670
1993-96	41233121	66331305	-25098184
1997-2000	65791552	106108270	-40316718
1989-2000	39971625	64606149	-24634524

Source: Table VI.A.15.

Figure VI.1.
Commodity Side of ISRFs as Share of Agricultural Output, 1976-2000
 (percent, current prices)



Source: Table VI.A.16.

In the pre-reform period, X_a/Q_a was lowest at only 19 percent in 1976-80 and highest at 32 percent in 1981-84. Meanwhile, M_a/Q_a did not changed much from 1976-80 to 1981-84. As a result, the share of net resource inflow over agricultural output decreased significantly from 23 percent in 1976-80 to only 12 percent in 1981-84. In 1985-88, X_a/Q_a was a bit lower than that in 1981-84 while M_a/Q_a jumped from 44 to 51 percent, leading to the increase of the share of net resource inflow over agricultural output to 20 percent.

The 1989 reform had important effects on the agricultural marketed surplus. Compared to the 1985-1988 period, X_a/Q_a increased sharply from 31 to 42 percent while M_a/Q_a also accelerated drastically to 71 percent, and, hence, the share of net resource inflows over agricultural output resulted at 29 percent. Both X_a/Q_a and M_a/Q_a increased significantly to 54 and 88 percent, respectively, in 1993-96. As a result, the share of net resource inflow over agricultural output was 34 percent in 1993-96. Since then, both of the ratios were stabilized at 56, 90 and 34 percent, respectively, in 1997-2000.

In sum, there are three major observations based on the estimate of the commodity side of ISRFs at current domestic prices. First, at current domestic prices there were net resource inflows to agriculture in both the pre- and post-reform periods. There was no change in the direction of ISRFs from the pre- to post-reform periods, meaning that the resource transfer from agriculture through financial accounts in the post-reform period was not as large as expected nor as significant in comparison with other inflows to agriculture.

Second, although the share of agricultural output, agricultural marketed surplus, purchases of non-agricultural goods, and net resource inflows to agriculture increased significantly from the pre-reform to post-reform periods, the share of agricultural marketed surplus over purchases of non-agricultural goods did not changed much. It implies that the linkages between agriculture and non-agriculture had improved considerably since the 1989 reform. However, it is not clear whether the changes in resource inflows had any significant impact on agricultural marketed surplus because one needs to know the composition of purchases of non-agricultural goods and channels for the resource inflows to agriculture.

Third, the 1981 and 1989 reforms in agriculture brought about significant growth of agricultural marketed surplus, though the growth of

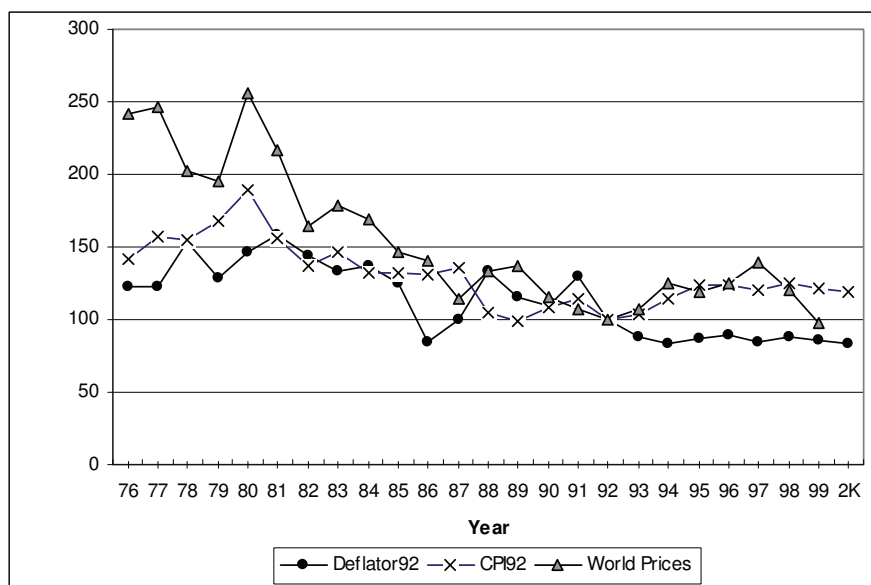
purchases of non-agricultural goods in the latter was much higher than the former. It means that both of the reforms either had positive impact on growth of agricultural output that enhanced the amount of agricultural marketed surplus or improved the effectiveness of agricultural marketing system considerably. In particular, the higher growth of purchase of non-agricultural goods after the 1989 reform may reflect changes in the mechanism and institutional framework for ISRFs between the pre- and post-reform periods.

6.5.2. Terms of trade effects

To calculate the ISRFs at real prices, one needs to select the type of price index, which should reflect the real opportunity cost of agricultural commodities in terms of non-agricultural commodities. First of all, it is suggested that the terms of trade should reflect the composite price indexes of intersectoral sales from and purchases to agriculture (Karshenas 1990). It means that we need to know the actual value of intersectoral sales and purchases classified by groups of commodities¹⁶ and their corresponding price indexes.

Unfortunately, it is not possible to do this for three reasons: (i) there is no continuous data on composition of intersectoral sales and purchases; (ii) Vietnam's statistics only provide price indexes for the major consumption goods like rice, meats, cloths, paper, kerosene, electricity, etc. However, no data is available on price indexes of the major industrial inputs for agricultural production such as fertilizer, pesticides, fuel, machinery, cement, metal products, etc.; (iii) data availability only allows the estimate of consumption price indexes (purchaser prices), and we cannot estimate producer prices of those intersectoral sales and purchases classified by groups of commodities.

Figure VI.2.
Terms of Trade, 1976-2000 (index, 1992 = 100)



Source: Tables VI.A.23-25.

To overcome the above difficulty, it is necessary to select among three types of price indexes, i.e., domestic GDP deflators, domestic consumer prices, and world prices (Figure VI.2). To estimate the real ISRFs at domestic prices, the domestic GDP deflator index is selected as it is calculated at producer prices that are consistent with the data used to estimate ISRF at current domestic prices. It is argued below that this solution is quite acceptable since the bias from the true terms of trade cannot misguide the direction and magnitude of real intersectoral resource flows significantly.

Looking at Figure VI.2, the CPI-based terms of trade for agriculture are mostly higher than those of the GDP-deflator-base during the studied period for two major reasons. Most importantly, CPI does not reflect price variation of the major intermediate inputs and investment goods sold to agriculture such as fertilizer, pesticides, fuel, machinery, cement, metal products, etc. It means that the CPI-based terms of trade may overestimate the true terms of trade for agriculture. In contrast, the

GDP-deflator does include some consumption, intermediate, and investment goods, which may not be purchased by agriculture, hence the GDP-deflator-based terms of trade may underestimate the true terms of trade for agriculture¹⁷. As a result, we can expect that the true terms of trade can be located somewhere between the CPI- and GDP-deflator-based terms of trade.

If so, the result cannot significantly change the conclusions on the variation of terms of trade and their impacts on the direction and magnitude of the real intersectoral resource flows for two reasons. First, we still can see the declining tendency of the terms of trade from the pre- to post-reform period. Second, it is argued later that terms of trade play only a minor role in determining the direction and magnitude of the real intersectoral resource flows.

Using world terms of trade as the real opportunity cost of agricultural commodities, we also need to know the actual prices of agricultural and non-agricultural commodities in the world and domestic markets. Data availability, instead, only allows for the estimate based on price indexes. Yet, we still have actual prices of rice (proxy for agricultural goods) and urea (proxy for non-agricultural goods) during 1989-2000 both in the domestic and world markets, in order to estimate the gap of actual terms of trade between the domestic and world markets.

The world price indexes are used to estimate the differences in agricultural terms of trade between domestic and world markets. Given that Vietnam is a small country, the benchmark price indexes should be taken in the year when the gap between agricultural terms of trade in the domestic and world markets is narrowest. Given that the market system in Vietnam only developed strongly since the economic reform in 1989, the base year price is selected in the post-reform period only. In addition, taking actual prices of rice and urea as proxies for agricultural and non-agricultural commodities respectively, it is necessary to select the price indexes in the year when the domestic relative prices of rice and urea are closest to those in the world markets.

Consequently, it is necessary to use the price indexes to estimate the real ISRFs both at domestic prices and in comparison with world prices. In both ways, the main problem is to select the base year for price indexes that has two basic characteristics. First, in order to estimate real ISRFs at domestic prices, the base year should be the 'most normal' year

when economic growth, inflation, agricultural production, weather, etc. are all at the normal level, and there is no shock to the economy or any significant change in economic policies. Second, in order to estimate the gap between the domestic and world terms of trade, the base year should have the narrowest gap between the domestic relative prices of rice and urea and those in the world markets.

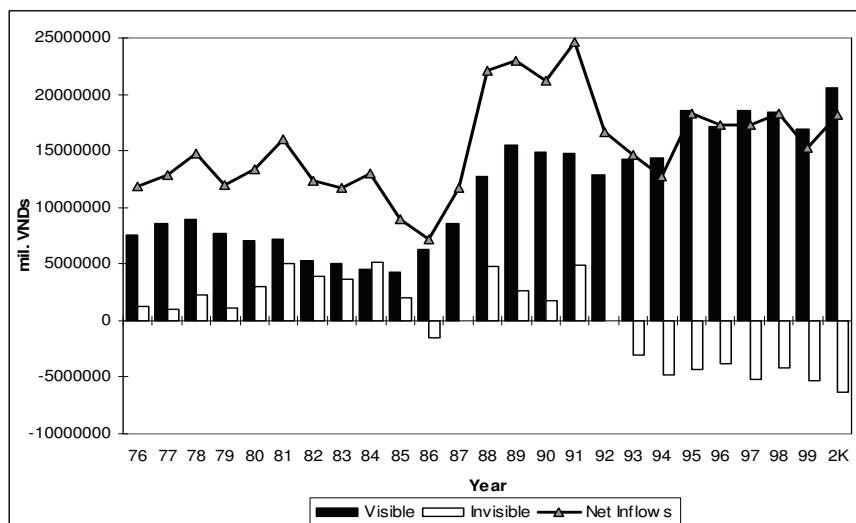
The year of 1992 is selected as the base year for three reasons. First, it was the typical year in the post-reform period as economic growth was at average level of 8 percents, inflation was slowed down to around 17 percent as a result of stabilization programs since 1989, and there was no significant change in economic policies. The only abnormal phenomenon in 1992 was high growth of agricultural sector at 7.5 percent, attributed to good weather. Assuming that the good harvest in 1992 deflated the prices of agricultural commodities, agricultural terms of trade in 1992 should have been the lowest in the post-reform period. Yet, Figure VI.2 shows that this is not true, as agricultural terms of trade (calculated by domestic GDP deflator¹⁸) were not at their lowest in 1992.

Second, if the relative prices between rice and urea are taken as the proxies for agricultural terms of trade, the ratio in the domestic market was closest to that in the world market in 1992 and 1995 (Appendix, Table VI.A.26).

Lastly, the sum of the square deviation between the terms of trade calculated by CPI and GDP deflators in 1992 was lower than that in 1995 (Appendix, Table VII.A.27). It means that the base year price of 1992 is more reliable than that in other years.

Looking at Table VI.38 and Figure VI.3, there were real net resource inflows to agriculture, calculated at 1992 domestic prices, in both the pre- and post-reform periods. In absolute value, the real net resource inflows in the post-reform period were 1.5 times higher than those in the pre-reform periods. This change was mostly due to the growth of the visible net inflows by 2.3 times. Meanwhile, there was change in the direction of resource transfers through the terms of trade from inflows in the pre-reform period to outflows in the post-reform period. In both periods, the visible flows played a more important role in the real net resource flows. The invisible inflows in the pre-reform period and invisible outflows in the post-reform period covered only 29 and 17 percent of visible inflows, respectively.

Figure VI.3.
Real Net Resource Inflows, 1976-2000
 (GDP-deflator 1992 prices)



Source: Table VI.A.21.

Table VI.38.
Real ISRFs at Domestic Prices, 1976-2000
 (1992 prices, mil. new VNDs)

Period	Visible	Invisible	r
	1	2	3 = 1+2
1976-80	-7965896	-1740399	-9706295
1981-84	-5520573	-4447790	-9968362
1985-88	-7966294	-1314915	-9281209
1976-88	-7213611	-2442524	-9656135
1989-92	-14534271	-2347137	-16881409
1993-96	-16101760	4022845	-12078915
1997-2000	-18627865	5249118	-13378747
1989-2000	-16421299	2308275	-14113024

Source: Table VI.A.21.

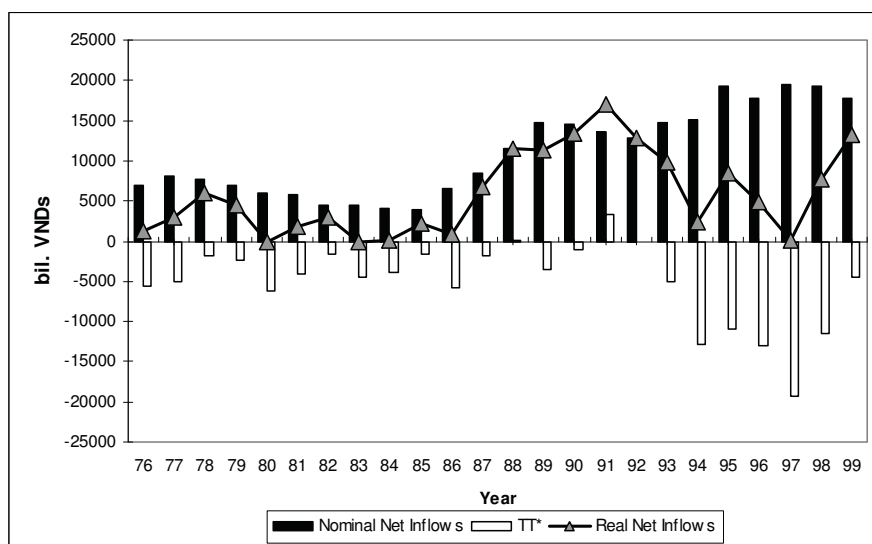
In the pre-reform period, invisible inflows were mostly affected by the changes in the terms of trade and these inflows were highest in 1981-84 when agricultural terms of trade were also at their highest, compared to those in 1992. In the post-reform period, invisible inflows were more likely to depend on the amount of agricultural marketed surplus¹⁹. In 1981-84 and 1989-92, the share of invisible inflows was highest in total real net inflows in the pre- and post-reform periods respectively. The high invisible inflows in 1981-84 was mostly due to high agricultural terms of trade, while it was due to the high agricultural marketed surplus in 1989-92 when agricultural terms of trade were lower than those in 1981-84. Since 1993 there have been, instead, large amounts of invisible outflows from agriculture along with high levels of agricultural marketed surplus. Nevertheless, the total real net resource inflows still increased, reflecting the very high volume of visible inflows in the post-reform period.

Table VI.39 and Figure VI.4 shows the real ISRFs, calculated at domestic 1992 prices and based on the gap between the international and domestic terms of trade. For most of the time, agricultural terms of trade in the world market were higher than those in the domestic market²⁰. Two exceptional cases were in 1987 and 1991. It is noteworthy that the gap between domestic and international terms of trade for agriculture was higher in the pre-reform period, compared to that in the post-reform period.

In the pre-reform period, agricultural terms of trade in the world market were 43 percent higher than those in the domestic market and the gap between the two terms of trade²¹ showed declining trend from 71 to 27, and then to 24 percent in 1976-80, 1981-84 and 1985-88 respectively.

In the post-reform period, the gap between the international and the domestic agricultural terms of trade was 25 percent and it was increasing from 2 to 37, then to 39 percent in 1989-92, 1993-96 and 1997-99 respectively. Albeit, there were still real net resource inflows to agriculture in both the pre- and post-reform periods, demonstrating the significance of visible net resource inflows.

Figure VI.4.
Real Net Resource Inflows Compared to the World Terms of Trade, 1976-99
 (1992 prices)



Source: Table VI.A.22.

Table VI.39.
Real ISRFs Compared to the World Terms of Trade, 1976-2000
 (1992 prices, mil. new VNDs)

Period	Visible	Invisible	r*
	1	2	3 = 1+2
1976-80	-7139247	4222440	-2916807
1981-84	-4706193	3501729	-1204464
85-1988	-7613402	2289279	-5324122
76-1988	-6536509	3405864	-3130645
89-1992	-13920375	291201	-13629174
1993-96	-16773069	10427832	-6345237
1997-99	-18791493	11772934	-7018559
1989-99	-16286205	7108630	-9177575

Source: Table VI.A.22.

Based on the gap between the international and the domestic terms of trade, real net resource inflows in the post-reform period were three times higher than those in the pre-reform period. This increase was mainly due to the growth of net visible inflows. From the pre- to post-reform periods, net visible inflows increased by 2.5 times while net invisible outflows increased two times²². The higher volume of invisible outflows in the post-reform period, compared to that in the pre-reform period, also implies that the growth of the agricultural marketed surplus played a significant role in explaining the changes in the invisible outflows between the pre- and post-reform periods as the gap between international and the domestic agricultural terms of trade were narrower in the post-reform period compared to those in the pre-reform period.

In the pre-reform period, invisible outflows were highest in 1976-80 and it shows a declining tendency as the gap between the international and the domestic agricultural terms of trade narrowed. In the post-reform period, the increase of invisible outflows resulted both from the growth of agricultural marketed surplus and the widening gap between international and domestic agricultural terms of trade²³.

In consequence, at whatever prices, the investigation shows that there were real net resource inflows to agriculture in both the pre- and post-reform periods. Agricultural marketed surplus (X_a), purchases of non-agricultural goods (M_a) and net resource inflows to agriculture increased from the pre- to post-reform periods, in which M_a increased faster than X_a did, resulting in higher net resource inflows in the post-reform period than in the pre-reform periods.

Calculated at 1992 domestic prices, there were changes in the direction of invisible transfers from inflows to outflows between the pre- and post-reform periods as agricultural terms of trade were lower after 1993 than they were in the benchmark year of 1992. However, the invisible flows were smaller than the visible net inflows in both periods and the total real net resource inflows in the post-reform periods were still higher than those in the pre-reform period.

Based on the gap between the international and the domestic terms of trade, there were invisible outflows from agriculture in both the pre- and post-reform periods. Here, the latter was much higher than the former. Albeit, the total real net inflows to agriculture in the post-reform period

were considerably higher than those in the pre-reform period, thus, reflecting the sharp increase in the net visible inflows after the 1989 reform.

Calculated at both the domestic GDP deflator-based and the world-based terms of trade in 1992, the invisible flows in the pre-reform period varied with changes in the agricultural terms of trade. In contrast, the changes in the invisible flows in the post-reform period were more likely to depend on the volume of the agricultural marketed surplus.

The above investigation brings about three important implications for the discussion on the interaction between agriculture and non-agriculture in Vietnam. First, opposed to conventional perception, there was no change in the direction of ISRFs between the pre- and post-reform periods at whatever prices. Even though agricultural marketed surplus increased significantly from the pre- to post-reform periods, the purchases of non-agricultural goods by agricultural sector increased at a faster rate, leaving higher net resource inflows to agriculture in the post-reform period, compared to those in the pre-reform period.

Second, also opposed to conventional perception, there were invisible inflows to agriculture in the pre-reform period as agricultural terms of trade, in fact, were very high. In the post-reform period after 1993, the terms of trade disfavored the agricultural sector when the agricultural marketed surplus started increasing. This is consistent with the findings in Chapter V that the availability of agricultural marketed surplus at low prices contributed significantly to capital accumulation by reducing the prices of wage goods, and, hence, increased profits within the non-agricultural sector.

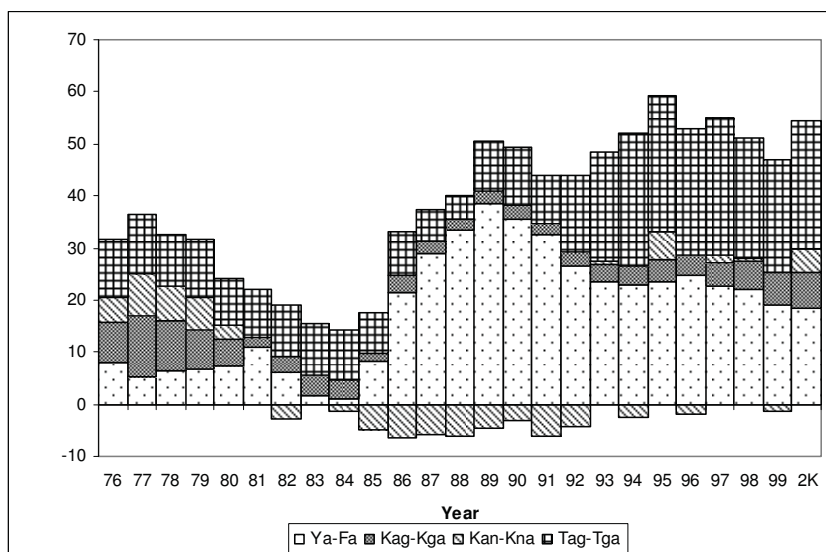
Finally, in both periods, the major component of real net resource inflows to agriculture was the visible inflows, in which the net visible inflows in the post-reform period were much higher than those in the pre-reform period. In addition, the net visible inflows were more than sufficiently covered invisible outflows, calculated at both benchmark domestic and world prices, in the post-reform period, particularly after 1993. It implies that resource transfers from agriculture through the capital account in the post-reform period were not as large as expected nor as significant compared to other channels of financial inflows to agriculture. This point will be clarified further by looking at the composition of the financial side of ISRFs below.

6.5.3. Financial side

Looking at Table VI.40 and Figure VI.5, most of net financial inflows came through factor payments and current accounts in both the pre- and post-reform periods. In the pre-reform period, the share of net inflows through factor payments and current accounts amounted to 84 percent of the total net financial inflows, in which the majority came from State current expenditures on agriculture²⁴. As a share of the agricultural GDP, State current transfers to agriculture stabilized at around 9 percent and declined from 11 to 9 then to 7 percent in 1976-80, 1981-84 and 1985-88, respectively.

Figure VI.5.
Composition of Net Resource Inflows as Share of Agricultural GDP, 1976-2000

(percent, current prices)



Source: Table VI.A.20.

Table VI.40.
Financial Side of ISRFs at Current Prices, 1976-2000
 (annual average, mil. new VNDs)

Accounts	1976-80	1981-84	1985-88	1989-92	1993-96	1997-2000
I. Factor Payments	-68	-285	-575991	-6517526	-11367208	-16008703
$F_{ga} + F_{na}$	52	413	87286	1263757	3984921	5458599
F_{an}	120	698	663277	7781283	15352129	21467302
II. Capital Transfers	-131	-199	67494	458692	-2076452	-5638402
II.1. Government	-78	-296	-39179	-525654	-1855400	-4547299
K_{ga}	0	0	0	0	0	0
K_{ag}	78	296	39179	525654	1855400	4547299
II.2. Private	-53	97	106673	984346	-221052	-1091102
K_{na}	10	417	153605	1270928	2335390	4585404
K_{an}	62	320	46932	286582	2556442	5676506
III. Current Transfers	-102	-822	-85258	-2429836	-11654524	-18669613
T_{ga}	0	0	0	0	0	0
T_{ag}	102	822	85258	2429836	11654524	18669613
IV. $R = I + II + III$	-301	-1306	-593755	-8488670	-25098184	-40316718

Source: Table VI.A.18.

Net inflows through the capital account accounted for 16 percent of the total net financial inflows, in which the majority came from State investments in agriculture. In fact, except for the period between 1976 and 1980, private capital transfers witnessed net capital outflows from agriculture, although the figures reported in 1985-88 are believed to be over-estimated²⁵. State investment in agriculture accounted for 5 percent in the pre-reform period, and this share showed a declining trend from 8 to 5 then to 2 percent in 1976-80, 1981-84 and 1985-88, respectively.

In the post-reform period, shares of net inflows through factor payments and current accounts rose to 95 percent of the total net financial inflows to agriculture, in which the major contribution came from net factor payment inflows. In the post-reform period, net factor payment inflows to agriculture accounted for 26 percent of the agricultural GDP. This share was highest at 33 percent in 1989-92, and decelerated to 24 and 21 percent in 1992-96 and 1997-2000, respectively. Although the share of State current transfers over total net resource inflows in the post-reform period was a bit lower than that of the pre-reform period (40 percent versus 41 percent), as the proportion of the agricultural GDP

it increased sharply to 20 percent in the post-reform period. This transfer showed an ascending tendency from 11 percent in 1989-92 to around 24 percent in 1993-96 and 1997-2000.

Net capital inflows accounted for 5 percent of total net financial inflows in the post-reform period, in which inflows of State capital to agriculture were higher than the net private capital outflows from agriculture. As the proportion of the agricultural GDP, State investment in agriculture was 4 percent in the post-reform period; a bit lower than that in the pre-reform period. This transfer was increasing from 3 to 4 then to 6 percent in 1989-92, 1993-96 and 1997-2000, respectively. Meanwhile, net private capital outflows were reported only in 1989-92. Since 1993, there were net private capital inflows to agriculture for most of the time.

As a result, the investigation of the financial side of ISRFs shows three important conclusions. First, the main channels for net financial inflows to agriculture were factor payments and current accounts in which the role of the latter was relatively more important in the pre-reform period. Although the share of State current transfers over net financial inflows to agriculture in the post-reform period was lower than that in the pre-reform period, the share of State current transfers over agricultural GDP was relatively higher in the post-reform period. It shows the decline in the size of agriculture, relatively to the State budget, in particular, and of the entire economy in general. Meanwhile, net factor payment inflows to agriculture increased sharply after the 1989 reform. This change had important implications for the differences in the composition of commodity inflows (consumption, intermediate and investment goods) between the pre- and post-reform periods, since net factor payments accounted for a significant bulk of disposable income of agricultural institutions.

Second, State investment in agriculture in the pre-reform period was higher than that in the post-reform period, both as the share of total net financial inflows as well as the share of agricultural GDP. It is opposed to the conventional perception that agriculture was relatively disfavored in investment policies in the pre-reform period, compared to the post-reform period. Since the State played an important role in agricultural investments in both the pre- and post-reform period, the proportionally low share of State investments in the agricultural GDP in the post-

reform period in combination with the higher share of net inflows to agriculture through the factor payments and current accounts mentioned earlier suggests that the relatively high net resource inflows may have been used to finance the consumption boom within the agricultural sector in the post-reform period. This point will be discussed in more detail later in Chapter VII.

Third, there is no evidence that significant resources were transferred from agriculture through capital accounts. This is also opposed to the conventional perception that agriculture may have contributed significantly to the capital accumulation in the non-agricultural sector through private capital transfers.

Appendix of Chapter 6.

6.A.1. Statistical data

Table VI.A.1.
GDP by Expenditure, 1976-2000

(current prices, mil. new VNDs)

Year	GDP	Con- sumption	Invest- ment	Export	Import	Net Ex- port
	1	2	3	4	5	6 = 4-5
1976	1925	2036	424	124	570	-446
1977	2073	2170	468	171	645	-474
1978	2474	2590	476	166	662	-496
1979	2835	2992	479	142	676	-534
1980	3300	3455	474	176	683	-507
1981	7494	8003	914	493	1699	-1206
1982	16228	16739	2030	1071	2994	-1923
1983	21395	22399	2783	2186	5414	-3228
1984	33612	34046	4828	2649	7116	-4467
1985	117000	117000	14000	9041	24041	-15000
1986	599000	592000	75000	40000	90000	-50000
1987	2870000	2829000	421000	172000	425000	-253000
1988	15420000	14925000	2214000	1050000	2756000	-1706000
1989	28093000	27096000	4114000	6700000	9657000	-2957000
1990	41955000	40736000	6025000	11084000	14960000	-3876000
1991	76707000	68959000	11506000	23714000	27639000	-3925000
1992	110532000	95314000	19498000	38405000	42921000	-4516000
1993	140258000	116719000	34020000	40286000	52582000	-12296000
1994	178534000	148037000	45483000	60725000	77591000	-16866000
1995	228892000	187223000	62131000	75106000	95925000	-20819000
1996	272037000	225231000	76450000	111177000	141016000	-29839000
1997	313624000	250584000	88754000	135180000	160706000	-25526000
1998	361016000	283444000	104875000	161910000	188281000	-26371000
1999	399942000	310690000	109017000	199836000	211254000	-11418000
2000	444139000	324258000	130827000	241401000	251747000	-10346000

Source: Data for 1976-85 is from Tran, V.T. (ed. 2000, Tables 4.2 and 7.19: 262, 304-5), for 1986-2000 from GSO (2000b: 132-4).

Table VI.A.2.
GDP, GNP, Gross National Disposable Income (NDI), Consumption & Saving, 1976-2000

(current prices, mil. new VNDs)

Year	GNP	NDI	Con- sumption	Gross Saving	Domestic Saving	Foreign Transfer
	1	2	3	4 = 2-3	5 = 1-4	6 = 4-5
1976	1930	2341	2036	305	-106	411
1977	2070	2382	2170	212	-100	312
1978	2470	2784	2590	194	-120	314
1979	2840	3290	2992	298	-152	450
1980	3300	3812	3455	357	-155	512
1981	7490	8052	8003	49	-513	562
1982	16230	17861	16739	1122	-509	1631
1983	21390	23013	22399	614	-1009	1623
1984	33610	35136	34046	1090	-436	1526
1985	117000	123364	117000	6364	0	6364
1986	593896	596847	592000	4847	1896	2951
1987	2833040	2848440	2829000	19440	4040	15400
1988	15045635	15236586	14925000	311586	120635	190951
1989	27601000	29889000	27096000	2793000	505000	2288000
1990	39284000	44293000	40736000	3557000	-1452000	5009000
1991	72620000	78845000	68959000	9886000	3661000	6225000
1992	106757000	113417000	95314000	18103000	11443000	6660000
1993	134913000	144751000	116719000	28032000	18194000	9838000
1994	174017000	185906000	148037000	37869000	25980000	11889000
1995	226391000	239569000	187223000	52346000	39168000	13178000
1996	267737000	281128000	225231000	55897000	42506000	13391000
1997	307876000	318435000	250584000	67851000	57292000	10559000
1998	354368000	369724000	283444000	86280000	70924000	15356000
1999	394614000	410018000	310690000	99328000	83924000	15404000
2000	-	-	324258000	-	-	-

Source: Data in Column 3 is from Table VI.A.1, Column 2. Data in Columns 1 and 2 for 1989-99 is from GSO (2000b: 151-152), for 1976-86 is estimated by: $GNP = GDP + \text{Net Factor Payment from abroad (NFP)}$ and $GNDI = GNP + \text{Net Current Transfer from abroad (NCT)}$. NFP is estimated for only 1986-88 as share of net export, provided by World Bank (1995a, Appendix, Table 3.1). NCT for 1976-85 is the grant aid received by the State (Harvie and Tran, V.H. 1997: 42), with the assumption that all foreign aid went directly to the State under the centrally planned system. NCT for 1986-88 is estimated similarly to NFP.

Table VI.A.3.
Total Income of Agricultural Sector, 1976-2000
 (current prices, mil. new VNDs)

Year	F _{aa}	Non-Farm Income	Interest Payment	Y _a
	1	2	3	4 = 1+2+3
1976	716	88	8	811
1977	714	77	9	799
1978	905	104	10	1019
1979	993	117	12	1121
1980	1379	162	16	1558
1981	3397	468	30	3895
1982	7014	661	131	7805
1983	8835	436	208	9478
1984	13495	461	397	14353
1985	44963	3779	1551	50292
1986	174113	23321	27192	224626
1987	908431	201577	112574	1222582
1988	5642811	1748423	534691	7925925
1989	9172289	3648768	915684	13736741
1990	13154327	5016292	407676	18578294
1991	25753241	9396838	689576	35839654
1992	30003116	10453627	596671	41053413
1993	32990052	10951255	334641	44275948
1994	38562549	12166272	664580	51393402
1995	47776170	16471272	866669	65114111
1996	56167545	19449364	504461	76121370
1997	60785632	19447794	526995	80760421
1998	71266524	20924366	766267	92957156
1999	77709579	20769734	824666	99303979
2000	82201870	21970406	638981	104811257

Source: Data in Column 1 are from Table VI.21, Column 2. Data in Column 2 are from Table VI.22, Column 3. Data in Column 3 are from Table VI.22, Column 6.

Table VI.A.4.
Household Gross Disposable Income by Sectors, 1989-2000
 (current prices, mil. new VNDs)

Year	DY _h	DY _{ah}			DY _{nh}	DY _{ah} / DY _h	DY _{nh} / DY _h
		Y _a	T _{ag}	DY _{ah}			
	1	2	3	4 = 2+3	5 = 1-4	6 = 4/1	7 = 5/1
1989	26922000	13717808	953940	14690681	12366629	0.55	0.45
1990	-	18570787	1494634	20072928	-	0.52	0.48
1991	-	35830948	2525189	38364843	-	0.50	0.50
1992	97187000	41047036	4745582	45798995	51459155	0.47	0.53
1993	-	44272624	7484457	51760405	-	0.45	0.55
1994	-	51388225	10623518	62016920	-	0.43	0.57
1995	195522000	65108934	13605098	78719209	116882976	0.40	0.60
1996	226731000	76118782	14905023	91026394	136209026	0.40	0.60
1997	249759000	80758116	17366081	98126502	152373759	0.39	0.61
1998	285895000	92954404	17556379	110513535	175876152	0.39	0.61
1999	308444000	99302017	18079264	117383243	192400692	0.38	0.62
2000	-	104810155	21676729	126487986	-	0.38	0.62

Source: Data in Column 1 are from GSO (2000b: 171-2) and Vu, Q.V., *et al.* (2002, Table 64: 594). Data in Column 2 are from Table VI.A.3, Column 4, with the assumption that all of income belongs to agricultural households. Data in Column 3 are from Table VI.36, Column 7.

Table VI.A.5.
Money Demand, 1975-2000

(current prices, mil. new VNDs)

Year	Cash	Deposit			M2
		Total	Demand Deposit	Saving Deposit	
		1	2 = 3+4	3	4
1975	132	104	-	-	236
1976	177	137	-	-	314
1977	190	150	-	-	340
1978	227	170	-	-	397
1979	261	198	-	-	458
1980	303	232	-	-	535
1981	688	530	-	-	1218
1982	1490	1217	-	-	2707
1983	1964	1694	-	-	3658
1984	3086	2803	-	-	5889
1985	10743	10250	-	-	20993
1986	55000	55000	54000	1000	110000
1987	205000	266000	237000	29000	471000
1988	1024000	1545000	1303000	242000	2569000
1989	2352000	5068000	1615000	3453000	7420000
1990	3735000	7623000	1578000	6045000	11358000
1991	6419000	13882000	2707000	11175000	20301000
1992	10579000	16565000	4232000	12333000	27144000
1993	14218000	18070000	4870000	13200000	32288000
1994	18624000	24326000	5005000	19321000	42950000
1995	19170000	33043000	6870000	26173000	52213000
1996	22639000	41451000	10212000	31239000	64090000
1997	25101000	56268000	14681000	41587000	81369000
1998	26965000	75400000	20200000	55200000	102365000
1999	41547000	119100000	28200000	90900000	160647000
2000	52200000	170700000	41900000	128800000	222900000

Source: Data in Column 1 for 1986-88 is from WB (1995a, Appendix, Table 4.1), for 1989-93 from WB (1995b, Annex, Table 1: 93) and IMF (1995b, Table 26: 26), for 1994-95 from WB (1997, Appendix, Table 4.1) and IMF (1999b, Table 21: 23), for 1996-99 from WB (2000a, Appendix, Table 4.1) and IMF (2002, Table 17: 71). Data in Column 1 for 1975-86 is estimated by the formula: $Cash^t = Cash^{t+1}/(GDP^{t+1}/GDP^t)$. Data in Column 2 for 1975-85 are estimated as the extrapolated share of total GDP (see Table VI.A.6). Data in Columns 3 and 4 for 1986-88 is from WB (1995a, Appendix, Table 4.1), for 1989-93 from IMF (1995b, Table 26: 26), for 1994-97 from IMF (1999b, Table 22: 24), and for 1998-2000 from IMF (2002, Table 17-9: 71-3).

Table VI.A.6.
Household Deposits in the Banking System, 1975-2000
 (current prices, new mil. VNDs)

Year	D _h	D _h /D	D	D _h /GDP	D/GDP	GDP
	1 = 2*3	2	3 = 1/2	4 = 1/6	5 = 3/6	6
1975	52	0.49	104	0.04	0.07	1434
1976	68	0.49	137	0.04	0.07	1930
1977	74	0.49	150	0.04	0.07	2070
1978	84	0.49	170	0.03	0.07	2470
1979	98	0.49	198	0.03	0.07	2840
1980	115	0.49	232	0.03	0.07	3300
1981	262	0.49	530	0.04	0.07	7490
1982	602	0.49	1217	0.04	0.07	16230
1983	838	0.49	1694	0.04	0.08	21390
1984	1387	0.49	2803	0.04	0.08	33610
1985	5072	0.49	10250	0.04	0.09	117000
1986	27214	0.49	55000	0.05	0.09	599000
1987	131617	0.49	266000	0.05	0.09	2870000
1988	764466	0.49	1545000	0.05	0.10	15420000
1989	2507646	0.49	5068000	0.09	0.18	28093000
1990	4083465	0.54	7623000	0.10	0.18	41955000
1991	8003720	0.58	13882000	0.10	0.18	76707000
1992	10227741	0.62	16565000	0.09	0.15	110532000
1993	11110143	0.61	18070000	0.08	0.13	140258000
1994	14893533	0.61	24326000	0.08	0.14	178534000
1995	20144860	0.61	33043000	0.09	0.14	228892000
1996	19164091	0.46	41451000	0.07	0.15	272037000
1997	20137685	0.36	56268000	0.06	0.18	313624000
1998	31410612	0.42	75400000	0.09	0.21	361016000
1999	64178362	0.54	119100000	0.16	0.30	399942000
2000	91983596	0.54	170700000	0.21	0.38	444139000

Source: Data in Column 1 for 1976-78 is from GSO (1980, Table 67: 128), and for 1981 from Tran, L.S. (1990: 239). Assuming no change in the share of households over total deposits during 1976-89, one can calculate the figure households' deposits in 1986. Data in Column 2 are share of households over total net saving (excluding government) for 1989, 1992 and 1995-99 available from GSO (2000b: 175-88) and Vu, Q.V., *et al.* (2002, Table 34-8: 488-524), and then extrapolating for other years. Using D_h/GDP available for 1976-78, 1981, 1986, and 1989 onwards, one can extrapolate D_h/GDP for other years. Similarly, D/GDP can be estimated. Data in Column 3 for 1986-2000 are from Table VI.A.5, Column 2.

Table VI.A.7.
Sources of Monthly Agricultural Household Income, 1976-88
 (current prices, new VNDs)

Year	Total	Co-operatives	Sub-economy	Others
	1 = 2+3+4	2	3	4
1976	18.74	6.48	10.21	2.05
1977	20.36	5.93	12.45	1.98
1978	20.26	5.90	12.27	2.09
1979	22.39	6.45	13.58	2.36
1980	4.90	12.03	31.74	5.13
1981	5.40	13.59	35.98	6.82
1982	121.70	26.41	84.70	10.47
1983	369.70	97.60	254.72	17.38
1984	581.60	101.90	460.50	19.20
1985	-	-	-	-
1986	745.00	215.00	442.00	88.00
1987	-	-	-	-
1988	-	-	-	-

Source: Data for 1976-79 was collected in surveys in the North only. Data for 1980-86 was surveyed in the entire country. Data is adopted from the following sources: 1976 - GSO (1979, Table 235: 344), 1977-79 - GSO (1982, Table 268: 381), 1980-81, 1983-84 - GSO (1985a, Table 276: 361), 1982 - GSO (1983, Table 261: 380), 1986 - Fforde and de Vylder (1986, Table 3.14: 110). The last one is adopted from the handwritings of GSO.

Table VI.A.8.
Sources of Monthly Agricultural Household Income, 1989-99
 (current prices, new VNDs)

Year	Total	Farm	Wages	Non-Farm	Others
	1 = 2+3+4+5	2	3	4	5
1989	21428	13293	-	5288	2847
1990	-	-	-	-	-
1991	-	-	-	-	-
1992	-	-	-	-	-
1993	-	-	-	-	-
1994	136730	91000	17060	11650	17020
1995	167920	110860	21230	16990	18840
1996	183200	121580	23660	18440	19520
1997	-	-	-	-	-
1998	-	-	-	-	-
1999	238160	170200	27090	18400	22470

Source: Data for 1989 is from Le, V.T., *et al.* (1991: 85), for 1994-96 from GSO (1999b, Table 1.3: 33), for 1999 from GSO (2000a, Table 1.3: 47).

Table VI.A.9.
Monthly Expenditure of Agricultural Households
 (current prices, new VNDs)

Year	Total	Food	Education	Health	Clothing	Housing	Others
	1	2	3	4	5	6	7
1976	1.83	1.27	0.04	0.04	0.13	0.07	0.28
1977	2.11	1.51	0.04	0.05	0.16	0.08	0.28
1978	1.99	1.42	0.04	0.04	0.15	0.08	0.27
1979	2.23	1.59	0.04	0.05	0.17	0.09	0.30
1980	4.54	3.18	0.06	0.11	0.33	0.17	0.69
1981	5.61	3.63	0.10	0.15	0.57	0.29	0.87
1982	11.78	10.19	0.17	0.23	0.00	0.00	1.19
1983	28.39	22.23	0.27	0.36	2.58	1.28	1.67
1984	43.98	33.32	0.40	0.49	3.79	1.66	4.32
1985	-	-	-	-	-	-	-
1986	548.00	418.00	5.00	5.00	31.00	27.00	62.00
1987	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-
1989	20371.00	14151.00	934.00	934.00	1436.00	1346.00	1570.00
1990	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-
1994	117260.00	66540.00	2248.48	4458.59	8291.76	2628.35	33092.82
1995	139100.00	83800.00	3098.02	4068.23	9319.03	4559.58	34255.14
1996	147320.00	86800.00	3870.71	5250.92	8499.01	3809.75	39089.61
1997	-	-	-	-	-	-	-
1998	-	-	-	-	-	-	-
1999	176800.00	102430.00	5785.20	8522.94	10077.64	5624.15	44360.07
2000	-	-	-	-	-	-	-

Source: Data on food, clothing and housing expenditure for 1976-79 is estimated by using the same proportion of such expenditure in 1986 as there was no decomposition of those components during 1976-79. Further more, data for 1976-79 was surveyed from the North only. For other years, it was applied for the entire country. Data is taken from the following sources: for 1976, 1978-79 from GSO (1981, Table 272: 385), for 1977 from GSO (1980, Table 349: 483), for 1980-81, 1983-84 from GSO (1985a, Table 227: 362), for 1982 from GSO (1983, Table 262: 380), for 1986 from Fforde and de Vylder (1996, Table 3.14: 110), for 1989 from Le, V.T., *et al.* (1991: 94), for 1994 from GSO (1999b, Table 2.36, 2.47: 119, 131), and for 1996-97, 1999 from GSO (2000a, Table 2.36, 2.47: 126, 138).

Table VI.A.10.
Monthly Income, Expenditure and Saving of Agricultural Households
 (current prices, new VNDs)

Year	Income	Expenditure	Saving	Saving Rate (%)	Adjusted Saving Rate (%)
	1	2	3 = 1-2	4 = 3/1*100	5
1976	1.87	1.83	0.05	2.5	2.5
1977	2.04	2.11	-0.07	-3.6	2.0
1978	2.03	1.99	0.03	1.6	1.6
1979	2.24	2.23	0.01	0.4	0.4
1980	4.89	4.54	0.35	7.2	7.2
1981	5.64	5.61	0.03	0.5	0.5
1982	12.17	11.78	0.39	3.2	3.2
1983	36.97	28.39	8.58	23.2	23.2
1984	58.16	43.98	14.18	24.4	24.4
1985	-	-	-	-	25.4
1986	745.00	548.00	197.00	26.4	26.4
1987	-	-	-	-	19.4
1988	-	-	-	-	12.3
1989	21428.00	20317.00	1111.00	5.2	5.2
1990	-	-	-	-	7.0
1991	-	-	-	-	8.8
1992	-	-	-	-	10.6
1993	-	-	-	-	12.4
1994	136730.00	117260.00	19470.00	14.2	14.2
1995	167920.00	139100.00	28820.00	17.2	17.2
1996	183200.00	147320.00	35880.00	19.6	19.6
1997	-	-	-	-	21.6
1998	-	-	-	-	23.7
1999	238160.00	176800.00	61360.00	25.8	25.8
2000	-	-	-	-	25.8

Source: Data in Column 1 for 1976-88 is from Table VI.A.7, Column 1, for 1989-99 from Table VI.A.8, Column 1. Data in Column 2 is from Table VI.A.9, Column 1. Data in Column 5 takes the same value of that in Column 4 if it is positive. Otherwise, it should be extrapolated. Data for 1977 is the average between those of 1976 and 1978, for 1985 the average between 1984 and 1986. For other years, saving rate is extrapolated by the formula: $s_{ah}^t = s_{ah}^{t-1} + (s_{ah}^{1989} - s_{ah}^{1986})/3$ for 1987-1988, $s_{ah}^t = s_{ah}^{t-1} + (s_{ah}^{1994} - s_{ah}^{1989})/5$ for 1990-93 and $s_{ah}^t = s_{ah}^{t-1} + (s_{ah}^{1999} - s_{ah}^{1996})/3$ for 1997-98; s_{ah} for 2000 takes the same value of that in 1999.

Table VI.A.11.
Monthly Income, Expenditure and Saving of Non-Agricultural Households
 (current prices, new VNDs)

Year	Income	Expenditure		Saving	Saving Rate (%)	Adjusted Saving Rate (%)
		Total	o/w Food			
	1	2	3	4 = 1-2	5 = 4/1	6
1976	2.79	2.71	1.94	0.09	3.1	3.1
1977	2.87	2.81	2.02	0.06	2.1	2.1
1978	2.92	2.88	2.05	0.04	1.5	1.5
1979	3.04	3.02	2.22	0.02	0.5	0.5
1980	3.91	4.04	3.11	-0.13	-3.3	0.9
1981	5.99	5.91	4.51	0.08	1.3	1.3
1982	11.56	11.51	7.93	0.05	0.4	0.4
1983	18.20	18.02	12.10	0.18	1.0	1.0
1984	27.00	27.00	18.84	0.00	0.0	0.0
1985	-	-	-	-	-	1.7
1986	506.00	520.00	383.00	-14.00	-2.8	3.4
1987	-	-	-	-	-	5.1
1988	-	-	-	-	-	6.7
1989	-	-	-	-	-	8.4
1990	-	-	-	-	-	10.1
1991	-	-	-	-	-	11.8
1992	-	-	-	-	-	13.5
1993	-	-	-	-	-	15.2
1994	359670	299060	180480	60610	16.9	16.9
1995	452830	364790	236360	88040	19.4	19.4
1996	509400	394700	259610	114700	22.5	22.5
1997	-	-	-	-	-	26.0
1998	-	-	-	-	-	29.4
1999	832500	559200	328140	273300	32.8	32.8
2000	-	-	-	-	-	32.8

Source: Data for 1976-84 is applied for the North only. In the other years, surveys were conducted in the entire country. During 1976-86, data was applied for workers' households. During 1994-99, data was applied for urban households. Data is taken from the following sources: for 1976-81 from GSO (1982, Table 264, 265: 377-8), for 1982-84 from GSO (1985a, Table 267, 270: 353, 356), for 1986 from Fforde and de Vylder (1996, Table 3.13: 109), for 1994 from GSO (1999b, Table 1.1, 2.5, 2.14: 23, 87, 96), and for 1995-96 and 1999 from GSO (2000a, Table 1.1, 2.5, 3.15: 39, 89, 100). Data in Column 6 takes the same value of that in Column 5 if it is positive. Data for 1980 is the average between those of 1979 and 1981. For other years, saving rate is extrapolated by the formula: $s_{nh}^t = s_{nh}^{t-1} + (s_{nh}^{1994} - s_{nh}^{1984})/10$ for 1985-93 and $s_{nh}^t = s_{nh}^{t-1} + (s_{nh}^{1999} - s_{nh}^{1996})/3$ for 1997-98; s_{nh} for 2000 takes the same value of that in 1999.

Table VI.A.12.
Labor Force Classified by Sectors, 1976-99
 (1000 persons)

Year	Total	Agriculture	Non-Agriculture
	1	2	3 = 1-2
1976	18358	12173	6185
1977	19056	12819	6238
1978	19194	12884	6310
1979	19377	13009	6368
1980	19999	13581	6418
1981	20363	13862	6501
1982	21284	14546	6738
1983	22075	15373	6702
1984	23149	16332	6817
1985	26025	18808	7217
1986	27399	19798	7601
1987	27968	20246	7722
1988	28477	20446	8031
1989	28940	20698	8242
1990	30295	21689	8605
1991	30974	22276	8699
1992	31819	22998	8821
1993	32718	23684	9034
1994	33664	24310	9354
1995	34590	23314	11276
1996	35792	23940	11852
1997	36994	24595	12399
1998	37877	25196	12681
1999	38546	25700	12846
2000	-	-	-

Source: Data for 1976, 1980-81, 1983-84 is from GSO (1985a, Table 7: 19), for 1977 from GSO (1979, Table 22: 68), for 1979-80 from GSO (1982, Table 280: 401), for 1982 from GSO (1983, Table 9: 40), for 1985-87 from GSO (1990a, Table 4: 9), for 1988-89 from GSO (1992b, Table 3: 9), for 1990-93 from GSO (1995a, Table 2.7: 30), for 1994 from GSO (1996b, Table 2.4: 29), for 1995-97 from GSO (1998, Table 3: 10), for 1998-99 from WB (2000a, Appendix, Table 1.3: 143). Data in Column 2 for 1977-79, 1982, 1995-97 is estimated by multiplying total labor force of both agriculture and forestry with averaged share of agriculture in total labor force of both agriculture and forestry of 1976, 1980-81, 1983-94. Similarly, data in Column 2 for 1998-99 is estimated by applying the averaged share of agriculture in total labor force of agriculture, forestry and fishery in 1995-97. Data in Column 3 is the residual between Column 1 and 2.

Table VI.A.13.
State Employment Classified by Sectors, 1976-2000
 (1000 persons)

Year	Total	Agriculture	Non-Agriculture
	1	2	3 = 1-2
1976	2475	182	2294
1977	2722	199	2523
1978	3077	255	2822
1979	3249	280	2969
1980	3316	291	3025
1981	3304	183	3121
1982	3309	298	3011
1983	3435	332	3102
1984	3658	388	3270
1985	3868	408	3459
1986	4028	419	3609
1987	4091	413	3678
1988	4052	400	3651
1989	3801	385	3416
1990	3416	342	3073
1991	3136	305	2831
1992	2975	275	2700
1993	2960	289	2671
1994	2928	264	2665
1995	3003	262	2741
1996	3138	220	2918
1997	3267	220	3047
1998	3383	208	3175
1999	3433	197	3236
2000	3414	191	3223

Source: Data for 1976, 1980-81, 1983 from GSO (1985a, Table 10: 22), for 1977-79 from GSO (1982, Table 282: 403), for 1982 from GSO (1983, Table 11: 42), for 1984-86 from GSO (1987, Table 9: 16), for 1987-89 from GSO (1991b, Table 5: 11), for 1990-95 from GSO (1996b, Table 2.6: 31), for 1996-98 from GSO (2000c, Table 2: 8), for 1999-2000 from GSO (2001a, Table 20: 56). Data in Column 2 for 1977-79 is estimated by multiplying State employment in both agriculture and forestry with averaged share of agriculture in State employment in both agriculture and forestry between 1976 and 1980. Similarly, data in column 2 for 1996-2000 is estimated by applying the share of agriculture in State employment in both agriculture and forestry in 1995. Data in Column 3 is the residual between Column 1 and 2.

Table VI.A.14.
Population Classified by Sectors, 1976-2000
 (1000 persons)

Year	Total	Agriculture	Non-Agriculture
	1	2	3 = 1-2
1976	47638	33231	14407
1977	49160	33810	15350
1978	50413	34365	16048
1979	51421	35439	15982
1980	52462	36091	16371
1981	53722	37385	16337
1982	54927	38254	16673
1983	56170	38838	17332
1984	57373	39687	17686
1985	58653	40415	18239
1986	59872	41244	18628
1987	61109	41877	19232
1988	62452	42775	19677
1989	63727	43663	20064
1990	64376	44630	19746
1991	66016	45413	20603
1992	67243	46734	20509
1993	68451	48068	20383
1994	69644	49254	20390
1995	70825	50011	20814
1996	71995	50335	21660
1997	73157	51007	22150
1998	74307	51975	22332
1999	75457	52051	23406
2000	76597	52160	24437
	77686	-	-

Source: Data in Column 1 for 1976-82 is from GSO (1983, Tables 3, 4: 30, 31), for 1983-86 from GSO (1987, Table 2: 7), for 1987-88 from GSO (1990a, Table 2: 5), for 1989 from GSO (2000d, Table 1: 9), for 1990-2000 from GSO (2001a, Table 14: 35). Data in Column 2 is from GSO (2000e, Table 1.17: 49-58). Data in Column 3 is the residual between Columns 1 and 2.

Table VI.A.15.
Commodity Side of ISRFs at Current Prices, 1976-2000
(mil. new VNDs)

Year	X_a	M_a	R
	1	2= 1-3	3
1976	203	441	-239
1977	172	448	-276
1978	230	540	-310
1979	226	556	-331
1980	476	827	-351
1981	1475	2243	-768
1982	2858	4040	-1182
1983	4192	5620	-1428
1984	7675	9520	-1845
1985	14208	20057	-5849
1986	65154	114841	-49686
1987	447579	744913	-297335
1988	3001712	5023863	-2022151
1989	5784774	10322554	-4537780
1990	8974196	15296379	-6322183
1991	14976801	25216273	-10239472
1992	21825041	34680286	-12855245
1993	26420498	43757225	-17336727
1994	35383571	56128299	-20744729
1995	47854076	79008558	-31154482
1996	55274338	86431137	-31156799
1997	56641867	92808599	-36166732
1998	62201474	101184530	-38983056
1999	69523645	107497511	-37973866
2000	74799222	122942440	-48143218

Source: Data in Column 1 is from Table VI.10, Column 8 for 1976-88 and from Table VI.19, Column 4 for 1989-2000. Data in Column 3 is from Table VI.A.187, Column 5.

Table VI.A.16.
Commodity Side of ISRFs at Current Prices, 1976-2000
 (percent of total agricultural output)

Year	X_a	M_a	R
	1	2	3 = 1-2
1976	19	42	-23
1977	16	42	-26
1978	18	42	-24
1979	16	39	-23
1980	25	43	-18
1981	31	47	-16
1982	28	39	-12
1983	31	42	-11
1984	38	47	-9
1985	21	30	-9
1986	28	49	-21
1987	36	60	-24
1988	39	65	-26
1989	43	77	-34
1990	43	74	-31
1991	36	60	-24
1992	44	71	-26
1993	49	81	-32
1994	55	87	-32
1995	56	92	-36
1996	58	91	-33
1997	57	94	-37
1998	55	89	-34
1999	55	85	-30
2000	56	91	-36

Source: Calculated from Tables VI.7 and VI.A.15.

Table VI.A.17.
Commodity Side of ISRFs at Current Prices, 1976-2000
 (percent of agricultural GDP)

Year	X_a	M_a	R
	1	2	3 = 1-2
1976	27	59	-32
1977	23	59	-36
1978	24	56	-32
1979	21	53	-32
1980	33	57	-24
1981	42	64	-22
1982	39	55	-16
1983	45	60	-15
1984	54	67	-13
1985	31	43	-13
1986	35	62	-27
1987	47	79	-31
1988	51	85	-34
1989	58	104	-46
1990	65	111	-46
1991	55	93	-38
1992	67	107	-40
1993	74	122	-48
1994	85	134	-50
1995	91	150	-59
1996	91	142	-51
1997	86	141	-55
1998	82	133	-51
1999	83	129	-46
2000	85	139	-54

Source: Calculated from Tables VI.2 and VI.A.15.

Table VI.A.18.
Financial Side of ISRFs at Current Prices, 1976-2000
(mil. new VNDs)

Year	$F_{ga} + F_{na} - F_{an}$	$K_{ga} - K_{ag}$	$K_{na} - K_{an}$	$T_{ga} - T_{ag}$	R
	1	2	3	4	5 = 1+2+3+4
1976	-59	-60	-36	-84	-239
1977	-41	-88	-60	-87	-276
1978	-62	-92	-61	-94	-310
1979	-71	-80	-64	-116	-331
1980	-109	-71	-41	-130	-351
1981	-387	-66	3	-319	-768
1982	-446	-239	215	-712	-1182
1983	-169	-341	-22	-895	-1428
1984	-137	-540	194	-1361	-1845
1985	-3832	-691	2342	-3667	-5849
1986	-39626	-6075	11634	-15620	-49686
1987	-275582	-21551	56207	-56409	-297335
1988	-1984925	-128399	356507	-265334	-2022151
1989	-3812741	-238252	467154	-953940	-4537780
1990	-4857294	-409165	438910	-1494634	-6322183
1991	-8778654	-615400	1679770	-2525189	-10239472
1992	-8621413	-839800	1351550	-4745582	-12855245
1993	-8439948	-1207600	-204722	-7484457	-17336727
1994	-9554402	-1613100	1046291	-10623518	-20744729
1995	-12401111	-2216500	-2931773	-13605098	-31154482
1996	-15073370	-2384400	1205995	-14905023	-31156799
1997	-14877421	-2981200	-942030	-17366081	-36166732
1998	-16787156	-4090900	-548621	-17556379	-38983056
1999	-15967979	-5124200	1197577	-18079264	-37973866
2000	-16402257	-5992897	-4071335	-21676729	-48143218

Source: Data in Column 1 is from Table VI.23, Column 3. Data in Column 2 is from Table VI.24, Column 4. Data in Column 3 is from Table VI.35, Column 3. Data in Column 4 is from Table VI.36, Column 7.

Table VI.A.19.
Financial Side of ISRFs at Current Prices, 1976-2000
 (percent of total agricultural output)

Year	$F_{ga} + F_{na} - F_{an}$	$K_{ga} - K_{ag}$	$K_{na} - K_{an}$	$T_{ga} - T_{ag}$	R
	1	2	3	4	5 = 1+2+3+4
1976	-6	-6	-3	-8	-23
1977	-4	-8	-6	-8	-26
1978	-5	-7	-5	-7	-24
1979	-5	-6	-5	-8	-23
1980	-6	-4	-2	-7	-18
1981	-8	-1	0	-7	-16
1982	-4	-2	2	-7	-12
1983	-1	-3	0	-7	-11
1984	-1	-3	1	-7	-9
1985	-6	-1	3	-5	-9
1986	-17	-3	5	-7	-21
1987	-22	-2	5	-5	-24
1988	-26	-2	5	-3	-26
1989	-28	-2	3	-7	-34
1990	-24	-2	2	-7	-31
1991	-21	-1	4	-6	-24
1992	-18	-2	3	-10	-26
1993	-16	-2	0	-14	-32
1994	-15	-2	2	-16	-32
1995	-15	-3	-3	-16	-36
1996	-16	-2	1	-16	-33
1997	-15	-3	-1	-18	-37
1998	-15	-4	0	-15	-34
1999	-13	-4	1	-14	-30
2000	-12	-4	-3	-16	-36

Source: Calculated from Tables VI.7 and VI.A.18.

Table VI.A.20.
Financial Side of ISRFs at Current Prices, 1976-2000
 (percent of agricultural GDP)

Year	$F_{ga} + F_{na} - F_{an}$	$K_{ga} - K_{ag}$	$K_{na} - K_{an}$	$T_{ga} - T_{ag}$	R
	1	2	3	4	5 = 1+2+3+4
1976	-8	-8	-5	-11	-32
1977	-5	-12	-8	-11	-36
1978	-6	-10	-6	-10	-32
1979	-7	-8	-6	-11	-32
1980	-8	-5	-3	-9	-24
1981	-11	-2	0	-9	-22
1982	-6	-3	3	-10	-16
1983	-2	-4	0	-10	-15
1984	-1	-4	1	-10	-13
1985	-8	-1	5	-8	-13
1986	-21	-3	6	-8	-27
1987	-29	-2	6	-6	-31
1988	-33	-2	6	-4	-34
1989	-38	-2	5	-10	-46
1990	-35	-3	3	-11	-46
1991	-32	-2	6	-9	-38
1992	-27	-3	4	-15	-40
1993	-24	-3	-1	-21	-48
1994	-23	-4	3	-25	-50
1995	-24	-4	-6	-26	-59
1996	-25	-4	2	-24	-51
1997	-23	-5	-1	-26	-55
1998	-22	-5	-1	-23	-51
1999	-19	-6	1	-22	-46
2000	-19	-7	-5	-25	-54

Source: Calculated from Tables VI.2 and VI.A.18.

Table VI.A.21.
Real ISRFs at Domestic Prices, 1976-2000
 (1992 prices, mil. new VNDs)

Year	P _{ad}	P _{nd}	P _{ad} /P _{nd}	Visible	Invisible	r
	1	2	3 = 1/2	4 = R/Pn	5 = Xa/Pad(1-Pad/Pnd)	6 = 4+5
1976	0.0039	0.0032	1.23	-7560070	-1193373	-8753444
1977	0.0039	0.0032	1.23	-8631096	-999943	-9631039
1978	0.0053	0.0035	1.53	-8953845	-2309382	-11263227
1979	0.0056	0.0043	1.29	-7632875	-1169748	-8802623
1980	0.0073	0.0050	1.46	-7051595	-3029546	-10081141
1981	0.0169	0.0107	1.58	-7185070	-5076563	-12261633
1982	0.0321	0.0223	1.44	-5304198	-3919007	-9223205
1983	0.0378	0.0284	1.33	-5022858	-3640976	-8663834
1984	0.0554	0.0404	1.37	-4570166	-5154611	-9724778
1985	0.1720	0.1382	1.24	-4231118	-2020445	-6251562
1986	0.6642	0.7899	0.84	-6290254	1560462	-4729793
1987	3.4626	3.4600	1.00	-8593559	-9849	-8603408
1988	21.2333	15.8597	1.34	-12750246	-4789829	-17540074
1989	33.6479	29.1206	1.16	-15582689	-2672766	-18255455
1990	46.2561	42.3408	1.09	-14931641	-1794030	-16725671
1991	89.7998	69.3378	1.30	-14767510	-4921753	-19689263
1992	100.0000	100.0000	1.00	-12855245	0	-12855245
1993	106.7323	121.9307	0.88	-14218505	3085545	-11132960
1994	120.4089	144.3419	0.83	-14371941	4872460	-9499481
1995	145.3826	167.4018	0.87	-18610603	4329608	-14280994
1996	161.0164	181.0811	0.89	-17205990	3803765	-13402225
1997	165.5619	195.0338	0.85	-18543826	5169830	-13373997
1998	184.7649	210.8955	0.88	-18484534	4171234	-14313300
1999	191.6057	224.1288	0.85	-16942874	5265241	-11677633
2000	195.2823	234.3851	0.83	-20540226	6390166	-14150059

Source: Data in Column 1 and 2 are estimated from Table VI.5. Data in Columns 4 and 5 are estimated from Table VI.A.15.

Table VI.A.22.
Real ISRFs Compare to the World Terms of Trade, 1976-2000
 (1992 prices, mil. new VNDs)

Year	T _d	T _w	TT*	R	r*
	1	2	3 = (T _w /T _d -1)Xa	4	5 = 3+4
1976	1.23	2.41	196	203	-43
1977	1.23	2.47	173	172	-103
1978	1.53	2.02	73	230	-237
1979	1.29	1.96	116	226	-214
1980	1.46	2.56	356	476	5
1981	1.58	2.16	540	1475	-228
1982	1.44	1.64	401	2858	-781
1983	1.33	1.79	1451	4192	23
1984	1.37	1.69	1770	7675	-74
1985	1.24	1.46	2512	14208	-3336
1986	0.84	1.40	43318	65154	-6369
1987	1.00	1.15	65017	447579	-232318
1988	1.34	1.33	-21214	3001712	-2043365
1989	1.16	1.37	1060134	5784774	-3477646
1990	1.09	1.15	476015	8974196	-5846168
1991	1.30	1.07	-2546979	14976801	-12786452
1992	1.00	1.00	0	21825041	-12855245
1993	0.88	1.07	5930381	26420498	-11406346
1994	0.83	1.25	17542723	35383571	-3202006
1995	0.87	1.19	17517763	47854076	-13636719
1996	0.89	1.25	22685290	55274338	-8471509
1997	0.85	1.39	35938787	56641867	-227945
1998	0.88	1.20	23237679	62201474	-15745378
1999	0.85	0.97	9761227	69523645	-28212640
2000	0.83	-	-	74799222	-

Source: Data in Column 1 is from Table VI.A.23, Column 3. Data in Column 2 is from UNCTAD (2000, Table 2.3) in which T_w is the relative price between food and tropical beverages against manufactures export in the world markets. Data in Column 3 is estimated from Table VI.A.15, Column 1. Data in Column 4 is from Table VI.A.15, Column 3.

Table VI.A.23.
Agricultural Terms of Trade, 1976-2000 (GDP Deflator 1992 = 100)

Year	GDP Deflator			Terms of Trade
	Total	Agriculture	Non-Agriculture	
	1	2	3	4 = 2/3*100
1976	0.0034	0.0039	0.0032	123
1977	0.0034	0.0039	0.0032	123
1978	0.0040	0.0053	0.0035	153
1979	0.0047	0.0056	0.0043	129
1980	0.0058	0.0073	0.0050	146
1981	0.0131	0.0169	0.0107	158
1982	0.0262	0.0321	0.0223	144
1983	0.0323	0.0378	0.0284	133
1984	0.0460	0.0554	0.0404	137
1985	0.1513	0.1720	0.1382	124
1986	0.7533	0.6642	0.7899	84
1987	3.4829	3.4626	3.4600	100
1988	17.6514	21.2333	15.8597	134
1989	30.7214	33.6479	29.1206	116
1990	43.6563	46.2561	42.3408	109
1991	75.4356	89.7998	69.3378	130
1992	100.0000	100.0000	100.0000	100
1993	117.4092	106.7323	121.9307	88
1994	137.3195	120.4089	144.3419	83
1995	160.7182	145.3826	167.4018	87
1996	174.6970	161.0164	181.0811	89
1997	186.2231	165.5619	195.0338	85
1998	202.6801	184.7649	210.8955	88
1999	214.3054	191.6057	224.1288	85
2000	222.9275	195.2823	234.3851	83

Source: Calculated from Table VI. 5.

Table VI.A.24.
Agricultural Terms of Trade, 1976-2000 (CPI 1992 = 100)

Year	CPI			Terms of Trade
	Total	Agriculture	Non-Agriculture	
	1	2	3	4 = 2/3*100
1976	0.0052	0.0063	0.0045	142
1977	0.0062	0.0080	0.0051	157
1978	0.0075	0.0100	0.0065	154
1979	0.0090	0.0126	0.0075	168
1980	0.0112	0.0168	0.0089	189
1981	0.0191	0.0256	0.0164	156
1982	0.0373	0.0466	0.0339	137
1983	0.0557	0.0722	0.0493	147
1984	0.0919	0.1120	0.0849	132
1985	0.1760	0.2146	0.1626	132
1986	1.5398	1.8608	1.4275	130
1987	4.9751	6.1612	4.5559	135
1988	22.3579	23.4311	22.4475	104
1989	30.4068	30.7650	31.1067	99
1990	50.8098	54.5156	50.4525	108
1991	85.1064	93.9850	81.8938	115
1992	100.0000	100.0000	100.0000	100
1993	105.2000	107.6000	104.3764	103
1994	120.3488	132.9936	116.4675	114
1995	135.6331	159.0603	128.8589	123
1996	141.7366	166.0590	134.6948	123
1997	146.8391	168.7159	140.2602	120
1998	160.3483	189.4680	152.0014	125
1999	160.5087	185.8681	152.9536	122
2000	159.5456	181.5931	152.6821	119

Source: Data for 1976-99 is from GSO (2000d, Tables 214-15: 379-80). For 2000 from GSO (2001a, Table 198: 395-6).

Table VI.A.25.
Agricultural Terms of Trade, 1976-2000 (world market prices 1992 = 100)

Year	Agriculture	Non-Agriculture	Terms of Trade
	1	2	3
1976	109	45	241
1977	123	50	247
1978	115	57	202
1979	126	65	196
1980	183	72	256
1981	147	68	216
1982	108	66	164
1983	113	63	179
1984	103	61	169
1985	91	62	146
1986	104	74	140
1987	96	84	115
1988	118	89	133
1989	121	88	137
1990	112	97	115
1991	104	97	107
1992	100	100	100
1993	102	95	107
1994	121	97	125
1995	127	107	119
1996	130	104	125
1997	134	96	139
1998	114	95	120
1999	95	97	97
2000	-	-	-

Source: UNCTAD (2000). Data in Column 1 is price index of food and tropical beverages export in the world market. Data in Column 2 is price index of manufacture export in the world market.

Table VI.A.26.
Prices of Rice and Urea, 1989-2000

Year	Domestic Market (VNDs/kg)		World Market (US\$/ton)	
	Rice	Urea	Rice	Urea
	1	2	3	4
1989	-	-	225	65
1990	549	1915	187	75
1991	1298	2001	228	110
1992	1299	1999	161	222
1993	1168	2036	210	204
1994	1352	1858	208	165
1995	1957	2749	258	221
1996	1857	2719	285	222
1997	1500	2452	245	174
1998	2000	2081	273	137
1999	1600	1939	227	124
2000	1550	2319	192	128

Source: Data in Columns 1 and 2 is from MARD (2000, Appendix 2: 59). Data in Columns 3 4 for 1989-93 is from IMF (1995b, Table 34, 35: 34-5). For 1994 from IMF (1999b, Tables 28, 29: 30-1). For 1995-2000 from IMF (2002, Appendix, Tables 25, 26: 79-80).

Table VI.A.27.
*Deviation between CPI-Based and GDP Deflator-Based Terms of Trade,
 1976-2000*

Year	1992 Base Terms of Trade			1995 Base Terms of Trade		
	CPI	Deflator	Square Devia- tion	CPI	Deflator	Square Devia- tion
	1	2	3 = (1-2)^2	4	5	6 = (4-5)^2
1976	142	123	360	115	141	706
1977	157	123	1134	127	142	216
1978	154	153	1	125	176	2652
1979	168	129	1505	136	148	158
1980	189	146	1848	153	169	230
1981	156	158	7	126	182	3163
1982	137	144	46	111	166	2987
1983	147	133	190	119	153	1166
1984	132	137	27	107	158	2606
1985	132	124	56	107	143	1326
1986	130	84	2141	106	97	77
1987	135	100	1236	110	115	32
1988	104	134	870	85	154	4844
1989	99	116	277	80	133	2801
1990	108	109	1	88	126	1464
1991	115	130	217	93	149	3153
1992	100	100	0	81	115	1165
1993	103	88	242	84	101	299
1994	114	83	947	93	96	13
1995	123	87	1339	100	100	0
1996	123	89	1181	100	102	6
1997	120	85	1253	97	98	0
1998	125	88	1372	101	101	0
1999	122	85	1298	98	98	0
2000	119	83	1269	96	96	0
Sum			18819			29062

Source: Data in Columns 1 and 3 are calculated from Table VI.A.24. Data in Columns 2 and 4 are calculated from Table VI.A.23.

6.A.2. Justification for the estimated results

Tables VI.A.15-20 in Appendix VI.1 summarizes both the commodity and the financial sides of ISRFs. At current prices, there are net resource inflows to agriculture in both the pre- and post-reform periods, and these inflows are quite high as the proportion of the agricultural GDP. In addition, a jump occurs in the net resource inflows to agriculture from the pre-reform to the post-reform period.

Standing on the conservative side for these net resource inflows, we need to address two major points to justify the estimated result. First, the direction and magnitude of ISRFs may change significantly if we demarcate the sectors differently, i.e., by urban/rural, traditional/modern and agriculture-forestry-aquaculture/the rest of the economy, instead of dividing the sectors solely by agriculture/non-agriculture.

Second, the estimate accounts for only sales from agriculture (Xa) and financial transfers between sector (R), while purchases by agriculture (Ma) are calculated as the residual between R and Xa.

Therefore, we need to test two points:

1. Are the net resource inflows to agriculture overestimated?
2. Is there any statistical bias that can account for the dramatic increase in the net resource inflows in the post-reform period?

6.A.2.1. Sectoral demarcation reconsidered

Looking at Table VI.40 in the main text of this chapter, intersectoral factor payments transfer play the most important role in deciding the direction and magnitude of ISRFs. In both the pre- and post-reform periods, net factor payment inflows account for around half of the net resource inflows to agriculture. It is expected that the rural/urban demarcation will remove this transfer since most of factor payment inflows to agriculture exists in the form of rural non-farm income²⁶. Albeit, the sum of intersectoral transfers through capital and current accounts still shows net resource inflows to agriculture. It implies that we still may see net resource inflows to the rural sector if the rural/urban demarcation is selected.

The above conclusion also holds true if we include both forestry and fishery into the gross agricultural sector for three reasons. First, the forestry sector accounted for a small share of the purely agricultural GDP at 4 and 7 percent in the pre- and post-reform periods, respectively.

Second, the fishery sector was not developed in the pre-reform period, and fishery products were mainly self-consumed. The available data shows that the aquaculture sector only accounted for 7 percent of the purely agricultural GDP during 1986-88. In the post-reform period, the fishery sector achieved considerable growth, and the sector mostly moved toward the export market. It is estimated that fishery sector accounted for more than 15 percent of the purely agricultural GDP in the post-reform period. Since the sector was export-oriented in the post-reform period, it was expected that fishery could contribute significantly to the marketed surplus and the net resource outflows to non-agriculture. Yet, it is reminded that fishery exports were concentrated in processing enterprises characterized by modern techniques and commercial modes of production. Therefore, it is not so appropriate to include those enterprises into the more traditional agricultural sector, and this will be discussed further below.

Third, assuming that most fishery activities are undertaken in rural areas, the above point still demonstrates that there are net resource inflows to the rural sector. It implies that even if the export-oriented fishery were to be included, the empirical evidence still shows that there were net resource inflows into the gross agricultural sector.

For the traditional/modern demarcation in general, it is difficult to acquire sufficient empirical studies and data. A proxy that can be used is the household/non-household demarcation in the framework of flows of fund analysis since most households do not register their business activities and use traditional techniques and methods of production. In the pre-reform period, it is expected that household sector contributed significant resources to the rest of the economy, especially in the rural sector. It is often claimed that the peasant households were highly squeezed under the collective system. Yet, it is tenuous to conclude that peasant households could make significant resource contributions to finance industrialization in the pre-reform period if we take into account three factors. First, Vietnam had to import considerable amount of food every year in the pre-reform period. Second, the State pumped a large amount

of investments in land reclamation and irrigation systems after the country's reunification, with the strong support of foreign aid. Third, it will be shown later in Chapter VII that although peasant households may have been drained by the imposition of high taxes and other fees, the actual tax contribution from the sector to the central State revenue was very small. Most of the contributions from peasant households were often kept in the retained funds of agricultural cooperatives, which would be spent on rural social services. As a result, net resource contribution from the household sector was insignificant or even negative in the pre-reform period.

In the post-reform period, available data shows that the household sector contributed 31-48 percent of gross saving during 1995-99, while it accounted for only 16-22 percent of total investment (Vu, Q.V. 2002: 153). It implies that the household sector may have made significant financial contributions to the modern enterprise sector. Nevertheless, we also should consider three counter-arguments. First, the majority of household saving came from the urban sector, where household businesses reflected strong characteristics of the commercial and modern modes of production. It is estimated that urban households accounted for 75-80 percent of gross saving during 1990-95 (CECARDE 1997: 92). In part, this reflects the widening urban/rural income gap. The income per capita of the urban sector was four times higher than that of rural sector in 1990, and this gap increased to more than five times in 1995 (*ibid.*: 55). Second, the saving rate of rural households was highest in the rural areas with highly developed commercialized agriculture and non-farm activities, rather than with traditional agriculture (*ibid.*: 94). Third, a considerable amount of gross saving came from the domestic private enterprises and from the foreign sector. As a result, the traditional sectors, particularly the rural households, were not expected to make significant resource contributions to finance the more urban-oriented modern sector in the post-reform. Yet, due to data limitation, it is not clear if there was any net resource inflow from modern to traditional sector in the post-reform period.

In short, restructuring the sectoral demarcation brings about two important conclusions:

1. There is not enough evidence to show any resource outflow from agriculture in both the pre- and post-reform period, even if we equate agriculture with the rural, traditional, or gross agricultural sectors (including both forestry and aquaculture).
2. Instead, we may expect net resource inflows to agriculture in both the pre- and post-reform periods, though the net inflows may be overestimated.

6.A.2.2. Check for estimation bias

Recall the formula for the estimation of ISRFs and the net surplus of agriculture from Chapter 4:

$$R = X_a - M_a = F_a - (C_{aa} + C_{na}) - (I_{aa} + I_{na}) \quad (\text{IV.4})$$

On the commodity side, net resource outflows from agriculture are the difference between value-added of the sector (or agricultural GDP) and the sum of expenditures by agricultural institutions on consumption and investment goods (both agricultural and non-agricultural goods).

$$NS_a = F_a - (C_{aa} + C_{an}) = (X_a - M_a) + (I_{aa} + I_{na}) \quad (\text{IV.24})$$

The difference between this notion of net agricultural surplus and the net resource outflow from agriculture is the total investment in agriculture. Net agricultural surplus refers to resources made available by the agricultural sector for investment within the sector itself and utilization in other sectors, including exports. So, we may expect that agriculture can make net resource contribution only if net agricultural surplus is positive. Furthermore, if we add the minimum value of investment goods used in agricultural sector in equation IV.4, the maximum value of net resource outflows from agriculture can be calculated.

In our case, where there are net resource inflows to agriculture, the above idea can be interpreted as follows:

1. There are net resource inflows to agriculture because the net agricultural surplus is negative. In other words, the net resource inflows will be maintained as long as the agricultural GDP cannot

cover the expenditures on consumption goods by agricultural institutions.

2. The minimum value of investment goods used in the agricultural sector set the minimum value of net resource inflows to the sector, given the net agricultural surplus.

Looking at Table VI.A.28, the net agricultural surplus is negative since value-added of agriculture (GDP) cannot cover the expenditures of consumption goods by agricultural households in both the pre- and post-reform period. So, it is certain that the direction of ISRFs should be net inflows in both pre- and post-reform period. Adding the minimum value of investment goods to the absolute value of net agricultural surplus, a very high level of minimum net resource inflows is calculated as a percentage of the agricultural GDP.

However, the gap between the net resource inflows estimated from the financial side and the minimum value of the inflows from the commodity side is significant. This gap accounted for 12.9 and 18.7 percent of the agricultural GDP in the pre- and post-reform periods, respectively. In addition, this gap shows an increasing trend in both the pre- and post-reform periods. Therefore, we may draw three major implications:

1. The net resource inflows on the financial side may have been overestimated.
2. There is an increasing trend of overestimation within both the pre- and post-reform periods.
3. Comparing the two periods, the net resource inflows on the financial side are likely to be more overestimated in the post-reform periods.

Table VI.A.28.
Net Agricultural Surplus and ISRFs, 1976-2000

(percent of agricultural GDP, annual average, current prices).

Period	Net Agricul- tural Surplus	Minimum Value of Investment Goods	Net Resource Inflows		
			Minimum Net Re- source Inflows on the Commodity Side	Estimated Net Re- source Inflows on the Financial Side	Gap
	1	2	3 = (-1)+2	4	5=4-3
1976-80	-14.1	9.9	24.0	31.3	7.2
1981-84	-0.2	3.9	4.0	16.6	12.5
1985-88	-3.0	2.9	5.9	26.2	20.3
1976-88	-6.4	5.9	12.3	25.2	12.9
1989-92	-33.0	5.0	37.9	42.3	4.4
1993-96	-24.3	10.1	34.4	52.0	17.6
1997-2000	-9.5	8.0	17.5	51.5	34.0
1989-2000	-22.3	7.7	30.0	48.6	18.7

Source: Data in Column 1 is estimated as the difference between the agricultural GDP and the total consumption of agricultural institutions. Data on the agricultural GDP is taken from Table VI.4, Column 2. Data on the total consumption of agricultural institutions is estimated by multiplying the gross disposable income of the agricultural sector with the average propensity to consume of agricultural households. The former figure is taken from Table VI.A.4, Column 4. The latter is estimated as 1 minus the saving rate of agricultural households, which is given in Table VI.A.10, Column 5. Data in Column 2 is estimated from Table VII.A.3, column 1. Data in Column 4 is estimated from Table VI.A.20.

Nevertheless, the estimate of net resource inflows on the financial side can be justified for the following reasons:

1. In Column 1 of Table VI.A.28, net agricultural surplus is estimated on the basis of only consumption by agricultural households, not accounting for other agricultural institutions such as the cooperatives, administrative systems, and State farms. It is reminded that agricultural households enjoyed a considerable amount of services (such as health care and education) provided by the cooperatives and administrative systems in rural areas, and these fee-free services are often underestimated in household expenditure surveys for both pre- and post-reform periods. Furthermore, it is worth noting that the negative net agricultural surplus plays the dominant role in the minimum net resource

inflows in both the periods. It means that the minimum amount of net resource inflows on the commodity side may become larger, and, that the gap in Column 5 will be lower if the consumption of agricultural institutions is not underestimated.

2. Column 2 of Table VI.A.28 accounts only for non-agricultural investment goods spent by the State and private sector. It does not account for the self-utilization of agricultural investment goods made by agricultural institutions such as labor mobilization in the cooperatives, investments made by the local agricultural institutions, self-utilization of agricultural investment goods made by the agricultural households, and inventory and accumulation in the forms of housing, gold, jewelry and other durable goods. It is worth noting that the value of the last two items increased considerably as a result of high agricultural growth in the post-reform period²⁷. It means that the minimum value of investment goods purchased by agricultural institutions, and hence the minimum value of net resource inflows on the commodity side, are underestimated. This also signifies that the underestimation is higher in the post-reform period.
3. There is a jump in the net resource inflows estimated on the financial side from 26.2 percent of the agricultural GDP in 1985-88 to 42.3 percent in 1989-92. Yet, the gap between this estimated level of resource inflows and the minimum inflows on the commodity side is the lowest (4.4 percent of agricultural GDP) for the period of 1989-92, compared to other periods. It means that the economic reform caused considerable increases in the magnitude of net resource inflows to agriculture. In other words, there is no significant overestimation of the net resource inflows on the financial side in the post-reform period, compared to the pre-reform period.

Consequently, the estimate of net resource inflows on the financial side is justifiable, though, standing on conservative side, we still accept that there may be some overestimation of the net resource inflows to agriculture in both the pre- and post-reform period. Moreover, there is no clear evidence that the net resource inflows on the financial side are more overestimated in the post-reform period, compared to the inflows in the pre-reform period.

Endnotes of Chapter 6

¹ GSO conducted Living Standard Surveys during 1976-86 and 1994-96 and 1999. There are two Living Standard Surveys carried by the World Bank in 1992 and 1997.

² Though Tran, V.T. (ed. 2000, Table. 7.14: 296) puts together all agriculture, forestry and fishery into a single activity, only agriculture and forestry should be included before 1985 as there was no statistical data on fishery in that period (GSO, SYBs for various year).

³ In September 14th, 1985, there was a change in currency at the ratio ten old VND for one new VND.

⁴ During 1976-88, all exports were monopolized by State enterprises.

⁵ See footnote of Table 154 in GSO (1999c: 275).

⁶ As income of agricultural households (Y_a) includes the capital depreciation, therefore gross disposable income, rather than net disposable income should be selected (see the estimate of income of agricultural households later on).

⁷ In SYBs, the non-agricultural sector is divided into 3 sub-sectors: industry, construction and service.

⁸ Capital transfers through informal financial institutions were insignificant.

⁹ This is supplementary production on the so-called '5 percent land.'

¹⁰ There are also 2 other living standards surveys conducted under the technical supervision of the World Bank (GSO 2000f, State Planning Committee/GSO 1994). However, survey methods are different from those of GSO (1999b, 2000a).

¹¹ This method is used just to simplify estimation. In fact, deposit holdings are also affected by development of financial institutions and the level of financialization in each sector.

¹² $\Delta D_h = \Delta D_{ah} + \Delta D_{nh}$

¹³ $S_h = S_{ah} + S_{nh}$

¹⁴ These assumptions are not so reasonable as household income in each sector is different from the GDP of the sector and household share in GDP_a is often much bigger than that in GDP_n because most of agricultural production is undertaken by household sector while non-agricultural production is dominated by financial and non-financial corporation. Nevertheless, the assumptions are accepted for three reasons. First, the income of the agricultural sector (Y_a) is also a function of deposits held by the agricultural sector on the banking system since these deposits affect the amount of interest payments paid to the agricultural sector (F_{an}). Therefore, Y_a cannot be estimated without the estimate of agricultural deposits, and its saving on the first step. Second, there are only figures on household saving from their total income, and no figure on household

saving over the total GDP classified by sector. Third, the equation (VI.10) can also be written as: $\Delta D_a / \Delta D_h = s^* = GDP_a \cdot S_{ah} / GDP_{sh}$. S_a / Y_a is often smaller than S_a / GDP_a but the gap is not as big as that between S_h / Y_h and S_h / GDP_h because most of the income of non-agricultural households comes from the payment of the financial and non-financial sectors, and from the State rather than from household production itself. It implies that s^* or the changes in deposits held by agricultural households may be underestimated. However, there are also two sources of overestimation of ΔD_a : (i) financial systems are often underdeveloped in the agricultural sector, compared to that in the non-agricultural sector; and (ii) total GDP in the above equation is much bigger than the GDP generated by only household sector.

¹⁵ $GDP = GDP_a + GDP_n$

¹⁶ For instance, sales by agriculture may include rice, maize, vegetable, livestock, coffee, tea, rubber, etc. Purchases by agriculture may include industrial consumption goods, fertilizer, pesticides, machines, fuel, cement, metal products, electricity, etc.

¹⁷ Furthermore, the gap between CPI- and GDP-deflator-based terms of trade may also reflect the difference in marketing margin, tax and tariff imposed on agricultural and non-agricultural goods. Yet, we do not know this gap precisely. However, the true terms of trade cannot be lower than the GDP-deflator-based terms of trade because the latter is calculated on the producer price indexes.

¹⁸ Compared to other years in the post-reform period, CPI-based terms of trade were lowest in 1992. However, it is noteworthy that CPI-based terms of trade followed quite well changes in world prices as external trade was liberalized. In fact, the gap between GDP deflator-based and CPI-based terms of trade mainly reflected the inefficiency of agricultural marketing system and tariff biased against agricultural sector (David 1994a, IFPRI 1996, MARD 2002, and Minot 1998).

¹⁹ The invisible net inflows are calculated as $\frac{X_a}{P_{ad}} \times \left(1 - \frac{P_{ad}}{P_{nd}} \right)$, which is positively related to X_a and/or $\frac{P_{ad}}{P_{nd}}$. In case of invisible outflows, the relations were reversed.

²⁰ It is noteworthy that both CPI-based and GDP deflator-based terms of trade did not follow well changes in terms of trade in the world markets in the pre-reform period. In addition, the gap between the terms of trade in the international and the domestic markets was relatively large in the pre-reform period. In contrast, CPI-based terms of trade traced along terms of trade in world market in the post-reform period, and the gap between GDP deflator-based terms of

trade and terms of trade in the world market was not as large as it was the pre-reform period. It reflects two points. First, Vietnam's economy was relatively isolated from world markets in the pre-reform period since its external trade was confined to the CMEA block only. Second, the post-reform period witnessed the integration of the country into the world markets. The remaining gap between GDP deflator-based terms of trade and those in the world markets in the post-reform period, as suggested earlier, was due to the inefficiency of agricultural marketing system and the tariff biased against agricultural sector.

²¹ The gap between terms of trade in the world and domestic markets is calculated as $\left(\frac{T_w}{T_d} - 1\right)$, where T_w and T_d are terms of trade in the world and domestic markets, respectively.

²² Share of invisible outflows over visible net inflows were 58 and 40 percent in the pre- and post-reform periods, respectively.

²³ Calculated at world market prices, the invisible outflow TT^* equals to

$\left(\frac{T_w}{T_d} - 1\right) \times X_a$. Therefore, it is positively related to X_a and the gap between T_w and T_d .

²⁴ Though the figures in Table VI.40 show that net financial inflows through factor payment account were higher than those through the current account (43 percent versus 41 percent of total net financial inflows), it is believed that the former, indeed, was lower than the latter as the relatively high net factor payment inflows, on annual average, appeared only in 1985-88 when non-farm income was overestimated as the extrapolation between 1985 and 1989. In 1976-80 and 1981-84, net factor payment inflows were lower than net current transfers to agriculture.

²⁵ A major component of net capital outflow from agriculture was the deposits held by agricultural institutions in the banking system. It is believed to be overestimated for the 1985-88 periods for two reasons. First, it is based on the assumption that deposits of agricultural sector were proportional to its share over total saving. Yet, the banking system always developed more strongly in the urban sector, hence it gave easier access to urban depositors. Second, the inflation rate was high in 1985-88, therefore deposits in the banking system was discouraged.

²⁶ This will be discussed in more details in the section on financial side of ISRFs in Chapter 7.

²⁷ Reasons for these saving and investment behavior of agricultural households are explained in the section on financial side of ISRFs in Chapter 7.

7 Analysis on the Determinants of Intersectoral Resource Flows in Vietnam

This chapter tries to examine the patterns of ISRFs by combining the results from chapters 4, 5 and 6. Chapter 7 sheds light on explaining the patterns of ISRFs. Chapter 5 sets up the context that helps narrow down the focus of the analysis on ISRFs. Chapter 6 gives the preliminary results of the ISRFs.

Investigation in Chapter 5 shows that the major change on the commodity side of ISRFs is the jump in agricultural marketed surplus from the pre- to post-reform periods. In addition, the availability of agricultural marketed surplus at relatively low prices contributed significantly to capital accumulation in the non-agricultural sector in the post-reform period. In contrast, the shortage of food and high agricultural terms of trade prevented efforts of the State to extract resources from agriculture through the price scissor system in the pre-reform period.

Yet, the preliminary results of ISRFs estimated in Chapter 6 show that there was no change in the direction of ISRFs between the pre- and post-reform periods at whatever prices. Even though the agricultural marketed surplus increased significantly from the pre- to post-reform periods, the purchases of non-agricultural goods by the agricultural sector increased at faster rate. This left higher net resource inflows to agriculture in the post-reform period, compared to those in the pre-reform period. In addition, there were invisible inflows to agriculture in the pre-reform period as agricultural terms of trade, in fact, were very high. In the post-reform period, terms of trade put the agricultural sector at a disadvantage since 1993 when agricultural marketed surplus started increasing. Furthermore, in both periods the major component of real net resource inflows to agriculture was the visible inflows, in which the net visible inflows in the post-reform period were much higher than those in the pre-reform period. Finally, there is no evidence that significant resources were transferred from agriculture through capital accounts both in the pre- and post-reform period.

It implies that Vietnam has been in the Ricardian Growth Trap, and the major contribution of agriculture must have been the sufficient provision of wage goods at low prices for industrial capital accumulation. Yet, this contribution was at the expense of increasing net resource inflows to agricultural sector. Those results require the explanation for three major important issues:

1. What are the factors affecting the magnitude of agricultural marketed surplus?
2. Is there any relationship between agricultural marketed surplus and the ISRFs? Did the increasing net resource inflows give major explanation for the growth of agricultural marketed surplus in the post-reform period, compared to those in the pre-reform period?
3. What are the actual institutional factors affecting the financial flows between sectors?

In Chapter 6, it is shown that the volume of agricultural marketed surplus positively depends on agricultural labor productivity, terms of trade and the effectiveness of the agricultural marketing system. Besides the pace of labor transfer out of agriculture, agricultural labor productivity is positively related to the impetus of agricultural growth. This growth depends on the changes in crop structure, quantity and quality of investment in agriculture, and technology innovation in the sector. Therefore, the composition of resource inflows to agriculture has important implications for growth dynamics as well as the marketed surplus of the sector. The higher the share of investment and intermediate goods in total resource inflows to agriculture, the higher the agricultural growth, and the higher agricultural marketed surplus will be.

Bearing such suggestions in mind, this chapter is structured into 4 sections. In Section 1, the growth accounting framework is used to analyse factors affecting agricultural growth. This is considered necessary as it has been suggested in Chapter 4 that agricultural growth and labor productivity has important impact on the agricultural marketed surplus and ISRFs. Section 2 focuses on the commodity side of ISRFs by utilizing the results from Section 5 of Chapter 4 and Section 1 of this chapter to show the relationship between four important variables, which are,

agricultural marketed surplus, agricultural labor productivity, agricultural terms of trade and intersectoral resource flows. Correspondingly, Section 3 emphasizes on the financial side of ISRFs. Section 4 ends the chapter by giving important conclusions.

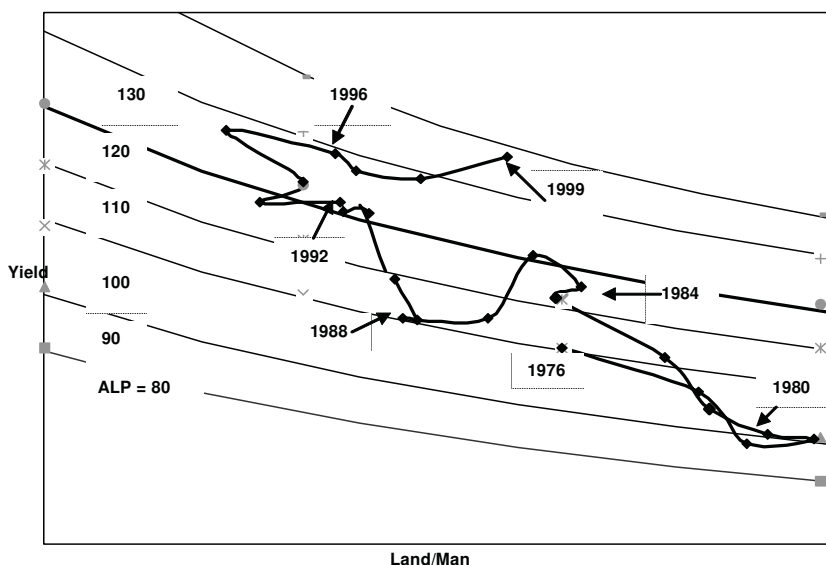
7.1. Agricultural Growth

7.1.1. Trends in agricultural growth

Looking at Table VII.1 and Figure VI.1, there was no growth of agricultural labor productivity for the entire pre-reform period. Within the pre-reform period, growth of agricultural labor productivity was positive only in 1981-84. In contrast, the post-reform period witnessed continuous growth of agricultural labor productivity over time. Growth of agricultural labor productivity, for most of the time, came from an increase in yield, except for the 1997-99 period. For most of the studied period, land expansion was very limited while population growth was quite high. Cultivated land per capita¹ of Vietnam was among the lowest in the world. It was about 0.5 ha in the pre-reform period and decreased to 0.3 ha in the post-reform period.

In the pre-reform period, the cultivated area did not change. Attempts to increase irrigated areas helped the growth of sown area at 2 percent on annual average. This increase, however, could not compensate for the growth of the agricultural labor force at 2.5 percent per year. As a result, land/man ratio decreased 0.5 percent per year. For the entire pre-reform period, there was no change in agricultural labor productivity as yield grew at only 0.5 percent on annual average. Growth of agricultural labor productivity was highest at 6.1 percent on annual average in 1981-84, when growth of yield was also highest at 7.8 percent. Agricultural labor productivity decelerated to 2.9 percent per year in 1976-80, when the growth of yield was lowest at negative 4.9 percent though the land/man ratio increased at 1.9 percent. The decrease of agricultural labor productivity in 1985-88 was due to both the negative growth of yield and land/man ratio.

Figure VII.1.
Growth Pattern of Agricultural Labor Productivity, 1976-99
 (index, 1976 = 100)



Source: Estimated from Table VII.A.1.

Three points are worth noting. First, growth of both agricultural labor productivity and yield was highest in 1981-84 when the first wave of agricultural reform was initiated, accompanied by the increase in agricultural terms of trade. Second, land/man ratio increased fastest in 1976-80 when the State put much effort on land reclamation and the irrigation system. This effort, however, was not paid off as yield was seriously reduced. It suggests that either incentives for peasant households were too low, or investment was used wastefully in agriculture during 1976-80. Third, growth of agricultural labor productivity depended on yield, which was influenced by working effort of producers and the use of working capital inputs such as seed, fertilizer and pesticide. Incentives made by Contract 100 encouraged peasant households to put more labor effort and fertilizer into production. The use of fertilizer per ha of sown area increased fastest by 25 percent per year during 1981-84. In contrast, the use of fertilizer was decreased or stagnated in 1976-80 and 1985-88.

Table VII.1.
Agricultural Labor Productivity, 1976-99

Period	Index (1976 = 100)			Growth (%)		
	ALP	Yield	Land/man	ALP	Yield	Land/man
	1 = 2*3	2	3	4 = 5-6	5	6
76-80	92	87	106	-2.9	-4.9	1.9
81-84	104	102	103	5.7	7.5	-1.7
85-88	105	109	96	-2.8	-1.2	-1.6
76-88	100	98	102	0.0	0.5	-0.5
89-92	115	125	92	4.3	5.1	-0.8
93-96	122	137	89	1.8	1.9	-0.1
97-99	130	137	95	2.1	-0.2	2.3
89-99	122	133	92	2.8	2.5	0.3

Source: Calculated from Table VII.A.1.

In the post-reform period, both cultivated and sown area increased, which was partly explained by the incentives of the reform and partly explained by the investment in land reclamation and irrigation in the past (van Donge *et al.* 1999: 43). The growth of sown area at 3 percent per year was sufficient to counter the increase in the agricultural labor force at 2.7 percent per year. As a result, land/man ratio increased at 0.3 percent per year. For the entire post-reform period, agricultural labor productivity increased at 2.8 percent on annual average, which was, however, mostly supported by yield growth at 2.5 percent per year. Growth of agricultural labor productivity and yield was highest at 4.3 and 5.1 percent per year during 1989-92. This growth was considerable as the growth of the agricultural labor force was recorded at high level of 3.2 percent per year in 1989-92. In 1993-96, growth of agricultural labor productivity and yield was stagnated at only 1.8 and 1.9 percent per year, respectively. In 1997-99, growth of agricultural labor productivity was only 2.1 percent per year, which came mainly from the growth of land/man ratio at 2.3 percent, as yield growth was even negative.

There are three remarks for this period. First, growth of agricultural labor productivity in post-reform period was higher than that in the pre-reform period. As the growth of agricultural labor force in this period was higher than that in the pre-reform period, the higher growth of agricultural labor productivity must have been due to increase in yield. Second, yield growth was highest in 1989-92 along with the introduction of

Contract 10. The 1989-92 period also witnessed the highest growth of fertilizer use per hectare of sown area, which nearly doubled that in the pre-reform period. Third, yield growth was modest or even negative in 1993-96 and 1997-99. It suggests that the 1989 reform only had one-off effect on yield and agricultural growth. Further, agricultural growth may have required the use of new inputs and technology.

The above observations bring about two conclusions. First, land availability was very limited in Vietnam. As suggested earlier, labor transfers out of the agricultural sector were insignificant and agricultural labor force grew at a high speed. Therefore, increases in agricultural labor productivity must have come from yield growth and the application of land-intensive technology. Second, the incentive effects of Contract 100 in 1981 and Contract 10 in 1988 brought about most of growth of yield. Yet, there was no clear evidence of the effect of investment and technology on yield growth. This point will be discussed further below.

7.1.2. Factors contributing to agricultural growth

The generation of agricultural surplus needs investment in agriculture. Yet, it is not sufficient. Further, this investment needs to be used efficiently. The above observations just suggest that investment in Vietnam's agriculture was used inefficiently in the pre-reform period, and then more efficiently in the post-reform period. This section will investigate the impact of investment on agricultural growth and marketed surplus by using accounting framework for agricultural growth.

Agricultural growth is affected by three factors: (i) changes in crop structure, in which crops with higher value per unit of output generate higher growth; (ii) changes in the quantity of inputs such as land, labor and capital; and (iii) total factor productivity, which reflect the efficiency of production and the level of technology innovation in agriculture.

There are several studies on growth accounting of Vietnam's agriculture (CERCADE 1997a, David 1994, Jamal and Jansen 1998, and Nguyen, N.Q. and Goletti 2001). For the purpose of this study, results of other studies will be adapted by four adjustments. First, most of the other studies look at changes in crop structure very superficially. For instance, CERCADE (1997a) just concentrated on growth accounting of food sector. David (1994) and Nguyen, N.Q. and Goletti (2001) just

considered the effects of factor inputs and factor productivity on agricultural growth. Jamal and Jansen (1998) took the changes on crop structure into consideration, yet agricultural growth was calculated by the volume of cultivation output only. No accounting was put on the development of livestock sector. In addition, sources of data used in the study of Jamal and Jansen (1998) were very unclear. So, for this study it is necessary to account for the growth of all sectors in agriculture valued at constant prices.

Second, other studies do not cover the entire period of 1976-2000 both due to data limitation and to different purposes from the present one. In addition, the timeframe used in the other studies was also different from this one². For the purpose of this study, all data for agricultural growth accounting will be collected for the entire period of 1976-80 and averaged for six sub-periods: 1976-80, 1981-84, 1985-88, 1989-92, 1993-96, and 1997-99³.

Third, most of data used here come from the GSO with 2 adjustments. Data on fertilizer use is collected from FAO, rather than from GSO, as this source is considered more reliable and time-series data of this source is continuous for the whole studied period. Another advantage of using FAO data is that the volume of the fertilizer was transformed into homogeneous units. Besides, quantity of labor inputs is adjusted following the method of Nguyen, N.Q and Goletti (2001: 18-9). It is suggested that from 1991 backwards figures on agricultural labor force provided by GSO means the number of agricultural population at working age of 16-60 excluding unworkable people, while from 1992 upwards agricultural labor force means total agricultural population at working age of 16-60. Therefore, using GSO data, one may see that there was a very sharp increase in agricultural labor force in 1991-92. This problem does not clearly depict the effect of labor input on agricultural growth. In fact, only working people should be included in agricultural labor input. As a result, data on agricultural labor force in 1992-99 is adjusted by multiplying the share of working people over all agricultural workable people in 1993-95 with total agricultural labor force, whose data was provided by GSO during 1992-99⁴.

Fourth, agricultural growth accounting follows log-linear Cobb-Douglas production function, assuming constant returns to scale in agricultural production. This method requires the estimates of elasticities of

various inputs (land, labor, and capital) to output, in order to calculate the contribution of each input to agricultural growth. The residual is attributed to the contribution of total factor productivity to agricultural growth. For the case of Vietnam, David (1994) and Jamal and Jansen (1998) borrowed these indicators from estimates of agricultural production function using cross-section data among countries that have conditions in agricultural production quite similar to Vietnam⁵. This method is quite convenient, but it cannot take into account the specific nature of Vietnam's agricultural production. Nguyen, N.Q. and Goletti (2001) made an attempt to estimate a log-linear production function for Vietnam's agriculture by using panel data for 61 provinces in Vietnam during 1985-99. This study will use the estimates of Jamal and Jansen (1998), and Nguyen, N.Q. and Goletti (2001) to calculate agricultural growth accounting for the period of 1976-2000, in order to make the comparisons with other studies easier.

Table VII.2.
Composition of Agricultural Crops, 1976-2000
(percent, 1994 price)

	Pre-Reform Period			Post-Reform Periods				
	76-80	81-84	85-88	76-88	89-92	93-96	97-2K	89-2K
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cultivation	86.1	84.1	82.6	84.4	82.9	82.8	82.7	82.8
Food	58.4	57.1	54.3	56.7	55.8	54.0	52.2	54.0
Paddy	48.3	48.8	47.1	48.1	49.7	48.6	47.6	48.6
Non-Food	27.7	27.0	28.3	27.7	27.1	28.8	30.4	28.8
Husbandry	13.9	15.9	17.4	15.6	17.1	17.2	17.3	17.2

Source: Calculated from Table VII.A.2.

First of all, the study now considers changes in the crop structure of agricultural production. It is expected that changes in crop structure towards higher-value-per-unit products such as industrial crops, fruits, vegetables and husbandry will contribute to agricultural growth in terms of value. It is argued that there was no significant change in the crop structure of agricultural production during the entire studied period. Table VII.2 shows that share of husbandry in total agricultural output was stable at less than 20 percent during the entire studied period. Within the cultivation sector, food and especially paddy production played a domi-

nant role. Meanwhile, the industrial crop accounted for less than 30 percent of total agricultural output and was very unstable.

There are four reasons for this slow change in crop structure of agricultural production. First, Vietnam had tried to maintain policies of food security for a long time. In the pre-reform period, food self-sufficiency was even implemented at provincial and district levels. After the economic reform, there was still the crop specification for each type of land, which favored paddy production.

Second, a research system put most of its concentration on the technology development of food and particularly paddy production. Little attention was paid to the development of other crops and husbandry.

Third, growth of industrial crop sector was contingent on the export market, which was very unstable. Meanwhile, the processing technology was poor as the research system was biased for the development of production technology. As a result, investment on industrial crops was quite risky, thus its output growth was very unstable.

Lastly, development of husbandry sector was hindered by domestic demand shortage, as this sector was not competitive in the world market. Mellor (1994: 14-8) forecasted that the husbandry sector would come to account for more than 30 percent of total agricultural output in the years around 2000. His anticipation was based on the estimate that husbandry sector would grow fastest at 7 percent per year, compared to the growth of food and industrial sector at 3.5 and 4 percent, respectively. Nevertheless, growth of the food and industrial crop sectors was higher than Mellor's expectation while growth of husbandry sector was less than 7 percent. Hence, share of husbandry in total agricultural output was still stable at less than 20 percent. Yet, the problem was not only due to high growth of food and industrial crop sector. In fact, domestic demand for products of the animal husbandry sector was less than what was expected, given the growth in income and high-income elasticity of demand for meats. Mellor (1994: 18) assumed a conservative growth of GDP at 5.4 percent, population growth at 2 percent and income elasticity of demand for animal husbandry products of 1.5, to come to the growth of 7 percent per year for the animal husbandry sector. In fact, GDP growth was quite high 7.8 percent, hence demand for the animal husbandry sector should have grown at 13-14 percent instead. Nevertheless, the real growth of the animal husbandry sector was only 7 percent,

showing the low-income elasticity of demand for husbandry products. This was possibly due to the concentration of benefit of high growth into few urban centers.

As a result, agricultural growth was likely to depend on the quality and quantity of inputs used in agricultural production. Tables VII.3 and VII.4 show the growth accounting framework of Vietnam's agricultural growth, using output elasticities applied by Jamal and Jansen (1998) and Nguyen, N.Q., and Goletti (2001).

Table VII.3.
Agricultural Growth Accounting, Using Jamal and Jansen's Elasticities
(percent)

Factors of Agricultural Growth							
Period	Q _a	Sown Area	Labor	Fertilizer	Work Animal	Tractor	TFP
77-80	-0.8	1.2	0.9	-1.4	0.1	0.7	-2.2
81-84	8.1	0.2	0.9	2.2	0.4	0.5	3.9
85-88	0.0	0.3	1.1	1.1	0.4	-0.7	-2.2
76-88	2.4	0.6	1.0	0.6	0.3	0.2	-0.2
89-92	7.4	0.7	1.2	0.8	0.2	1.3	3.1
93-96	4.7	0.9	1.2	1.5	0.2	2.7	-1.6
97-99	3.7	1.2	0.6	0.9	0.0	0.9	0.1
89-99	5.4	0.9	1.0	1.1	0.1	1.7	0.5
Elasticity		0.3	0.4	0.1	0.1	0.1	
Contribution to Agricultural Growth							
Period	Q _a	Sown Area	Labor	Fertilizer	Work Animal	Tractor	TFP
77-80	100	-151	-106	173	-10	-83	278
81-84	100	2	12	27	5	6	48
85-88	100	-1137	-3725	-3628	-1474	2479	7585
76-88	100	24	40	26	12	6	-8
89-92	100	9	17	11	3	18	42
93-96	100	18	25	31	4	57	-35
97-99	100	31	17	26	-1	25	2
89-99	100	16	19	20	2	32	10

Source: Calculated from Table VII.A.1. Elasticities of output to inputs are adopted from Jamal and Jansen (1998: 33).

Table VII.4.
Agricultural Growth Accounting, Using Nguyen and Goletti's Elasticities
 (percent)

Factors of Agricultural Growth							
Period	Q _a	Sown Area	Labor	Fertilizer	Tractor	Pump	TFP
77-80	-0.8	1.5	0.7	-3.4	0.0	0.1	0.2
81-84	8.1	0.2	0.7	5.3	0.1	0.1	1.6
85-88	0.0	0.4	0.9	2.6	0.2	-0.1	-4.0
76-88	2.4	0.7	0.8	1.5	0.1	0.0	-0.7
89-92	7.4	0.9	1.0	2.0	0.1	0.2	3.3
93-96	4.7	1.1	0.9	3.6	0.1	0.4	-1.3
97-99	3.7	1.5	0.5	2.3	0.0	0.1	-0.6
89-99	5.4	1.1	0.8	2.7	0.0	0.3	0.5
Elasticities		0.3748	0.3100	0.2412	0.0399	0.0152	
Contribution to Agricultural Growth							
Period	Q _a	Sown Area	Labor	Fertilizer	Tractor	Pump	TFP
77-80	100	-189	-82	417	-4	-13	-30
81-84	100	3	9	66	2	1	20
85-88	100	-1421	-2887	-8750	-588	376	13370
76-88	100	30	31	62	5	1	-29
89-92	100	12	13	27	1	3	44
93-96	100	23	19	76	1	9	-27
97-99	100	39	13	62	0	4	-17
89-99	100	20	15	49	1	5	10

Source: Calculated from Table VII.A.1. Elasticities of output to inputs are adopted from Nguyen, N.Q and Goletti, F (2001: 33).

Four observations can be made from the two tables. First, growth of agricultural output was highest at 8.1 and 7.4 percent respectively during 1981-84 and 1989-92, when contribution of total factor productivity (TFP) into output growth was also highest. The significant contribution of TFP to output growth in 1981-84 and 1989-92 coincided with the promulgation of Contract No. 100 and Contract No. 10 in 1988. This

suggests that most of agricultural growth during the studied period came from changes in incentive structure and economic institutions. In addition, it also implies that changes in crop structure and technology did not play a significant role in agricultural growth.

Second, calculated by the output elasticities used by Jamal and Jansen (1998), contribution of TFP into output growth was the highest, among factors of production, during 1981-84 and 1989-92 when output growth was the highest during the entire studied period. Meanwhile, using the formula of Nguyen, N.Q. and Goletti (2001), the most important factor for agricultural growth during 1981-84 and 1989-92 was fertilizer as the elasticity output to fertilizer used by Nguyen, N.Q and Goletti was 2.5 times that by Jamal and Jansen. Even in Nguyen, N.Q and Goletti, the TFP was also the most important factor for agricultural growth during 1989-92, and the second-most important factor during 1981-84. This suggests the correlation between TFP and the use of fertilizer, which was the most important factor enhancing land-saving agricultural growth. In other words, incentives from Contract No. 100 and Contract No. 10 did encourage peasant households to put more efforts and fertilizer into agricultural production. In fact, the use of fertilizer per ha increased by 25 and 7 percent per year in 1981-84 and 1989-92, respectively.

Third, in the pre-reform period, the contribution of fixed capital (such as working animal, tractor and pump) in output growth was insignificant or even negative. Share of fixed capital inputs in total output growth was significant in 1976-80 and 1985-88, when output growth was negative or very low. In contrast, output growth was highest in 1981-84, when share of fixed capital inputs in total output growth was insignificant at less than 10 percent. It implies that agricultural growth in the pre-reform period required the use of more land-saving inputs. The use of labor-saving inputs such as working animal, tractor, and pump did not improve agricultural growth considerably.

Fourth, in the post-reform period, the contribution of TFP to output growth was decreasing. This means that the reform in 1988 had only one-off effect on agricultural growth. Jamal and Jansen (1998) suggests that there was the over-use of variable inputs such as fertilizer and pesticide in agricultural production, which then hampered the efficiency of inputs used in agriculture and agricultural growth. Meanwhile, Arkam-Lodhi (2001a) attributes the falling contribution of TFP to output

growth to changes in technical coefficients of agricultural production. It is argued that efficiency of agricultural production was higher in large-scale farms that used more capital-intensive inputs.

In brief, major factor for agricultural growth came from changes in incentive structure and institutions in agricultural production. Higher share from surplus product encouraged peasant households to use more land-intensive inputs in agricultural production, which was very important for agricultural growth under the circumstance of land scarcity. In the pre-reform period, low agricultural growth was partly due to the bias in investment structure, which favored the use of labor-saving inputs.

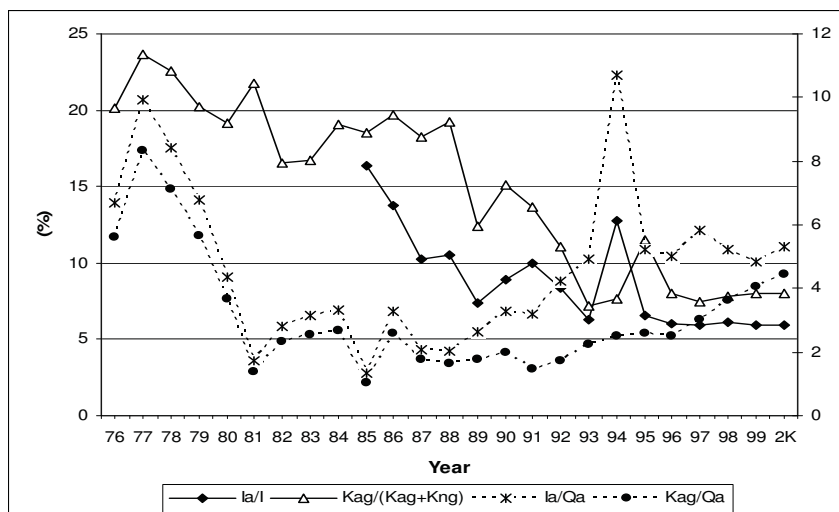
In the post-reform period, agricultural growth became better. There was a boom in the consumption of intermediate inputs such as fertilizer and pesticide. This was partly explained by the incentives initiated by the 1988 reform, and partly by the availability of rural credit (Jaman and Jansen, 1998: 12).

Nevertheless, the contribution of variable inputs had come to the limit. Further agricultural growth required the use of more capital-intensive inputs. The above observations also bring about two implications. First, technology innovation did not play a significant role in agricultural growth. Second, further agricultural growth would require the changes in crop structure toward industrial crops and husbandry. This, in turn, needed the use of relatively more capital-intensive inputs and more attention of the research system placed on technology development of industrial crops and husbandry.

7.1.3. Investment and agricultural growth

Thereafter, it is argued that changes in agricultural growth, TFP as well as obstacles imposed on further agricultural growth were closely related to the way investment was used in agricultural production. As land was limited, the use of land-saving inputs and changes in crop structure towards more commercialized products with higher unit value positively affected agricultural growth. Therefore, agricultural investment would be more efficient if it encouraged the use of land-saving inputs and enhanced changes in crop structure.

Figure VII.2.
Total and State Investment in Agriculture, 1976-2000
 (percent, current prices)



Source: Table VII.A.3.

Figure VII.2 shows the trend of agricultural investment as a share of total investment, State investment in agriculture and agricultural output. Three observations can be made from the figure. First, the share of State investment that went to agriculture was quite significant at around 20 percent in the pre-reform period, and this share decreased sharply to only 10 percent in the post-reform period. It is against the conventional thinking that agriculture was less favored in the relocation of State investment in the pre-reform period.

Second, State investment played a dominant role in agricultural investment in both the pre- and post-reform period though it became less important in the latter period⁶. As shown in Figure VII.2, the share of agriculture over total investment was higher than that over State investment only in 1994.

Table VII.5.
Share of Investment over Agricultural Output, 1976-2000
 (annual average, percent)

Year	Total	State	FDI	Domestic Non-State
	1= 2+3+4	2	3	4
1976-80	7.2	6.1	0.0	1.2
1981-84	2.8	2.2	0.0	0.5
1985-88	2.2	1.8	0.0	0.4
1976-88	4.3	3.6	0.0	0.7
1989-92	3.3	1.7	0.1	1.5
1993-96	6.5	2.5	0.6	3.4
1997-2000	5.3	3.8	0.3	1.2
1989-2000	5.0	2.7	0.3	2.1

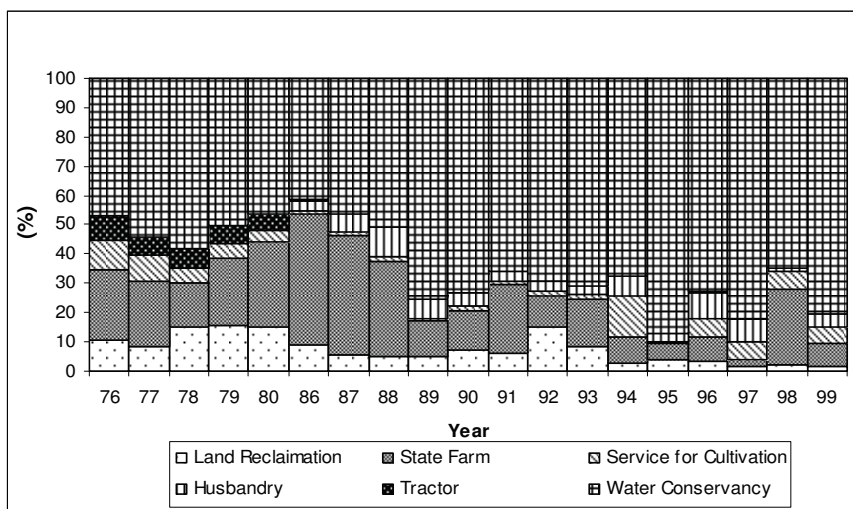
Source: Calculated from Tables VI.7 and VII.A.4.

Third, Table VII.5 shows that the share of investment over agricultural output improved by about 15 percent from the pre- to post-reform period, due to the growth of household investment after the 1989 reform. However, it is believed that the investment rate in agriculture must have been higher in the pre-reform period as official data do not take into account self-investment within agricultural cooperatives that were very important for the construction of rural infrastructure in the pre-reform period. Furthermore, comparing the allocation of total and State investment between sectors, Figure VII.3 shows that State investment favored agriculture more than non-State investment did in the post-reform period, as $K_{ag}/(K_{ag}+K_{ng})$ was higher than I_a/I for most of the time. It also can be observed that in the post-reform period, the share of non-State investment in agricultural investment increased only slightly in 1989-92 and 1993-96 as the gap between I_a/Q_a and K_{ag}/Q_a widened. In 1997-2000 State investment played a dominant role in agricultural investment again. This implies that investment from foreign investor⁷ and private households in the post-reform period was not as much as expected to replace role of State investment in the agricultural sector.

Analysis on agricultural growth suggests that investment was used inefficiently in the pre-reform period compared to that in the post-reform period. There are three reasons explaining the lower efficiency of investment in agriculture in the pre-reform period.

First, in the pre-reform period, investment was bias for large-scale agricultural production. In Table VII.5, total investment in agriculture assumes to be financed by the State and lending to the cooperatives, as investment by peasant households were limited at that time⁸. State investment played the dominant role, but it was spread over many large-scale projects. New projects were favored in investment policy while the maintenance of such projects was poor. Also, investment by the cooperatives was used wastefully in large projects such as stores, pump and electric stations, just to show off the achievement of large-scale socialist agricultural transformation (Nguyen, S.C. and Nguyen, V.T. 1995: 39).

Figure VII.3.
Composition of State Investment in Agriculture, 1976-99



Source: Table VII.A.4.

Second, in the pre-reform period from 20 to 40 percent of State investment in agriculture was put on State farms, which generated only 2 percent of agricultural output (Figure VII.3). The State had expected that this investment could bring back export products such as coffee, rubber, tropical fruits and other vegetables for the exchange with CMEA countries. But, as suggested earlier, performance of agricultural export, in fact, was very poor. Furthermore, available data shows that majority of State

procurement on export products came from cooperative and household sector. This means that investment in State farms was used very efficiently.

Third, Figure VII.3 also shows that from 5 to 10 percent of State investment financed the purchases of large tractors, which were not productive in the case of land limitation and smallholding agricultural production.

In the post-reform period, efficiency of agricultural investment was improved. In part, this reflects the improved incentives for the farmers to make investment in agriculture. Though private investment in agriculture was smaller than State investment, it had an important positive effect on agricultural growth. Most of private investment was small-scale and more undertaken in high growth regions like the Mekong Delta and the Central Highlands. In fact, it really enhanced the use of land-intensive inputs for high agricultural growth (Barker 1994: 127). In addition, State investment in agriculture was more concentrated in a number of important projects on water conservancy only (Figure VII.3).

As a result, changes along the economic reform brought about more efficiency to agricultural investment in the post-reform period. Yet, the one-off effect of the agricultural reform in the late 1980s was likely to be exhaust. Further agricultural growth would require more investment in agriculture and the use of capital-intensive inputs in agricultural production. In addition, agricultural diversification toward higher-value-per-unit crops was another important way for agricultural growth.

Akram-Lodhi (2001b), from his study on two cases in the Mekong River Delta, shows that purchased machinery and equipment were an important source for agricultural growth, and changes in technical coefficient of agricultural production in the post-reform period was likely to favor large-scale farms. This means that there was no clear inverse relationship between farm size and agricultural productivity. Furthermore, in another paper Akram-Lodhi (2001a) suggests that large-scale and more capital-intensive farms often had higher proportion of land areas used for industrial and commercial crops. Watts (1998) observes from his case study in Vinh Phu province (Red River Delta) that under the equal land-holding system based on a 'modified Chayanovian' principle, the most dynamic factor for agricultural growth must have come from non-rice sectors that generated higher value per unit of products. My own study

(Nguyen, D.A.T. 2002) on Namdinh province (Red River Delta) also shows that productivity was higher in the larger-scale farms and agricultural growth must have come from the expansion of husbandry and non-rice crops.

Against this context, three obstacles remained to further growth of agriculture. First, investment in agriculture was limited in large part because of low incentives for the private sector to make investment in agriculture. Second, related to the last point, land fragmentation impeded not only incentives to invest in agriculture, but also the development of commercial agriculture⁹. It is reported that on average an agricultural household owned around 1 hectare with 5 plots of land. The situation was even more serious in the densely populated Red River Delta where an agricultural household owned only 0.2 hectare with eight plots of land, ranging from 150 to 600 square meters. It was difficult to induce agricultural households to make investment and apply new technologies on such tiny plots of land. Third, investment for crop diversification was still limited. On one hand, this was due to the fragmentation of land holdings. On the other hand, it reflects the fact that food self-sufficiency still received priority in agricultural policies. A certain amount of land was postulated to reserve for food cultivation. Furthermore, the research and extension service system was still biased for technical innovation in food production only.

In short, there are three conclusions from the investigation on agricultural growth. First, labor productivity was mainly dependent on yield and total output of agricultural sector itself, as labor transfer out of agriculture was limited.

Second, agricultural growth was strongly influenced by total factor productivity, which in turn mostly followed changes in incentive structure and agrarian institutions brought about by agricultural reforms in 1981 and 1989.

Third, there was no clear signal that agricultural growth was enhanced by changes in crop structure and agricultural investment. Crop diversification was undertaken very slowly and biased for food production for the entire studied period. In the pre-reform period, the State played dominant role in agricultural investment, but this investment was used very inefficiently. In the post-reform period, agricultural investment was still mainly financed by the State. It was likely that agriculture became the

neglected sector by private and foreign direct investment in the post-reform period. Together, total investment in agriculture in the post-reform was even more limited, compared to the pre-reform period. Though efficiency of agricultural investment was improved in the post-reform period, empirical evidence suggests that further growth of the sector would require more investment and the use of more capital-intensive inputs. Therefore, low investment rate in the sector became the major obstacle to agricultural growth. As a result, it implies that resource inflows, even in terms of capital goods, did not enhance agricultural growth, hence the generation of agricultural marketed surplus and financial surplus for non-agricultural sector. This will be discussed further on the next sections.

7.2. Commodity Side of ISRFs

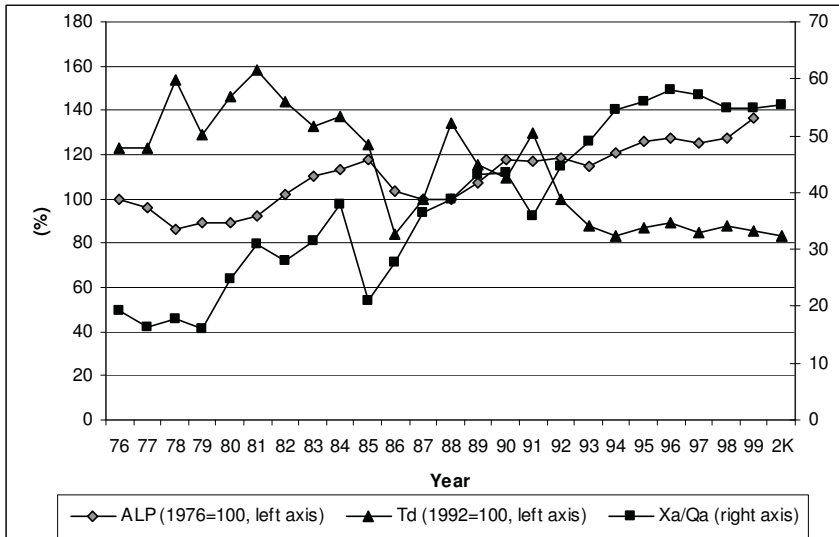
As one views the sale ratio and agricultural labor productivity in Figure VII.4 and Table VII.6, it is obvious that there was no clear positive relation between agricultural marketed surplus and agricultural labor productivity between the pre- and post-reform periods. Between the two periods, agricultural labor productivity increased by 15 percent on annual average while the sale ratio rose by 60 percent.

Table VII.6.
Determinants of Agricultural Marketed Surplus, 1976-99

Period	ALP (1000 VNDs, 1992 prices)	X_a/Q_a	M_a/Q_a	T_d (1992 = 100)
	1	2	3	4
76-80	1970	19	42	135
81-84	2236	32	44	143
85-88	2250	31	51	111
76-88	2138	27	45	130
89-92	2467	42	71	114
93-96	2616	54	88	87
97-99	2764	56	90	87
89-99	2605	50	82	96

Source: Table VII.A.6.

Figure VII.4.
Determinants of Agricultural Marketed Surplus, 1976-2000



Source: Table VII.A.19.

Looking at the period from 1985 and 1990, when important price and trade liberalization occurred (such as the ban of internal trade checkpoints and gradual removal of dual price system), one can see that the continuously sharp increase in sale ratio was not closely associated with the growth of agricultural labor productivity. In this period, sale ratio increased by more than 2 times from 21 to 43 percent, while agricultural labor productivity was declining in 1985-88, and only accelerating in 1989-90.

It is worth noting that although agricultural labor productivity decreased continuously during 1985-88, the sale ratio still made a sharp increase from 21 percent in 1985 to 39 percent in 1988 and most of this growth came from the acceleration of sale in the free market¹⁰. In addition, taking the 3 years of 1983-85, when agricultural labor productivity was highest in the pre-reform period and it was lower than that in 1989-92 by 10 percent, the sale ratio in 1983-85 was 25 percent lower than that in 1989-92. The point stands out even more if one take into consideration that the sale ratio in 1989-92 was the lowest in the post-reform period.

Second, within the pre-reform period sale ratio went along well with changes in agricultural labor productivity. Sale ratio increased quite fast from 19 percent in 1976-80 to 32 percent in 1981-84 as agricultural labor productivity increased from 1970 to 2236 thousand VNDs, respectively. From 1981-84 to 1985-88, sale ratio stayed more or less at the same level as agricultural labor productivity improved slightly to 2250 thousand VNDs. It is worth noting that in 1985-88 the sale ratio was not expected to be higher than that in 1981-84 because inflation was very high and terms of trade for agriculture deteriorated seriously.

Third, within the post-reform period the positive relation between sale ratio and agricultural labor productivity was held quite firmly for the 1988-92 and 1993-96 periods. Except for the year 1991 when there was bad harvest due to natural disaster, sale ratio increased continuously from 43 percent in 1989 to 58 percent in 1996, along with the increase in agricultural labor productivity from 2141 to 2733 thousand VNDs. Particularly, sale ratio jumped quite substantially from 42 percent in 1989-92 to 54 percent in 1993-96. During 1997-99, the sale ratio stayed at more or less than 55 percent, even though agricultural labor productivity kept on accelerating from 2682 to 2915 thousand VNDs.

It is worth noting that the composition of agricultural marketed surplus did not change much from 1989-92 to 1993-96. Share of consumption, intermediate and export goods over agricultural marketed surplus stayed around 65, 10 and 25 percent respectively in these two sub-periods. In 1997-99, the share of consumption goods was dramatically reduced to 55 percent and it was compensated by the increase in the share of export to 35 percent¹¹. This implies that since 1996 sale ratio was more demand-oriented, instead of supply-oriented and the stagnation in domestic demand for agricultural consumption goods and limitation of export market put major constraints on the expansion of agricultural marketed surplus.

Consequently, the above observations may bring about three tentative propositions. First, comparing between the pre- and post-reform periods, the sharp increase in the sale ratio after the economic reform was not a result of the increase in agricultural labor productivity. Instead, this obvious improvement may have come from price and trade liberalization undertaken in 1987-89.

Second, within the pre-reform period sale ratio was positively related to agricultural productivity. This relation was held quite tenably in 1976-80 and 1981-84. In 1985-88, hyperinflation and deterioration in agricultural terms of trade hindered the increase in sale ratio though agricultural labor productivity still increased.

Third, within the post-reform period, sale ratio and agricultural labor productivity went along well only for the 1988-92 and 1993-96 sub-periods. Since 1996, the sale ratio was more demand-oriented and not closely related to agricultural labor productivity. In Section I, it is suggested that a major demand constraint on the expansion of agricultural production was the slow changes in employment structure. As benefits of economic growth were concentrated into only a few big urban centers, domestic demand for agricultural products was quite limited. This may explain the stagnation of sale ratio since 1996.

Looking at the trend of agricultural terms of trade, paradoxically it was negatively related to sale ratio between the pre- and post-reform periods. The above observation suggests that the sale ratio was not likely to be positively related to agricultural labor productivity either. Therefore, the only explanation left over for the sharp increase in sale ratio after the economic reform was price and trade liberalization.

In the pre-reform period, three factors accounted for low agricultural marketed surplus. First, the dual price system discouraged peasant households to supply agricultural goods to the State procurement system. In the official market, agricultural terms of trade were relatively high compared to those in the post-reform period, but absolute prices of both agricultural and non-agricultural goods were kept artificially low. In addition, delivery of agricultural goods through the collective system caused a high transaction cost. In many cases, peasant households tried to avoid paying taxes and delivering agricultural goods stipulated in the contract quotas.

Second, State trading agencies were not always able to supply non-agricultural goods to peasant households in good quality and in time due to shortages of non-agricultural goods. This stimulated peasant households to look for marketing surplus products in the black market.

Third, internal trade posts, however, hindered the exchange in the black market¹². This means that transaction costs in the black market were also very high. In addition, the inflation rate was very high in this

period. Consequently, peasant households were discouraged to exchange agricultural for non-agricultural goods in both official and black markets. Instead, they preferred self-consumption of agricultural goods. In this period, the falsification of agricultural output was quite popular. Besides, in many cases peasant households used food for feeding livestock or making wine.

In the post-reform period, four fundamental changes brought about sharp increases in the agricultural marketed surplus. First, the abolition of dual price system and internal trade posts helped unifying the market and reducing transaction costs.

Second, import liberalization and development of non-agricultural sector after the reform generated availability of non-agricultural goods to exchange with agricultural sector.

Third, the removal of regional food self-sufficiency policy created opportunities for agricultural specialization and commercialization, which in turn encouraged the exchange of commodities among regions and sectors.

Finally, a higher base agricultural export was stimulated by external trade liberalization and devaluation.

It is worth noting that within the pre-reform period agricultural terms of trade changed along with agricultural labor productivity and agricultural marketed surplus. This implies that changes in incentives to peasant households had important meaning for agricultural production and peasants' willingness to exchange with the non-agricultural sector, given the existing agricultural marketing system. In contrast, within the post-reform period agricultural terms of trade decreased continuously while agricultural output and agricultural marketed surplus kept increasing. This means that the incentives from the reform and reduced transaction costs from market development encouraged both agricultural growth and engagement of agricultural sector into the entire market system.

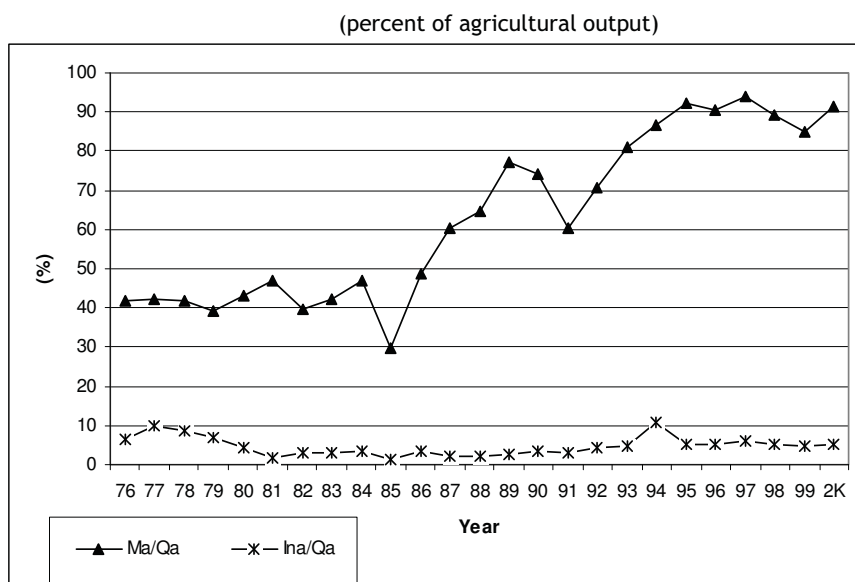
Back to Chapter VI, it is observed that the net resource inflows to agriculture were higher in the post-reform period compared to those in the pre-reform period. Does this mean that high agricultural marketed surplus in the post-reform period was enhanced by high resource inflows from non-agriculture? This proposition is accepted if three conditions exist. First, agricultural marketed surplus is closely associated with agricultural labor productivity. Second, the major share of commodity in-

flows to agriculture exists in the form of investment goods that enhance agricultural growth. Third, investment should be used efficiently in agriculture. All of such conditions were not likely to prevail in the comparison between pre- and post-reform periods in Vietnam.

First, earlier investigation on the agricultural marketed surplus shows that it was not consistently dependent on agricultural labor productivity between the pre- and post-reform periods.

Second, the relation between investment and agricultural growth was not so clear between the pre- and post-reform periods. Between the two periods, investment rate was not incredibly different, and it is suggested earlier that this rate would be a bit higher in the pre-reform period if self-investment within the cooperatives was accounted for, though official data shows investment rate was slightly higher in the post-reform period compared to that in the pre-reform period. Most of agricultural growth was explained by the improving efficiency of agricultural production, due to the positive effects of the reform on farmers' incentives.

Figure VII.5.
Purchases of Non-Agricultural Goods by Agricultural Institutions, 1976-2000



Source: Table VII.A.6.

Table VII.7.
Composition of Commodity Inflows to Agriculture
 (percent of total)

Year	1981	1989	1996
Total	100.0	100.0	100.0
Consumption	67.7	80.7	71.1
Intermediate	28.6	15.9	23.4
Investment	3.7	3.4	5.5

Source: Data in 1989 and 1996 from I-O Tables. Data from 1981 is estimated as follows. Before 1989, there was only one tentative effort to build the I-O Table for Vietnam, but it was very crude and the source of information was very unclear. In addition, no one knows exactly where it is now. Fortunately, Do, V.S. and Tran, V.L. (1981: 22) provide the I-O Table for 1981. Yet, all figures were estimated in physical terms. Therefore, one needs to know the absolute prices of various products in 1981. Assume that Do, V.S. and Tran, V.L. used the table mainly for the purpose of planning, hence official prices should have been applied. In the table, agriculture includes only two products, i.e., paddy and pork, in which only paddy production receives intermediate inputs from non-agricultural sector such as fertilizer, pesticides and electricity. The only intermediate input for pork production is paddy. In the *Journal of Planning* (10/1981, No. 102: 31-3), there were the procurement prices for paddy and pork. It is estimated that price of pork was 7 times that of paddy. Share of paddy input in total paddy output was around 0.06. One ton of pork output needed 3.5 tones of paddy input, 0.5 ($= 1/7 \times 3.5$) of total pork output in value terms. From the composition of agricultural output in Table, it is known that share of cultivation and husbandry in total agricultural output was 0.84 and 0.16 respectively. Therefore, the share of agricultural inputs in agricultural output is estimated at 0.13 ($= 0.06 \times 0.84 + 0.5 \times 0.16$). It is also known that the use of intermediate inputs accounted for 26.4 percent of agricultural output in 1981, therefore the use of non-agricultural intermediate inputs in agriculture was 13.4 ($= 26.4 - 13$) percent of agricultural output. Data on purchases of non-agricultural consumption goods is the residual between total commodity inflows and expenditure on intermediate inputs and investment goods.

Third, in both periods, as shown in Figure VII.5, investment goods accounted for only a tiny share in total commodity inflows into the agricultural sector. This share was around 10 and 6 percent in pre- and post-reform periods, respectively. Even if agricultural growth is supposed to need both investment goods and intermediate inputs from non-agriculture, Table VII.7 shows that the majority of commodity inflows to agriculture existed in the form of consumption goods. Available data just allows the estimate of the composition of purchases of non-agricultural goods by agricultural institutions in 1981, 1989, and 1996 when the I-O

tables exist. Just take the year 1981 as the representative for the pre-reform period, Table VII.7 shows that in the pre-reform period, expenditure on intermediate inputs and investment goods accounted for only 32 percent of value of total commodity inflows to agriculture. In the post-reform period, this share was reduced further to only 19 and 29 percent in 1989 and 1996 respectively. This implies that the majority of the growth of agricultural expenditure on non-agricultural goods was used to buy non-agricultural consumption goods.

Looking at Table VII.8, food accounted for more than 70 percent of total expenditure of agricultural households in the pre-reform period. Expenditure on necessity goods like clothing, housing, education and health accounted for the majority of consumption of non-agricultural goods. In the post-reform period, the share of food in total expenditure was sharply reduced to less than 60 percent. This was compensated by the growth of expenditure on education, health and 'others'.

Table VII.8.
Composition of Expenditure of Agricultural Households, 1976-99
(percent of total expenditure)

Year	Total	Food	Non-Food					
			Total	Educa- tion	Health	Clothing	Housing	Others
Pre-Reform								
1976	100	70	30	2	2	7	4	15
1977	100	71	29	2	2	7	4	13
1978	100	71	29	2	2	7	4	13
1979	100	71	29	2	2	7	4	13
1980	100	70	30	1	2	7	4	15
1981	100	65	35	2	3	10	5	16
1982	100	75	25	1	2	8	4	10
1983	100	78	22	1	1	9	5	6
1984	100	76	24	1	1	9	4	10
1986	100	76	24	1	1	6	5	11
Post-Reform								
1989	100	70	30	9		7	7	7
1994	100	57	43	2	4	7	2	28
1995	100	60	40	2	3	7	3	25
1996	100	59	41	3	4	6	3	27
1999	100	58	42	3	5	6	3	25

Source: Estimated from Table VI.A.9.

This change reflects two things. First, in the pre-reform period, necessity goods such as housing, education and health services were provided by the cooperatives and subsidized by the State. In contrast, the post-reform period witnessed the rising share of consumption on education and health as the cooperatives were dismantled, and tuition fees and user charges were introduced.

Second, in the pre-reform period, consumption of other non-necessity goods was limited under the strict State control over consumption and shortage of non-agricultural consumption goods. Hence, any growth of consumption of agricultural households fell into food expenditure. In contrast in the post-reform period, the consumption boom in agriculture was mainly explained by the growth of expenditure on non-necessity goods such as home facilities, traveling and communication.

As a result, the above observations bring about two implications. First, high agricultural marketed surplus after the economic reform was not enhanced by an increase in resource inflows to agriculture as investment goods accounted for a very small share in total commodity inflows to agriculture. Second, related to the first point, a sharp increase in resource inflows after the economic reform came mainly from increase in consumption of agricultural goods and intermediate inputs.

In short, the investigation on commodity side of ISRFs gives rise to three conclusions. First, changes in agricultural marketed surplus between pre- and post-reform periods did not depend on agricultural labor productivity. Instead, the sharp acceleration in the surplus after the reform primarily resulted from price and trade liberalization implemented in 1987-89. This conclusion has three implications. First of all, price and trade liberalization policies had decisive impacts on the success of industrial growth after 1989 since agricultural marketed surplus was always the main constraint on industrial growth. Secondly, attempt of the State in the pre-reform period to extract marketed surplus from agriculture always failed as long as the dual price system existed. Lastly, the 1989 reform had positive impact on growth of agricultural output and marketed surplus. Yet, further growth of agricultural output and marketed surplus was impeded by the limitation of agricultural investment, particularly from the private sector, and demand constraints.

Second, given the State procurement system in the pre-reform period, extraction of agricultural surplus was limited by agricultural labor pro-

ductivity. This means that the amount of marketed surplus from agriculture depended mainly on the generation of that surplus. The State had made attempts to release supply constraints on the generation of agricultural marketed surplus by injecting a considerable amount of investment into agriculture. Unfortunately, State investment was used very inefficiently in State farms and agricultural cooperatives. As a result, the marketed surplus provided by agriculture could not compensate for the inflows of capital, intermediate and consumption goods into the sector. Hence, the shortage of agricultural marketed surplus, particularly food, imposed serious constraints on capital accumulation and expansion of non-agricultural sector in the pre-reform period.

Third, the availability of agricultural marketed surplus helped the Lewisian type of non-agricultural expansion in the post-reform period. Yet, net resource inflows to agriculture became bigger in the post-reform period due to a consumption boom within agricultural sector. The limited share of investment goods in total commodity inflows to agriculture put threats on further growth of agricultural output. Further, it would impede capital accumulation and expansion of non-agricultural sector.

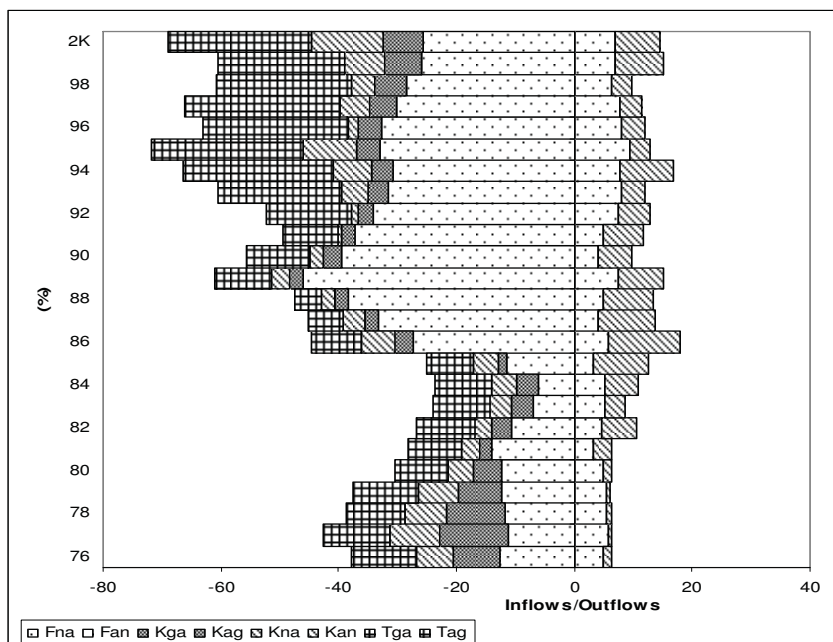
7.3. Financial Side of ISRFs

To recapitulate from the last section, between the pre- and post-reform periods changes in agricultural marketed surplus did not depend much on the levels of agricultural labor productivity and the terms of trade. Agricultural growth was not strongly affected by the magnitude of resource inflows to agriculture as most of the inflows existed in the forms of consumption goods, and there was no clear relation between investment and agricultural growth. This implies that purchases of non-agricultural goods were not mainly financed by the sale of agricultural goods and not dependent on productivity of the sector. Instead, they were financed by other sources of income from non-agriculture.

Looking at Table VII.9 and Figure VII.6, there was a big gap between value-added, income and disposable income of the agricultural sector. The gap between value-added and income was explained by the net factor payment inflows to agriculture, as shown in row I of Table VII.9. Row IV of the table shows the difference between agricultural disposable

income and value-added, which takes into account the net financial inflows through both factor payment and current accounts.

Figure VII.6.
Channels of Financial Flows, 1976-2000
 (percent of agricultural GDP, current prices)



Source: See source of Table VI.A.18

Table VII.9 helps to make clearly two points suggested earlier. First, net inflows through factor payment and current accounts accounted for most of net financial inflows to agriculture, in which net current transfer played a more important role in the pre-reform period and net factor payment inflows dominated in the post-reform period. Second, growth of net financial inflows after the 1989 reform was explained by the overshooting of net inflows through factor payment and current accounts, in which the role of net factor payment inflows was more important.

Table VII.9.
Channels of Financial Flows, 1976-2000

(percent of agricultural GDP, annual average, current prices)

Accounts	76-80	81-84	85-88	76-88	89-92	93-96	97-2K	89-2K
I. Factor Payment	-7	-5	-23	-11	-33	-24	-21	-26
$F_{ga} + F_{na}$	5	5	5	5	6	8	7	7
F_{an}	12	9	28	16	39	32	28	33
II. Capital Transfer	-14	-2	4	-5	2	-4	-7	-3
<i>II.1. Government</i>	-8	-3	-2	-5	-3	-4	-6	-4
K_{ga}	0	0	0	0	0	0	0	0
K_{ag}	8	3	2	5	3	4	6	4
<i>II.2. Private</i>	-6	1	6	0	5	0	-1	1
K_{na}	1	5	10	5	6	5	6	6
K_{an}	7	4	4	5	2	5	7	5
III. Current Transfer	-11	-9	-7	-9	-11	-24	-24	-20
T_{ga}	0	0	0	0	0	0	0	0
T_{ag}	11	9	7	9	11	24	24	20
IV. $(DY_a - F_a)$ = I + III	-18	-14	-30	-18	-44	-48	-45	-46
V. $R = I + II + III$	-31	-17	-26	-25	-42	-52	-52	-49

Source: Estimated from Tables VI.2 and VI.A.18.

Earlier results from section II suggest that the majority of commodity inflows existed in the form of consumption goods, and the share of consumption goods was relatively higher in the post-reform period. In the pre-reform period, agricultural households favored consumption of agricultural goods, particularly food, relatively to what they did in the post-reform period. Combining with the above conclusions on the financial side of ISRFs, one may think of six possibilities that need to be investigated further:

1. Agricultural disposable income was not strictly controlled in both the pre- and post-reform periods

2. Most of agricultural disposable income was used for consumption
3. In the pre-reform period, consumption of agricultural goods was enhanced by the availability of agricultural disposable income that led to low rates of agricultural marketed surplus
4. In the post-reform period, the consumption boom of non-agricultural goods was explained by the growth of net factor payment inflows
5. As a result, agricultural saving rate was low, which hindered agricultural investment in both periods
6. That is why majority of agricultural investment was financed by the State and credit from banking system, leading to net financial inflows in the capital account

The high disposable income of agricultural institutions was due to either low financial outflows or high financial inflows through factor payment and current accounts. From Table VII.9, one may see that extraction of agricultural resources through tax, contribution, and interest payment to the banking system was very low at 5 and 7 percent of agricultural GDP in the pre- and post-reform periods, respectively. As a result, the sector could retain 95 and 93 percent of GDP for its spending in the two periods.

Table VII.10.
Composition of Factor Payment Flows, 1976-2000
(percent of total)

Year	Outflows				Inflows		
	<i>Total</i>	<i>F_{na}</i>	<i>F_{ga}</i>	<i>NIT_{ga}</i>	<i>Total</i>	<i>Non-Farm</i>	<i>In. Payment</i>
76-80	100	37	8	55	100	91	9
81-84	100	24	13	63	100	75	25
85-88	100	28	32	40	100	64	36
76-88	100	30	17	53	100	78	22
89-92	100	12	0	88	100	90	10
93-96	100	36	0	64	100	96	4
97-2K	100	45	0	55	100	97	3
89-2K	100	31	0	69	100	94	6

Source: Calculated from Table VI.21.

Looking at Table VII.10, the majority of factor payment outflows came from agricultural taxes and this share of contribution increased from the pre- to post-reform periods. Transfer of State farms existed

only in the pre-reform period at 17 percent. Share of interest payment in factor payment outflows did not change a great deal between the two periods and stayed at around 30 percent. It is agreed that State farms could not make significant contribution to both State budget and total factor payment outflows, as the sector was inefficient and accounted for a very small share in agricultural output. Meanwhile, the relatively low value of factor payment outflows means that the agricultural sector was not taxed heavily, hence explaining why agricultural tax contributed very little to State budget in both the pre- and post-reform periods.

Table VII.9 shows that factor payment inflows were much higher than factor outflows and such inflows explained mostly changes in net factor inflows to agriculture between the pre- and post-reform periods. Looking at the composition of factor payment inflows in Table VII.10, earnings from non-farm activities by agricultural households dominated factor payment inflows to agriculture. Growth of net factor payment inflows in the post-reform period was associated with the increase in the share of non-farm income in factor payment inflows, implying that growth of non-farm income was the main reason for the acceleration of net factor inflows and total income of agricultural sector in the post-reform period.

State current expenditure in agriculture was the only channel for intersectoral financial transfer through the current account. This expenditure was the second largest contribution to net resource inflows in agriculture, and as share of agricultural GDP it increased sharply from the pre- to post-reform periods (Table VII.9). Looking at Table VII.11, spending on social services accounted for most of State current expenditure in agriculture, and this spending was more important in the post-reform period relative to the pre-reform period. It means that most of growth in State current expenditure after the 1989 reform came from spending on social services.

Table VII.11.
Composition of State Current Expenditure in Agriculture, 1976-2000
 (percent of total)

Year	Total	Administrative and Economic Services	Social Services
76-80	100	12	88
81-84	100	12	88
85-88	100	14	86
76-88	100	12	88
89-92	100	8	92
93-96	100	7	93
97-2K	100	4	96
89-2K	100	6	94

Source: Calculated from Table VI.36.

As a result, three major variables were responsible for the high value of agricultural disposable income, i.e., low agricultural tax, high non-farm income, and high spending on social services financed by the State. The growth of agricultural disposable income in the post-reform period was mostly due to the increase in both non-farm income and State spending on social services for the agricultural sector, while agricultural taxes were still kept at low level. Such results set up the background for the discussions on the impacts of taxation, current State transfers and non-farm income on agricultural disposable income, hence the allocation of agricultural disposable income between consumption and saving.

7.3.1. Taxation

It is often argued that in the pre-reform period, agriculture was squeezed to finance State expenditure, relatively to industrial SOEs. Vo, N.T. (1990: 136), for instance, claimed that 'agricultural tax... usually amounted to 12-14 percent of the actual crop... which was twice as high as the industrial-commerce tax rate'. Meanwhile, the hitherto investigation of the present study shows that agricultural taxes contributed insignificantly to State budget and agriculture was not taxed as much as expected. It means that agricultural tax was not significant for capital accumulation, and most of State domestic revenue was contributed by industrial SOEs. This point can be explained by three reasons.

First, what was meant by 'agricultural tax' may also have included fees and other contributions to agricultural cooperatives and administrative

system at village and district levels. Second, agricultural taxation was not considered to be important for State revenue as it was just used to equalize the income distribution among cooperatives. About half of taxes were retained to, or retained by, the agricultural cooperatives as their accumulation fund (White 1985: 98). This fund, besides State investment, was usually reported to be very important for short-term investment and even a part of long-term investment in agriculture¹³ (Norlun 1984: 102). This means that part of saving surplus from agriculture was used to finance investment in itself.

Third, industrial SOEs had to contribute not only turnover tax, but also direct profit transfer and depreciation funds. In fact, the turnover tax rate alone accounted for more than 15 percent of wholesale price of SOEs' products already¹⁴. At this point, Fforde and de Vylder (1996: 288) argues that the net transfer from SOEs must have been lower than expected as a substantial amount of this transfer was returned to SOEs for capital investment. In addition, credits from the banking system also were used to cover the needs of SOEs' working capital. Nevertheless, earlier discussions on agricultural investment shows that agriculture also received substantial amount of State investment in the pre-reform period, which was enormously higher than its tax contribution to State revenue. Share of agriculture in State investment of around 20 percent in the pre-reform period was much higher than that in the post-reform period. Besides, substantial amounts of agricultural investment were made from accumulation fund and labor mobilization within the cooperatives. Of course, this investment was made on the cooperatives' funds, hence reducing tax contribution from agricultural cooperatives to the State.

In the post-reform period, Watts (1998: 487-9), from a micro study in a village in the North of Vietnam, estimates that tax loading was quite high at around 17 percent of agricultural output. It is argued that this high tax rate was reasonable as the fiscal reforms, by reducing central expenditures and subsidies, undercut the revenue base for local governments, therefore raising the need for them to extract surpluses from the peasantry. Source from Luong, V.H (also quoted by Watts 1998: 486), from his study in Vinh Phu and Ha Bac provinces in 1989, even shows that around 46 and 49 percent of rice crop on contracted land was appropriated. Nevertheless, my estimate shows that there was no significant change in tax contribution of agriculture and tax rate imposed on

agriculture from the pre- to post-reform period¹⁵. Tax contribution from agriculture accounted for less than 5 percent of State domestic revenue in the post-reform period.

The difference can be explained by three reasons. First, as suggested by Watts (1998: 488) himself, the high tax loading, calculated by Luong, V.H. (1992), was due to the inclusion of both contribution to local administration and production costs¹⁶. In Watts's estimate, tax contribution from agriculture includes land tax, irrigation/protection/infrastructure taxes and other communal taxes levied by the district for services provided, a social fund levied by the village, and a health tax also levied by the village¹⁷. As land tax just accounts for 4 percent in total tax contribution estimated by Watts, it is believed that what is really meant by tax contribution from agriculture to the State was around only 1 percent of crop output¹⁸. The other contribution should be accounted for as payment of agricultural institutions for intermediate inputs and social services provided by the district and village administration.

Second, local government at district and village levels controlled most of agricultural taxes as transfers from the State at a higher level was more limited in the post-reform period. Therefore, such taxes represented the financial flows within agricultural sector, and could not be considered financial outflows from agriculture (Akram-Lodhi 2001a: 38).

Third, taxation of agriculture was regressive (Nguyen, H.B. et al. 2001: 221-4). This reconciles with Watts's (1998: 488) proposition that the burden of taxes fall dis-proportionally on poorer households who often did farm activities only. Richer households, who often participated into husbandry and no-farm activities, were taxed less, as most of tax burden was imposed on land. Therefore, even the local governments at district and village levels lost very substantial tax revenues not only from the most dynamic sectors in the rural economy (husbandry and industry) but also from those prosperous households.

Consequently, it can be agreed with Mellor's (1993: 37) and Riedle's (1993: 407) conclusion that agriculture was taxed very lightly in the post-reform period. Albeit, if the tax rate had been estimated to be higher in the post-reform period, this increasing rate would not have contributed to the growth of the agricultural marketed surplus because taxes were paid in cash this time.

In short, agricultural taxes contributed insignificantly to State budget in both the pre- and post-reform periods. Though agricultural households may have been drained by the imposition of both taxes and other fees, the actual tax contribution from agriculture to the central State revenue was very small. Most of the contribution of agricultural households was often kept in the retained funds of agricultural cooperatives in the pre-reform period or by local government in the post-reform period. As a result, the agricultural sector as a whole was left with a potential amount of income that was likely to be spent on social services in the agricultural sector. This is one reason to explain the large share of purchased non-agricultural consumption goods in total commodity inflows to agriculture, particularly in the post-reform period when contribution of agricultural households was paid in cash and fees and user charges were imposed on the provision of social services after de-collectivization. It is worth noting that agricultural tax was paid in kind in the pre-reform period, meaning that the low tax rate imposed on agriculture limited agricultural marketed surplus.

7.3.2. State current transfer

In the pre-reform period, agricultural disposable income was mainly divided between the cooperatives and peasant households. It may have come from distributed value of agricultural production after delivering to the State, current transfer from the State and non-farm earnings.

The cooperative could use its distributed income from members' contribution (its retained funds) and current transfer from the State. This income was used to finance the consumption of necessity goods, such as education and health services. This helped the development of human resources in the rural area, and partly explained why Vietnam had quite a high literacy rate, relative to other countries at the same level of income.

In fact, cooperatives funds were more important than State current transfer in terms of providing those social services to agriculture, as the cooperatives financed both wages of teachers and health workers as well as the construction of schools, kinder gardens and health care stations in rural areas. These retained funds mainly existed in terms of physical agricultural goods, therefore the significance of these funds hampered the contribution of agricultural marketed surplus from the cooperatives.

State current transfers were often used to provide equipment for such units and pay for invalid war veterans and revolution-merit families. These current transfers were mainly used for consumption purposes, therefore in part contributing to a large share of consumption goods in commodity inflows to agriculture.

In the post-reform period, agricultural households controlled most of agricultural disposable income. State current transfers were used to pay for the State administrative staff in the agricultural sector and for the supplies of social services to the sector. Compared to the pre-reform period, there were four important changes in the volume and composition of State current transfer to agriculture. First, as a share of agricultural GDP, State current transfers relatively increased since they had to compensate for the removal of social service provisions after de-collectivization. Second, the share of payment for State administrative staffs over total State current transfers to agriculture decreased relatively, as a result of the attempt to rationalize the State administrative system. Third, more State current transfers were used to provide social services to agriculture. Fourth, the agricultural households had to pay more for education and health care services after de-collectivization, even though the State had to spend a considerable amount of money on such services. A part of financial resources for this spending came from the sale of agricultural goods. Consequently, it partially explains why the sales ratio was relatively higher and inflows of consumption goods to agriculture increased in the post-reform period.

In short, current State transfers were mainly spent on the consumption of social services in agricultural in both the pre- and post-reform periods. Yet, the changing allocation of State revenue and expenditure between the central and local governments had important implication for ISRFs. In the pre-reform period, the retained funds of agricultural cooperatives were more important than State current transfer in financing the consumption of social services in the agricultural sector. Yet, the high level of these funds hampered the amount of agricultural marketed surplus transferred to the State procurement system.

In the post-reform period, the State had to replace the role of agricultural cooperatives in providing social services, after de-collectivization. Furthermore, the introduction of fees and user charges on education and health care services may have been one motivation for agricultural

households to earn more cash from the expansion of agricultural marketed surplus. This helps to explain why both agricultural marketed surplus and purchases of non-agricultural consumption goods increased in the post-reform period.

7.3.3. Non-farm income

In the pre-reform period, non-farm income was limited, as the development of the private sector was restricted in rural areas. In addition, rural industries were not developed as well even under the cooperatives' management. It is noteworthy that figures on factor payment inflows to agriculture in the post-reform period may include also current transfers from both the State and non-agricultural institutions. As a result, it can be concluded that non-farm income was relatively modest in the pre-reform period.

This is made clearer by three evidences. First, though some rural industrial cooperatives existed, they operated in the same manner as the SOEs did, that is, integrating into the planned system, producing to State order and trading at fixed prices. There was not a close organizational linkage between rural industrial cooperatives and agricultural cooperatives, such as in the case of China. Therefore, it is not expected that agricultural households received much income for those rural industrial cooperatives. In addition, income from the service sector such as retail trade was insignificant as the sector was strictly restricted under the centrally planned system.

Second, the agricultural cooperative had little autonomy from the State to participate into extra-plan non-farm activities, though some freedom had been given to local initiatives since Resolution 6 in 1979. In fact, only cooperative members obtained more autonomy from the cooperative management in the agricultural reform in the late 1970s and the early 1980s. Nevertheless, they were prevented from doing business in non-farm activities; hence their effort was concentrated in farming on 5 percent land.

Third, there was no investible resource to promote the development of non-agricultural activities in rural areas, even though some efforts had been made (O'Connor 1998: 22). State investment in rural areas was concentrated in pushing up agricultural production. Retained funds of

agricultural cooperatives were limited due to agricultural stagnation. These funds were only sufficient to cover expenditure for consumption and investment purposes within agricultural sector.

Table VII.12.

Composition of Agricultural Households Income in the Pre-Reform Period
(percent of total)

Year	Total	Cooperative	Sub-Economy	Others
	1	2	3	4
1976	100.0	34.6	54.5	10.9
1977	100.0	29.1	61.1	9.7
1978	100.0	29.1	60.6	10.3
1979	100.0	28.8	60.7	10.5
1980	100.0	24.6	64.9	10.5
1981	100.0	24.1	63.8	12.1
1982	100.0	21.7	69.6	8.6
1983	100.0	26.4	68.9	4.7
1984	100.0	17.5	79.2	3.3
1986	100.0	28.9	59.3	11.8

Source: Table VI.A.7.

Yet, it is suggested that the main source of income for agricultural households in the pre-reform period came from the 5 percent land. Looking at Table VII.12, income from sub-economy, mainly generated from 5 percent land, accounted for more than 60 percent of agricultural household income. It is noteworthy that this source of income had increased sharply, compared to that from the cooperative, since 1981 when cooperative members were allowed to receive more benefits from household production. Income from sub-economy accounted for 70 to 80 percent of total agricultural household income in the 1981-84 period, when production under cooperative management also reached its highest level in the pre-reform period.

The dominant share of income from 5 percent land also helped to explain the relatively low agricultural marketed surplus and low rate of investment in agriculture. First, as suggested earlier, agricultural households were not encouraged to sell their produce to non-agricultural sector under the dual price system and internal trade restriction.

Second, part of output from 5 percent land was exchanged mainly for non-agricultural consumption goods and intermediate inputs since private investment was highly restricted.

Third, agricultural households preferred to receive in-kind payment (in terms of rice) rather than in-cash payments from the cooperatives as prices of agricultural goods were very high in the free markets, compared to those set in the official markets.

Consequently, the dominant share of agricultural households in total agricultural disposable income was the main driving force for low agricultural marketed surplus, high share of non-agricultural consumption goods, and the low share of investment goods in total commodity inflows to agriculture in the pre-reform period.

Table VII.13.
Composition of Agricultural Households Income in the Post-Reform Period
(percent of total)

Year	Total	Farm	Wages	Non-Farm	Others
	1	2	3	4	5
1989	100.0	62.0		24.7	13.3
1994	100.0	66.6	12.5	8.5	12.4
1995	100.0	66.0	12.6	10.1	11.2
1996	100.0	66.4	12.9	10.1	10.7
1999	100.0	71.5	11.4	7.7	9.4

Source: Table VI.A.8.

In the post-reform period, income from non-farm activities increased considerably as the result of the development of private non-agricultural activities and free labor migration from rural to urban areas. Looking at Table VII.13, income from non-farm activities and other current transfers accounted for more than 30 percent of total agricultural household income in the post-reform period. This proportion was considerably high, given that income from farm activities increased quite sharply along with high agricultural growth in the post-reform period. In addition, agricultural households received most of distributed income from agricultural production after deducting agricultural taxes and other contributions to local governments. The growth of purchases of non-agricultural goods was partly financed by the increasing income from farm activities. This also explains why the sales ratio of the agricultural sector increased

in the post-reform period¹⁹. Yet, empirical evidence below suggests that the growth of income from both farm and non-farm activities was used to finance the accelerating consumption within agricultural sector.

The 'other' income may have come from remittances, current transfers from the State and other private institutions. The current transfer from State, as suggested earlier, was mainly used for consumption of non-agricultural goods. Current transfers from other private institutions, particularly from non-agricultural sector, were very limited compared to the amount of remittances sent by temporary rural-urban migrants.

Cox's study (2002) on the private inter-household transfer in the post-reform period shows some interesting results. First, most of private inter-household transfer did not cross urban-rural boundaries. From the VLSS conducted both in 1992/1993 and 1997/1998, Cox finds out that over 70 percent of the transfer did not cross the urban-rural boundaries, both in terms of the number of transfer events and in terms of money value of transfers (Cox, 2002: 33-5). Second, transfer from Vietnamese overseas accounted for around 50-60 percent of total money value of private transfer (ibid: 33-5). Third, the majority of private transfers (around 40 percent in both the 2 surveys) came from the young to old, and changes in private transfer were strongly related to changes in health expenditure (ibid: 10, 28). Fourth, related to the last point, more than 70 percent of private transfer was used for consumption purposes, even though in the items of investment goods Cox includes also 'working capital' (such as intermediate inputs), 'build or buy house', 'schooling' and 'buy consumer durables' (ibid.: 17). This means that an overwhelming share of private current transfers was used for consumption purposes, even though it was underestimated. Finally, intra-household transfer far exceeded inter-household transfer, meaning that the transfer of remittances played dominant role in the 'other' income of agricultural households (ibid.: 18).

Earlier, it is suggested that rural-urban migration had grown fast in the post-reform period since the resident registration system was more relaxed and food rationing was abolished. Studies on migration were quite rare in Vietnam, of which the study of Do, V.H., and Trinh, K.T. (1999) shows quite comprehensive results. It is shown that migration to the urban areas mainly took the form of rural-urban migration, in which concentration was put on big and highly growing cities like Hanoi, Ho

Chi Minh City and Vungtau. In Hanoi, permanent migration accounted for 40 percent of population growth, while that figure was more dramatic at 65 percent in the case of Ho Chi Minh City. Further more, temporary migration was nearly 3 times that of permanent migration in both Hanoi and Ho Chi Minh City, and 98 percent of temporary migration came from rural areas in the case of Hanoi and the figure for Ho Chi Minh City was more than 60 percent (*ibid.*: 9-10, 44, 58).

Second, most of migration was young at the age of 20-39, in which temporary migrants were younger and more male-dominated²⁰. This finding reconciles with the earlier conclusion that young-to-old transfer played dominant role in inter-household and intra-household private transfer of income.

Third, it is found out that the main motivation for rural-urban migration, particularly temporary migration, was the lack of employment and income in rural areas²¹. It is interesting to note that temporary rural-urban migrants did not belong to the poorest groups in rural areas and the shortage of cultivated land was not the major motives for migration (*ibid.*: 46-7, 60). In addition, temporary migrants had a higher saving rate than permanent migrants, and the main purpose for saving was to transfer remittances to their home families²².

Therefore, it can be inferred that lack of farm and non-farm employment in rural areas was the main motivation for temporary rural-urban migration²³, and the additional income from remittances was not expected to become investment. Instead, remittances from temporary migrants were mainly used to improve consumption for their home families since incentives to make investment were very low in rural areas.

The opening of rural non-farm activities followed the same manner as that of rural-urban migration. The main purpose was still to earn additional income for consumption. It is suggested that non-farm activities were only important in the transition period when agriculture was declining in importance but before the formal industrial and service sector was large enough (Vijverberg and Haughton 2001: 23). Non-farm activities were mostly based on family labor and used labor-intensive technologies, showing the lack of farm employment in rural areas²⁴.

Ronnas (1992: 34, 129) shows that rural enterprises were dominated by non-farm activities done within the households, in which household members make up the entire workforce. In household enterprises, only

8.1 percent of employment came from wage workers and the figure for rural private enterprises was 54.6 percent, much lower to that of urban private enterprises. In addition, the expansion of rural non-farm activities was constrained by capital shortage and lack of demand. Over 80 percent of the start-up capital for rural non-farm enterprises consisted of own-capital. In the 1991 survey, 44 percent of households mentioned lack of capital as a severe difficulty faced at the time of establishment. In the 1996 survey, this figure was even increased. As a result, rural non-farm enterprises had a very low capital base and a low level of technologies, making it difficult for them to compete with goods either produced by urban enterprises or imported from abroad. Rural non-farm enterprises primarily served the local market. Since demand size of agricultural sector declined steadily in the post-reform period, it put obstacles to the expansion of rural non-farm enterprises (Ronnas, 1992: 100-1).

Ronnas (1998) also finds that by 1996 between 29 and 37 percent of rural non-farm enterprises interviewed in 1991 had gone out of business and the average income of rural non-farm enterprises declined by 18 percent during 1991-96. Van de Walle and Cratty (2003: 17-8), using the panel data of VLSS 1992/1993 and 1997/1998, suggest that although households participating in non-farm activities had higher incomes than the farm-only households, the expansion of rural non-farm enterprises could not be sustained as long as rural land and labor markets were imperfect. Market imperfection made it too risky to push up investment in rural non-farm activities or to sell land.

In short, non-farm income of agricultural households was quite limited in the pre-reform period as the development of the private sector was restricted in rural areas. Meanwhile, the development of non-farm rural cooperatives was not encouraged. Instead, major sources of agricultural household income came from 5 percent land. The domination of this source of income helps to explain the relatively high share of self-consumption of agricultural goods within the agricultural sector, hence low level of agricultural marketed surplus under the dual price system. In the post-reform period, non-farm income proliferated as rural-urban migration was freed and private investment in non-farm activities was allowed in rural areas. However, this source of new income was mainly used for the spending on non-agricultural consumption goods, and incentives to make investment in rural non-farm activities were low.

7.3.4. Agricultural saving

The above investigation shows that most of agricultural disposable income was used for consumption purposes and income from factor payment and current inflows was mainly to finance the purchases of non-agricultural consumption goods by agricultural institutions. This means that the saving rate of the agricultural sector must have been very low.

Table VII.14 makes an attempt to estimate agricultural saving as a share of its disposable income. It is known that the gap between saving and investment of the sector is equal to net capital outflows from the sector. Therefore, agricultural saving equals the sum of agricultural investment and net capital outflows from the sector. The estimated saving of agricultural sector is shown in column 3 of Table VII.14, and the figures are lower than those in Column 4, that is, saving of agricultural households from GSO's surveys, for every year. The difference between column 3 and 4, as shown in column 5, is quite big. On average the gap was 10.8 percent in the pre-reform period and 12.8 percent in the post-reform period.

Table VII.14.
Saving of Agricultural Sector and Agricultural Households, 1976-2000
(annual average, percent of agricultural disposable income)

Year	Total Investment in Agriculture	Net Capital Outflows	Agricultural Saving	Agricultural Households Saving	Discrepancy
	1	2	3 = 1+2	4	5 = 4-3
76-80	8.5	-11.9	-3.4	2.7	6.2
81-84	3.4	-1.9	1.5	12.8	11.3
85-88	2.2	2.7	4.9	20.9	15.9
76-88	5.0	-4.3	0.7	11.4	10.8
89-92	3.4	1.4	4.8	7.9	3.1
93-96	6.8	-2.9	3.9	15.9	11.9
97-2K	5.5	-4.9	0.7	24.2	23.6
89-2K	5.3	-2.1	3.1	16.0	12.8

Source: Table VII.A.7.

Though there are some statistical discrepancies, the gap between saving of agricultural sector as a whole and saving of agricultural households in both the pre- and post-reform periods may reflect some importance

implication on consumption and saving behaviors of the agricultural institutions.

In the pre-reform period, one reason for that gap was the negative saving of agricultural cooperatives as they were the main institutions to receive credit from the State bank. In addition, potential saving of agricultural households could not be actualized to become investment as private investment was restricted. Anecdotal evidence shows that a majority of agricultural household saving existed in the forms of gold or goods speculation under high inflation. Particularly, agricultural households may have preferred speculation of agricultural goods since the exchange with non-agricultural sector was restricted.

In the post-reform period, the gap between columns 3 and 4 mainly reflects that saving of agricultural households was not likely to become investment. Data from VLSS 1992/1993 and 1997/1998 (GSO 2000f, Table 8.1.4: 326, SPC/GSO 1994, Table 8.1.4: 235) shows that 50 to 70 percent of saving of agricultural households existed in the forms of foreign currencies, gold, jewelry, housing, durables and other non-productive goods.

So, why were the actual saving and investment from non-State sector low in agriculture? In the pre-reform period, it is easy to see that the reason was due to low saving in the cooperative sector that took the main responsibility for non-State investment in agriculture. Meanwhile, the potential saving of agricultural households could not be materialized due to restrictions on private investment and high inflation.

In the post-reform period, the low incentives to make investment in both farm and non-farm activities in rural areas partly explained low rate of actual saving of agricultural households. The above discussion on the development of rural non-farm activities has shown that the sector was used mainly to cope with underemployment in agriculture, with low incentives to long-term investment. The incentives to make investment in agriculture need further discussion on the process of land accumulation and class differentiation in agriculture.

It was expected that the 1989 reform and agricultural de-collectivization would push up agricultural growth and commercialization of the sector. Along with this process, land and capital accumulation, as well as rural differentiation may have occurred in rural areas. If this was the case, saving and investment must have been accelerated sub-

stantially in the post-reform period, particularly among the upper-income classes in rural areas. Watts (1998), writing about the Red River Delta in 1994, suggests that land distribution was very equal, hence any trend towards rural class differentiation among peasant households would occur on the basis of non-farm and non-rice activities. Agricultural households, who had relatively larger areas of lands, were those who got access to political authorities and possibly could become the local *nomenklatura* in the Vietnamese case.

On the other hand, Arkam-Lodhi (2001a) focusing on the Mekong River Delta, argues that de-collectivization had set the stage for changes in the agrarian structure in Vietnam. He tries to demonstrate that there had been a process of class differentiation into "rich peasants" and "small peasants" after de-collectivization. The "rich peasants" are defined as those who have relatively larger landholdings, less debt, use more capital-intensive methods of production on their farms, and hire out modern farm equipment and machinery. In contrast, the "small peasants" have relatively smaller landholdings, more debt, use more labor-intensive methods of production, and hire in modern farm equipment and machinery (ibid: 31-2).

Akram-Lodhi's argument is based on three observations of his own. First, the wealthier group had larger landholdings than the poorer groups did, and perennial cropland accounted for a higher share of total landholdings in the wealthier groups. In addition, the VLSS in 1992/1993 and 1997/1998 shows that between 1993 and 1998, the share of perennial cropland increased by more than two times in the wealthier groups. As non-rice crops were the most dynamic sector of agricultural production, increasing share of output accounted for by higher-value crop among wealthier households promoted capital accumulation in rural areas.

Second, Akram-Lodhi raises the proposition that private investment played dominant role in agricultural production in the post-reform period, since State investment was decreasing while foreign investment in the sector was insignificant. The growth of private investment was enhanced by the acceleration of credit from formal rural financial institutions. Yet, it is found out that debt repayment to formal financial institutions was the most often reported reason for selling land. Poorer households tended to acquire consumption-derived debt, while wealthier

households preferred to acquire higher volume of credit, but lesser volume of debt, and used the credit for productive investment in farm equipment and machinery. As a result, the liquidation of land was more likely to take place among the poorer households, hence opening up land for purchase for the wealthier households.

Third, with higher resources for investment, the wealthier households also took the advantages in agricultural production. It is found out that smaller and poorer farmers were not more productive than the larger and richer ones. In fact, technical coefficients of agricultural production were likely to favor wealthier households with larger landholdings and more investment in capital-intensive methods of production. Therefore, the process of class differentiation was accelerated further by such technical factors.

Yet, empirical evidence shows that such process of class differentiation, land, and capital accumulation was not so obvious. It just existed in the potential form of tendency. In fact, capital and land accumulation in rural Vietnam was still very limited. Using VLSS 1992/1993 and 1997/1998, Benjamin and Brandt (2002: 13) shows that between 1993 and 1998 rural income inequality did not increase, and rural income-based Gini coefficients stayed around 0.41 in both years. Regional income inequality increased slightly as rural income in the South accelerated faster than that in the North. Meanwhile, inequality decreased significantly in the rural South and increased slightly in the North. It is worth noting that the South was the more dynamic region of agricultural commercialization, where most of non-rice production was concentrated in. In fact, the decline in inequality in the south mostly reflected the relative increasing share of perennial crops in total output.

Second, growth of perennial crop output was mainly due to an increase in the prices of cash crop relative to rice. In fact, composition of rice and non-rice in cultivated areas did not change significantly. As inequality decreased in the South, it implies that growth of non-rice production was equally distributed among agricultural households, disregarding whether they are large and rich peasants or small and poor ones.

Third, related to the last point, it is suggested that landholdings were equally distributed, and many studies show that the fragmentation of landholdings was the most important obstacle to agricultural growth and commercialization as it impeded incentives to make investment in agri-

culture. Ravallion and van de Walle (2001 and 2003) shows that the breaking up of agricultural cooperatives still left equal distribution of landholdings and there was no sign of bias that favored rich land or that land allocation was abused by local officials.

Finally, more than 60 percent of rural credit was still used for consumption purposes, and self-financed investment played a dominant role in household investment in agriculture. Combined with the fragmentation of landholdings, this impeded investment in agriculture.

As a result, in the post-reform period there was no clear evidence that two sources of land and capital accumulation within agricultural sector, that is, through role of local cadres and wealthier peasants, were utilized in practice. The major obstacles to this process were land fragmentation and low incentives to make investment in agriculture.

In short, the above investigation shows that the actual rates of saving and investment undertaken by agricultural institutions were very low in both the pre-reform and post-reform periods. In the pre-reform period, internal capital accumulation within agriculture was limited due to stagnation of agricultural production, particularly for agricultural cooperatives, which were the institutions with main responsible for agricultural investment. Meanwhile, potential saving of agricultural households was not utilized sufficiently because private investment was discouraged under the centrally planned system. A relatively large amount of disposable income from 5 percent land was used for self-consumption by agricultural households. The majority of agricultural investment was financed by the State. As a result, this explains both the low rate of saving and self-investment, as well as the low sale ratio of agricultural sector in the pre-reform period.

In the post-reform period, the agricultural households were freed to make decisions on consumption, saving and investment from their disposable income. They received the majority of income distributed from agricultural production, plus non-farm income after the 1989 reform. This created a good basis for capital accumulation in the agricultural sector. Nevertheless, it was difficult to actualize the potential saving of agricultural households because incentives to make investment were low in rural areas. Development of non-farm activities was mainly served to withdraw agricultural surplus labor. Remittances from temporary rural-urban migrants were mainly used to improve consumption of home

families. Furthermore, incentives to make investment in agriculture were impeded as long as landholdings were fragmented and levels of agricultural commercialization were low. The imperfection of rural land and labor markets in large part impeded the process of land accumulation and commercialization in agriculture²⁵. As a result, the growth of agricultural disposable income was mainly used for the purchases of non-agricultural consumption goods in the post-reform period. In addition, the majority of agricultural investment was still financed by the State.

7.3.5. Transfer of saving surplus

Earlier, it is suggested that the gap between potential and actual saving of agricultural institutions was quite large in both the pre-reform and post-reform periods. It was partially due to the preference of agricultural households to keep their saving in non-productive goods such as gold, housing and durables. Furthermore, it reflects the fact that there were obstacles to transfer saving of agricultural households for capital accumulation in the non-agricultural sector.

Table VII.15.
Composition of Capital Transfer, 1976-2000
(percent of total)

Year	Outflows				Inflows			
	Total	Ag. Deposit	Ag. Cash	Non-Farm Investment	Total	I_{ag}	Credit	FDI
76-80	100	61	39	0	100	56	44	0
81-84	100	60	40	0	100	47	53	0
85-88	100	75	25	0	100	37	63	0
76-88	100	65	35	0	100	47	53	0
89-92	100	46	38	16	100	62	35	3
93-96	100	33	27	41	100	45	47	9
97-2K	100	56	24	20	100	47	49	4
89-2K	100	45	29	26	100	51	43	5

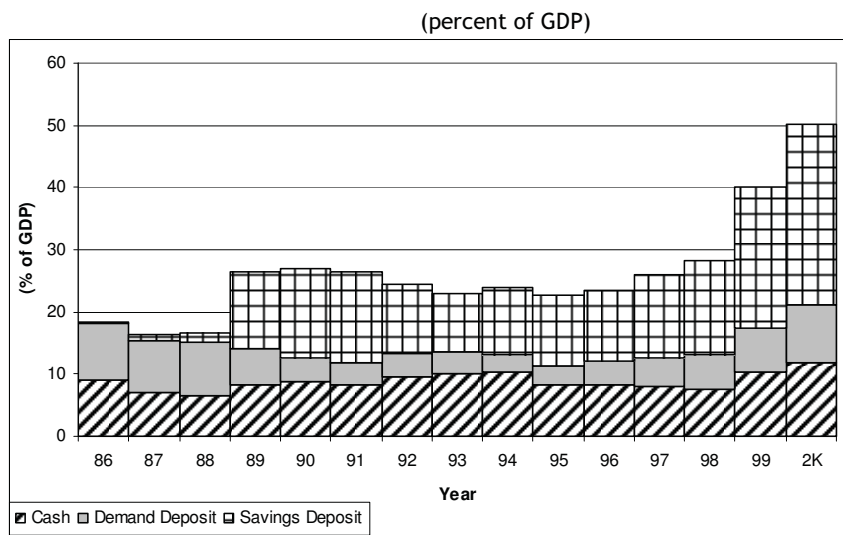
Source: Calculated from Tables VI.28 and VI.34.

Looking at Table VII.15, changes in cash held by agricultural institutions accounted for 30-35 percent of total capital outflows from agriculture. Cash mainly served as the medium of exchange, rather than as part of portfolio investment by agricultural households. It is noteworthy that

the amount of changes in bank deposits and cash held by agricultural institutions was overestimated considerably in the pre-reform period since inflation was high and real interest rates were negative.

In the post-reform period, it should be remembered that the share of capital outflows over agricultural GDP did not change much and just stayed at around 6 percent. In addition, up to 26 percent of capital outflows were utilized for non-farm self-investment in rural areas, and just 45 percent existed in the form of deposits in the banking system. In fact, changes in deposits held by agricultural households were still lower than credit given to agricultural sector, except for 1989-92, in the post-reform period²⁶. This means that agricultural households could not make a significant contribution for non-agricultural sector through financial institutions in the post-reform period.

Figure VII.7.
Financial Deepening, 1986-2000



Source: Table VI.A.5.

In the pre-reform period, there was the consensus that financial depression under the centrally planned system did not encourage households to put their saving in the State banking system. Most of bank deposits came from the required contribution of SOEs and cooperatives.

In the post-reform period, though the financial system was gradually liberalized, the underdevelopment of financial institutions still put a major constraint on capital mobilization for industrialization.

Available data show that the financial deepening ratio, measured as share of M2 over total GDP, was very low. Looking at Figure VII.7, M2/GDP was only 17 percent in the 1986-88, of which half came from cash in circulation. Around 40 percent of M2 was the required demand deposits of SOEs and cooperative, and saving deposit was very small.

The stabilization program in the post-reform period helped to increase the financial deepening ratio dramatically from its previous ratio in 1989. Most of the growth in M2/GDP between the pre- and post-reform periods came from saving deposits. Nevertheless, growth of M2/GDP in the post-reform period took place very slowly. In fact, M2/GDP was slightly decreasing during 1989-96 mostly due to the declining share of saving deposits. Cash and demand deposits still accounted for more than 50 percent of M2. The financial deepening ratio just showed a clear increasing trend in 1997-2000 when saving deposits increased from 13 to 29 percent of GDP. For the entire post-reform period, M2/GDP was quite low at 30 percent, and just half of which came from saving deposits.

Despite the fact that some progress had been made, the financial sector was assessed as underdeveloped. Cash still dominated in M1, which showed the deficiency of the payment system. Up to the mid-1990s there had been few payment instruments for commercial and individual use other than cash (WB 1995b: 23). Saving mobilization into the banking system was quite limited.

It is argued that the main reason for the underdevelopment of financial sector was the monopoly of State-owned commercial banks (SOCBs) in financial sector. By the end of the 1990s, four SOCBs accounted for more than 80 percent of total bank assets (IMF 1999: 27). The State Bank of Vietnam (SBV) still strictly controlled financial and banking services. For instance, the most recent World Bank (2002: 30) report shows that foreign banks are not allowed to mobilize deposits in domestic currency. The SBV controls quite tightly the granting of banking licenses, both for the establishment of new banks as well as the provision of new banking services by established institutions.⁷ In addition, the bias for SOEs in the lending policy increased the exposure of SOCBs to non-

performing loans as SOEs were frequently reported to default payment (Kokko 1998: 3-4; Sepehri 2002: 22-3). As a result, it impeded the ability of the financial system to mobilize saving for its lending.

Yet, readings from other studies seem to suggest a bright picture for domestic capital mobilization through financial institutions. Furthermore, private sector, particularly agricultural households, is expected to share a considerable part in financing industrialization in the post-reform period. Recalling Chapter VI, Fforde and de Vylder (1996: 274) suggest that with the high income growth agricultural households may have contributed significantly to finance investment of SOEs through their deposits on the banking system. Vu, Q.V. *et al.* (2002: 153-153) proposes the idea that private households were the net savers who financed most of investment of non-financial corporation sector. Kokko (1998: 3) argues that most of capital mobilization through the State-owned commercial banks was used to finance industrial SOEs.

Nevertheless, a more detailed investigation on financial mechanism in the post-reform period shows that the above conclusion is untenable, and resources for SOE growth may have been self-financed or come from non-agricultural private sector instead. First, earlier it is suggested that the underdevelopment of financial system made it difficult to mobilize domestic capital through financial institutions.

Second, available data during 1995-99 shows that the non-financial corporation sector, though still depending on banking credit, became gradually more self-reliant on its own saving. The share of household saving to finance non-financial corporations was not as high as expected. Up to 1996, the household sector contributed the biggest share in gross domestic saving but the dominant source to finance capital deficits of non-financial corporation was the foreign sector, reflecting the flowering FDI in this period. For instance, foreign finance accounted for 60 percent of net borrowing of non-financial corporations in 1996. Since 1997, the role of foreign finance was on its downturn and non-financial corporations had to become more reliant on their own resources to finance their investment. Share of net borrowing in investment of non-financial corporations was reduced considerably from 68 percent in 1995 to 57 percent in 1999. Also since 1997, the share of non-financial corporations in gross domestic saving was bigger than that of the household sector. It is worth noting that the declining role of foreign finance along with the

regional crisis since 1997 was replaced by the growth of government contribution to finance capital deficits of non-financial corporations.

Finally, rural financial institutions were even more underdeveloped relative to the already poorly performed financial sector as a whole. Vietnam's Bank for Agriculture and Rural Development (VBA), created in 1990 from the agricultural credit department of SBV, played dominant role in the formal rural financial markets. Besides, People's Credit Funds (PCFs), Vietnam's Bank for the Poor (VBP) and other joint-stocks banks also operated in rural areas. VBA was in the center of the rural financial network as other rural financial institutions were dependent on it for sources of funds (van Donge *et al.* 1999: 43-4, WB 1995b: 69). The main functions of such formal institutions were to lend to rural households. Yet, their saving mobilization was limited. Even half of loanable funds of VBA were financed by the SBV (WB 1995b: 68). Vu, Q.V. (1997, Table 2: 243) estimates that the share of saving deposits at VBA over total saving of rural sector was just two thirds of that of the entire banking system, and saving deposits at VBA accounted for only 15 percent of total deposits of the entire banking system. It is worth noting that not all of deposits at VBA came from the agricultural sector. Therefore, it can be concluded that financial transfers from agriculture for non-agricultural capital formation through the financial markets was very limited, if not impossible, in the post-reform period.

In short, potential saving of agricultural households could not be actualized to transfer for capital formation in non-agricultural sector. In the pre-reform period, financial depression and high inflation rate discouraged agricultural households to put their saving as deposits in the banking system. In the post-reform period, the underdevelopment of financial sector, particularly in rural areas, still hampered households' incentives to deposit their saving in the banking system. Therefore, it can be concluded that non-agricultural investment was mainly financed by its own saving or from foreign resources. In the pre-reform period, the majority of financial resources for industrialization came from CMEA foreign aid. In the post-reform period, such responsibility was shared by capital accumulation of non-agricultural SOEs and private enterprises, and FDI.

7.4. Conclusions

Agricultural marketed surplus increased considerably from the pre- to post-reform periods. However, net resource inflows to agriculture also increased sharply between the two periods due to the faster growth of purchases of non-agricultural goods in the post-reform period. The majority of commodity inflows to agriculture existed in the form of non-agricultural consumption goods. The sharp increase in commodity inflows in the post-reform period was due to the overshooting purchases of non-agricultural goods by agricultural institutions.

Changes in the sales ratio of the agricultural sector between the pre- and post-reform periods were mainly due to the impact of 1987-89 price and trade liberalization. Between the two periods, agricultural marketed surplus did not vary closely with agricultural labor productivity and terms of trade. In addition, the higher volume of commodity inflows to agriculture in the post-reform period was not the reason for higher agricultural marketed surplus, as the growth of agricultural productivity and marketed surplus was primarily affected by changes in incentives offered to agricultural producers. Within the pre-reform period agricultural marketed surplus was positively related to agricultural labor productivity. In contrast, this relation was held for only two sub-periods of 1989-92 and 1993-96 in the post reform period. Since 1996, the sales ratio of the agricultural sector stagnated though agricultural labor productivity still increased. Limited non-agricultural demand was the main reason for such stagnation. The concentration of industrial growth in few urban centers, rather than a widespread distribution of dynamic growth in non-agricultural sector, put demand constraint on the expansion of agricultural marketed surplus.

Quantity of agricultural investment had very limited impact on the growth of agricultural output and marketed surplus. In the pre-reform period, agricultural investment, the majority of which was financed by the State, was utilized very inefficiently. In the post-reform period, agricultural investment became more efficient. Yet, the State still took major responsibility to make investment in agriculture. Agriculture, in fact, was neglected by private investment and FDI in the post-reform period. Further growth of agriculture required the use of more capital-intensive inputs and diversification towards higher-value-per-units crops. The lim-

ited volume of agricultural investment put a serious constraint on the expansion and commercialization of the sector.

State current transfer and non-farm income played the dominant role in financial transfer between agriculture and non-agriculture, of which State current transfer was relatively more important in the pre-reform period and non-farm income amounted to the majority of financial inflows in the post-reform period.

The State could not impose strict control over agricultural disposable income in the pre-reform period. Tax transfer out of the agricultural sector was very limited, and agricultural taxation was just used to equalize the income distribution among cooperatives. Though it was claimed that agricultural households were highly squeezed, most of their contribution was kept in the retained funds of agricultural cooperatives. In addition, the cooperatives also received a significant amount of State current transfers, which was combined with retained funds to spend on rural social services provided under the collective system. Furthermore, as tax was paid in-kind, the low tax rate on agriculture limited the amount of agricultural marketed surplus transferred to the State. Finally, though non-farm income was limited and payment from the cooperatives was low, agricultural households were still disposed to make large income from 5 percent land. This source of income was mainly used for self-consumption within the agricultural sector, as agricultural households were discouraged to participate into the exchange with non-agriculture under the dual price system.

The consumption boom in the post-reform period was largely financed by non-farm income. The open of free rural-urban migration and development of rural non-agricultural activities generated high additional income for agricultural households. This source of income was mainly spent on the purchases of non-agricultural consumption goods, as incentives to make investment were low in rural areas. In addition, agricultural disposable income, besides non-farm sources, was fostered after de-collectivization, as agricultural households were distributed the majority of value-added from agricultural production. The agricultural sector was taxed lightly. In fact, the regressive nature of agricultural taxation could not generate significant revenue for both the local and central government. The local government retained the majority of tax contribution from agricultural households. State current transfers increased in the

post-reform period to compensate for the previous cooperatives, in terms of providing social services in rural areas. As a result, growing purchases of non-agricultural consumption goods, to follow the pent-up demand restricted previously, explained the increase in net resource inflows to agriculture in the post-reform period. Furthermore, it also explained why agricultural marketed surplus increased considerably in the post-reform period, as motivation for higher consumption of non-agricultural goods encouraged agricultural households to participate into the exchange with non-agriculture.

In the pre-reform period, potential saving of agricultural was high, but not utilized to become investment or transfer for non-agricultural capital formation through the banking system. Private investment was restricted under the centrally planned system. Deposits on the State banking system were discouraged because of high inflation and negative real interest rates. Therefore, the majority of agricultural disposable income was spent on consumption goods, particularly self-consumption of agricultural products. This, in turn, explained both the low agricultural marketed surplus and relatively high State investment in agriculture. In addition, the insignificant capital transfer from agricultural also helped to explain the high dependence of total State investment on foreign aid.

In the post-reform period, high potential saving of agricultural households was not actualized as long as incentives to make investment in rural areas were low. The slow changes in employment structure and land fragmentation impeded the incentives to invest in agriculture. Development of rural non-agricultural activities was mainly motivated to utilize surplus labor within agriculture, and this development could not be self-sustained. In addition, the financial system in general and rural financial institutions in particular was still underdeveloped. Therefore, it was difficult to mobilize saving from agricultural households for non-agricultural capital formation.

Appendix of Chapter VII

Table VII.A.1.
Agricultural Output and Input, 1976-2000

Year	Q _a	Net Sown Area	Total Sown Area	Labor	Fertil- izer	Work- ing Ani- mal	Tractor	Pump
	(mil. VNDs. 1992 prices)	(1000 ha)	(1000 ha)	(1000 pers)	(1000 tons)	(1000 heads)	(1000 pieces)	(1000 pieces)
	1	2	3	4	5	6	7	8
1976	27284591.5	-	7040.9	12745.4	271.0	2224.2	18397.0	222006.0
1977	26930630.6	-	7632.8	13123.9	419.6	2279.7	21167.0	241038.0
1978	24431770.3	6954.7	7845.7	13253.6	341.3	2259.3	22768.0	250764.0
1979	25347323.5	-	8033.1	13249.5	163.2	2269.1	24347.0	265008.0
1980	26419410.6	-	8280.8	13885.8	155.2	2299.8	24023.0	205244.0
1981	28168917.6	-	8316.2	14242.9	219.4	2394.2	24534.0	224984.0
1982	31898654.7	-	8387.7	14601.4	262.1	2486.7	24610.0	231418.0
1983	35307232.2	-	8282.3	15029.2	376.3	2608.2	23722.0	228849.0
1984	36550117.7	-	8498.2	15267.7	374.9	2666.4	29659.0	200318.0
1985	39456591.2	6942.2	8556.8	15665.0	385.6	2740.8	31683.0	254260.0
1986	35409388.1	6948.0	8606.2	16036.0	523.9	2858.4	30768.0	176583.0
1987	35594544.5	6950.4	8641.8	16669.0	421.2	3054.7	22643.0	147616.0
1988	36506851.9	6956.0	8888.5	17048.0	576.1	3174.9	22113.0	123537.0
1989	39772183.1	6970.0	8978.0	17373.0	563.0	3307.2	22195.0	152167.0
1990	44678410.5	6993.2	9040.0	17678.0	549.2	3359.2	25156.0	168139.0
1991	46651130.5	7007.9	9410.0	18602.0	751.5	3368.0	35413.0	199122.0
1992	49061100.0	7293.7	9752.9	19304.0	806.0	3436.2	37686.0	225117.0
1993	50527554.5	7347.8	10028.3	20551.0	922.5	3573.5	45845.0	269322.0
1994	53880422.5	7367.3	10381.4	20886.0	1279.2	3666.3	89106.0	496046.0
1995	58815581.0	7357.5	10496.9	21840.0	1214.0	3697.6	97817.0	511793.0
1996	59239811.9	7681.2	10928.9	21678.0	1455.0	3683.2	110681.0	543119.0
1997	59706987.3	7843.1	11316.4	22259.0	1561.0	3686.9	115487.0	583860.0
1998	61304408.5	8080.2	11740.4	22488.0	1948.0	3626.1	122958.0	661329.0
1999	66231066.8	-	12285.2	22723.0	1934.6	3644.0	145805.0	793333.0
2000	68940002.2	9345.4	12470.7	-	-	-	-	-

Source: Data in Column 1 is calculated from Table VI.7, Column 2 and Table VI.A.23, Column 2, in which GDP deflator of 1992 is used. Data in Columns 2, 3, 4, 6, 7, 8 for 1976-99 from GSO (2000e, Tables 1.8., 1.18., 1.26., 1.27., 2.8. 2.44: 15. 59-68. 82-101. 147. 351). For 2000 from GSO (2001a, Tables 3 and 44: 14, 115). Data in Column 4 for 1992-99 is adjusted following the method of Nguyen, N.Q. and Goletti. (2001: 18-9 and 23). Data in Column 5 from FAO's website: www.fao.org/waicent/faostart

Table VII.A.2.
Composition of Agricultural Crops, 1976-2000
 (1994 prices. mil. new VNDs)

Year	Total Output	Cultivation			Hus- bandry	
		Total	Food	o/w Paddy		Non-Food
	1 = 2+6	2	3	4	5	6
1976	36354505	31732394	21739370	19055360	9993023	4622111
1977	33899399	28863929	19407952	16294665	9455977	5035471
1978	33419495	28684650	19292118	15398556	9392531	4734846
1979	36393910	31433595	21384498	17376529	10049097	4960314
1980	39049171	33525184	22840844	18466546	10684340	5523987
1981	40391545	34003262	23368941	19333799	10634320	6388284
1982	45100817	38186440	25967830	22201494	12218609	6914378
1983	46315061	38724277	26139047	22687983	12585230	7590784
1984	48804613	40875626	27508778	23962659	13366847	7928987
1985	50030600	41951300	28079500	24468199	13871800	8079300
1986	52530300	43470500	28389600	24719006	15080900	9059800
1987	52657700	42570600	27246700	23430400	15323900	10087100
1988	54798100	45406300	30325100	26324482	15081200	9391800
1989	58940600	48899800	33319300	29417884	15580500	10040800
1990	59887200	49604000	33289600	29783043	16314400	10283200
1991	61542000	51247500	33950300	30294886	17297200	10294500
1992	66783600	55132600	37364900	33315567	17767700	11651000
1993	71215300	58906200	39466300	35341512	19439900	12309100
1994	74659000	61660000	40653300	36509685	21006700	12999000
1995	79812600	66183400	42110400	38128294	24073000	13629200
1996	83967400	69620200	44654100	40342270	24966100	14347200
1997	89957900	74492500	46592900	41884321	27899600	15465400
1998	93502400	77298200	49059600	44888273	28238600	16204200
1999	100282600	82945600	52738100	48334624	30207500	17337000
2000	105365300	86860000	54938000	50350838	31921700	18505300

Source: Data on cultivation output is estimated from GSO (1983. Table 40: 85) for 1976-81, from GSO (2000d, Table 39: 84) for 1982-98, and from GSO (2001a. Table 41: 111) for 1999-2000. Paddy output is estimated as share of paddy over total volume of food in tons times total value of food in dong. This share is estimated from GSO (2000e. Table 2.14: 178). Data on husbandry output is estimated from GSO (1987. Table 70: 105) for 1976-81, from GSO (2000d. Table 41: 86) for 1982-98, and from GSO (2001a. Table 42: 112) for 1999-2000.

Table VII.A.3.
Sources of Investment in Agriculture, 1976-2000
 (current prices. mil. new VNDs)

Year	Total	State	FDI	Domestic Non-State
	1 = 2+3+4	2	3	4
1976	71	60	0	11
1977	105	88	0	17
1978	109	92	0	17
1979	96	80	0	16
1980	84	71	0	13
1981	83	66	0	17
1982	288	239	0	49
1983	420	341	0	79
1984	670	540	0	130
1985	919	691	0	228
1986	7744	6075	0	1669
1987	25403	21551	0	3852
1988	158468	128399	0	30070
1989	351938	238252	2025	111660
1990	675557	409165	0	266392
1991	1344871	615400	38133	691338
1992	2074763	839800	95105	1139857
1993	2649204	1207600	88674	1352930
1994	6944075	1613100	413955	4917020
1995	4476833	2216500	990852	1269481
1996	4773487	2384400	280238	2108848
1997	5768770	2981200	551074	2236496
1998	5913426	4090900	203813	1618714
1999	6140853	5124200	311988	704665
2000	7145772	5992897	274732	878143

Source: Data in Column 2 is from Table VI.24. Column 4. Data in Column 3 is from Table VI.33. Column 7. Data in Column 4 for 1976-84 is long-term credit to agricultural cooperatives, taken from Table VI.29. Column 1; for 1985-99 is available from Tran. V.T. (ed., 2000, Table 2.1: 143). For estimate method of domestic non-State investment in agriculture, see Table VI.27.

Table VII.A.4.
Composition of State Investment in Agriculture, 1976-99
 (current prices. percent)

Year	Cultivation			Husbandry	Tractor	Water Con- servancy
	Total	Land Rec-	State			
	o/w	lamation	Farm			
	1	2	3	4	5	6
1976	45	11	24	0	8	47
1977	40	8	23	0	6	54
1978	35	15	15	0	6	58
1979	44	15	23	0	6	50
1980	48	15	29	0	5	47
1986	55	9	45	4	0	41
1987	47	6	41	6	0	46
1988	39	5	32	10	0	51
1989	18	5	12	7	0	75
1990	23	7	14	4	0	73
1991	31	6	24	3	0	66
1992	27	15	11	4	0	69
1993	26	8	16	3	0	71
1994	26	3	8	7	0	68
1995	10	4	6	2	0	87
1996	18	3	9	9	0	73
1997	10	2	2	8	0	82
1998	34	2	26	1	0	65
1999	15	2	8	5	0	80

Source: Data for 1976-77 is from GSO (1979. Table 93: 159), for 1978-80 from GSO (1981. Table 75: 118), for 1986 from GSO (1987. Table 116: 182), for 1987 from GSO (1989. Table 125: 198), for 1988 from GSO (1990a. Table 111: 162), for 1989 from GSO (1991b. Table 106: 160), for 1990 from GSO (1992b. Table 111: 158), for 1991 from GSO (1993. Table 93: 146), for 1992 from GSO (1994. Table 94: 158), for 1993 from GSO (1995a. Table 7.9: 239), for 1994 from GSO (1996b. Table 7.9: 219), for 1995 from GSO (1997. Table 92: 164), for 1996 from GSO (1998. Table 125: 131), for 1997 from GSO (1999c. Table 128: 236), for 1998 from GSO (2000c. Table 129: 235) and for 1999 from GSO (2001a. Table 175: 353).

Table VII.A.5.
Composition of Total and State Investment Classified by Sector, 1976-2000
 (current prices. percent)

Year	Total Investment			State Investment		
	Total	Agriculture	Non-Agriculture	Total	Agriculture	Non-Agriculture
	1	2	3	4	5	6
1976	100.0			100.0	20.1	79.9
1977	100.0			100.0	23.7	76.3
1978	100.0			100.0	22.6	77.4
1979	100.0			100.0	20.2	79.8
1980	100.0			100.0	19.1	80.9
1981	100.0			100.0	21.8	78.2
1982	100.0			100.0	16.6	83.4
1983	100.0			100.0	16.7	83.3
1984	100.0			100.0	19.1	80.9
1985	100.0	16.4	83.6	100.0	18.5	81.5
1986	100.0	13.7	86.3	100.0	19.7	80.3
1987	100.0	10.2	89.8	100.0	18.2	81.8
1988	100.0	10.5	89.5	100.0	19.2	80.8
1989	100.0	7.4	92.6	100.0	12.4	87.6
1990	100.0	8.9	91.1	100.0	15.1	84.9
1991	100.0	10.0	90.0	100.0	13.7	86.3
1992	100.0	8.4	91.6	100.0	11.1	88.9
1993	100.0	6.3	93.7	100.0	7.2	92.8
1994	100.0	12.8	87.2	100.0	7.6	92.4
1995	100.0	6.6	93.4	100.0	11.5	88.5
1996	100.0	6.0	94.0	100.0	8.0	92.0
1997	100.0	6.0	94.0	100.0	7.4	92.6
1998	100.0	6.1	93.9	100.0	7.8	92.2
1999	100.0	5.9	94.1	100.0	8.0	92.0
2000	100.0	5.9	94.1	100.0	8.0	92.0

Source: Data in Columns 1-3 are estimated from Tran. V.T. (ed. 2000, Table 2.1: 243). Data in Column 3-6 are estimated from Table VI.24.

Table VII.A.6.
Factor Affecting the Commodity Side of ISRFs, 1976-2000

Year	ALP	X_a/Q_a	M_a/Q_a	T_d	Income Terms of Trade	I_{na}/Q_a
	(1000 VNDs. 1992 prices)	(%)	(%)	1992 = 100	(1976 = 100)	(%)
	1	2	3	4	5 = 4*Ag. Growth	6
1976	2141	19	42	123	123	6.7
1977	2052	16	42	123	122	9.9
1978	1843	18	42	153	142	8.4
1979	1913	16	39	129	125	6.8
1980	1903	25	43	146	150	4.3
1981	1978	31	47	158	169	1.7
1982	2185	28	39	144	170	2.8
1983	2353	31	42	133	169	3.2
1984	2428	38	47	137	182	3.3
1985	2516	21	30	124	173	1.4
1986	2208	28	49	84	121	3.3
1987	2135	36	60	100	141	2.1
1988	2141	39	65	134	193	2.0
1989	2289	43	77	116	176	2.6
1990	2527	43	74	109	167	3.3
1991	2508	36	60	130	201	3.2
1992	2541	44	71	100	167	4.2
1993	2459	49	81	88	151	4.9
1994	2580	55	87	83	149	10.7
1995	2693	56	92	87	162	5.2
1996	2733	58	91	89	174	5.0
1997	2682	57	94	85	174	5.8
1998	2726	55	89	88	186	5.2
1999	2915	55	85	85	192	4.8
2000	-	56	91	83	194	5.3

Source: Data in Column 1 is estimated from Table VII.A.1. Data in Columns 2 and 3 are from Table VI.A. 16. Data in Column 6 is estimated from Table VI.A.3.

Table VII.A.7.
Saving of Agricultural Sector and Saving of Agricultural Households, 1976-2000

(percent of agricultural disposable income)

Year	Total Investment in Agriculture	Net Capital Outflows	Agricultural Saving	Agricultural Households Saving	Discrepancy
	1	2	3 = 1+2	4	5 = 4-3
1976	7.9	-10.6	-2.8	2.5	5.2
1977	11.9	-16.7	-4.9	2.0	6.9
1978	9.8	-13.8	-4.0	1.6	5.6
1979	7.7	-11.6	-3.9	0.4	4.3
1980	5.0	-6.6	-1.7	7.2	8.8
1981	2.0	-1.5	0.5	0.5	0.1
1982	3.4	-0.3	3.1	3.2	0.1
1983	4.0	-3.5	0.5	23.2	22.7
1984	4.3	-2.2	2.1	24.4	22.3
1985	1.7	3.1	4.8	25.4	20.6
1986	3.2	2.3	5.5	26.4	20.9
1987	2.0	2.7	4.7	19.4	14.7
1988	1.9	2.8	4.7	12.3	7.6
1989	2.4	1.6	4.0	5.2	1.2
1990	3.4	0.1	3.5	7.0	3.5
1991	3.5	2.8	6.3	8.8	2.5
1992	4.5	1.1	5.6	10.6	5.0
1993	5.1	-2.7	2.4	12.4	10.0
1994	11.2	-0.9	10.3	14.2	4.0
1995	5.7	-6.5	-0.9	17.2	18.0
1996	5.2	-1.3	3.9	19.6	15.6
1997	5.9	-4.0	1.9	21.6	19.8
1998	5.4	-4.2	1.2	23.7	22.6
1999	5.2	-3.3	1.9	25.8	23.9
2000	5.6	-8.0	-2.3	25.8	28.1

Source: Data in column 1 are estimated from Table VI.A.4 and Table VII.A.2. Data in Column 2 are estimated from Table VI.A.4 and Table VI.A.18. Data in Column 4 are from Table VI.A.10, Column 5.

Table VII.A.8.
Composition of Agricultural Marketed Surplus, 1976-88
 (percent of total)

Year	State Procurement			Private Sale
	Total	Tax	Net Delivery	
	1	2	3	
1976	71	10	61	29
1977	71	13	57	29
1978	69	12	57	31
1979	70	13	57	30
1980	68	9	59	32
1981	73	4	69	27
1982	72	9	63	28
1983	75	8	67	25
1984	75	6	69	25
1985	85	5	80	15
1986	87	6	81	13
1987	61	3	58	39
1988	44	5	39	56

Source: Calculated from Tables VI.9 and VI.10

Table VII.A.9.
Composition of Agricultural Marketed Surplus, 1989-2000
 (percent of total)

Year	Intermediate Inputs	Consumption Goods	Export Goods
	1	2	3
1989	9	59	32
1990	8	66	26
1991	9	67	23
1992	10	65	25
1993	11	67	22
1994	10	65	25
1995	9	65	26
1996	9	62	28
1997	10	59	31
1998	11	57	32
1999	10	55	35
2000	11	55	35

Source: Calculated from Tables VI.14, VI.16 and VI.18.

Endnotes of Chapter 7

¹ It is calculated as area of cultivated land divided by working agricultural labor force.

² In David (1994), timeframe for agricultural growth accounting was 1976-80, 1980-86 and 1986-92. For Jamal and Jansen (1998), it was 1976-80, 1980-84, 1984-88 and 1988-95. For Nguyen, N.Q. and Goletti (2001), it was 1985-89 and 1990-99.

³ Data for the estimate of agricultural growth accounting is not available for 2000.

⁴ Up to 1995, GSO still provided data on working agricultural population. Meanwhile, new data base on workable agricultural population was set up for the period of 1992-2000.

⁵ David (1994) used the data on elasticities from Asian Productivity Organization (1987), whilst Jamal and Jansen took the estimates of Kawagoe, Hayami and Ruttan (1985).

⁶ Share of State investment in agricultural investment decreased from more than 80 percent in the pre-reform period to around 55 percent in the post-reform period. In the pre-reform period, share of State investment in agricultural investment was quite stable. It was highest at 84 percent in 1976-79, declined slightly to 81 and 79 percent in 1981-84 and 1985-88, respectively. After the 1989 reform, State contribution to agricultural investment was decelerating to 54 and 46 percent in 1989-92 and 1993-96, respectively, and then increasing again to 72 percent in 1997-2000.

⁷ FDI accounted for only 6 percent of agricultural investment in the post-reform period.

⁸ Nguyen, S.C., and Nguyen, V.T. (1996: 41-2) suggest that Contract 100 in encouraged investment by peasant households. This motivation, however, was short-lived as the contracted quota increased sloppily.

⁹ See footnote 25 of this chapter for the explanation of land fragmentation in the post-reform period.

¹⁰ Share of sale in the free market over agricultural marketed surplus was 15, 13, 39 and 56 percent in 1985, 86, 87, 88 respectively (Appendix, Table VII.A.8)

¹¹ See Appendix, Table VII.A.9.

¹² These posts were used for 2 purposes: (i) to avoid the flows of agricultural goods to the black market, hence helping the mobilization of agricultural goods under State control; and (ii) to implement regional food self-sufficiency.

¹³ Another half of cooperative accumulation fund came from other contribution of cooperative members, which then would be spent on specialization teams for short-term investment. In addition, each cooperative member also had to contribute around 15 working days per year for works in rural infrastructure system (Vo, N.T. 1990: 136).

¹⁴ Turnover tax, a direct transfer of part of the social product to the budget – well known from other socialist economies – varied between 15 and 50 percent of the whole sale price of a good. It is paid by the enterprise at regular intervals in order to provide the budget with the continuous flow of funds over the fiscal year. Profit transfers, equally important as a source of income for the State budget, are on the basis of average cost norms and planned profit margins, to be paid monthly. Finally, depreciation funds had to be transferred to the budget (as well as included in the production costs) which were based on original purchasing values, rather than current replacement costs, a reason why the contribution to domestic revenue of this item was comparatively low (IMF 1979: 28-9, 33, quoted by Spoor 1989: 106).

¹⁵ As share of agricultural GDP, agricultural taxes accounted for 2.5 percent in the pre-reform period and 5 percent in the post-reform period.

¹⁶ Watts (1998: 488) shows that in Luong, V.H's calculation, *'only 8 percent of rice crops is accounted for by agricultural taxes; the remainder is 7 percent from cooperative and local administration, and 31.85 percent by production cost (i.e. in effect a share of harvest paid to cover all production inputs).'*

¹⁷ Watts (1998:487) suggests that there were four broad categories of taxation at the village level: the slaughter tax (levied on butchered animals), the agricultural tax (embracing land and taxes for irrigation, protection and infrastructural services), a series of communal taxes (the social fund, health), and taxes on trade and industry.

¹⁸ Though Watts (1998: 487) does not include slaughter tax as tax contribution from agriculture, as accounted for in the present study, he estimates that this kind of tax is very insignificant. In addition, livestock production is tax exempt.

¹⁹ Akram-Lodhi (2001a: 35-6), utilizing data from Vietnam Living Standard Survey conducted under the technical assistance of the World Bank, suggests that the poorer households retained bulk of their paddy, and marketed proportionally less. In contrast, the wealthier households marketed the bulk of their paddy, and retained a much smaller fraction of output. It implies that growth of farm income may have led to the increase in sale ratio of agricultural output. Nevertheless, it is not clear whether the growing farm income could become the driving force for changes in mode of agricultural production, i.e., from production for subsistence to production for surplus value as suggested by Akram-Lodhi (ibid.). It depends on the incentives to make investment in agriculture that will be discussed later on.

²⁰ The precise figures of young migrants for Hanoi were 61 and 80 percent for permanent and temporary migrants, respectively. In Ho Chi Minh City, 60 percent of migrants were at the age of 15-24. The average age of permanent migrants was 28.7 and the figure of temporary migrants was 24.3 (ibid: 43, 53-4).

²¹ In addition, the Do, V.H., and Trinh, K.T (1999) also show that the majority of migrants, particularly temporary migrants, participated into casual labor works at low paid. Similar to the suggestion in Chapter 5, both the permanent and temporary rural-urban migration was likely to contribute to internal capital accumulation within non-agricultural sector in the post-reform period.

²² For the case of Hanoi, 74 percent of temporary migrants were reported to transfer money back home. In Ho Chi Minh City, saving rate of temporary rural-urban migrants was very high at 37 percent, more than doubling the saving rate of permanent migrants (ibid.: 48, 71).

²³ Nevertheless, it was very difficult for temporary migrants to become permanent migrants because jobs in formal sector of urban areas were very limited. In addition, at lower levels of education they could not get access to formal jobs and the costs of buying or renting a house was too high for them. As a result, few of temporary rural-urban migrants were willing to reside permanently in the cities (ibid: 48, 54, 71).

²⁴ Study of van de Walle and Cratty (2003: 14) shows a quite similar result. Using the panel data from VLSS 1992/1993 and 1997/1998, they show that access to land had a considerable negative impact on the probability of off-farm self-employment activities, but exhibited a positive effect on welfare.

²⁵ This imperfection was driven by four factors. First, though the new land law allowed the holders of land-use certificate the rights to exchange, transfer, lease, inherit and mortgage land, the State still imposed the land-ceilings of 2 hectares in the case of annual crops in the Red River Delta and 3 hectares in the case of Mekong River Delta. In addition, food production was still put at priority in the choice of crops, which was often decided by the local government. Second, the over concentration of industrial development in some big urban centers made it difficult to speed up the process of rural-urban labor transfer. As a matter of fact, the bias for the development of capital-intensive and import-substitution industries could not create a significant amount of wage employment for rural-urban migrants. Third, related to the last point, the risks of becoming landless without regular jobs hampered the incentives of agricultural households to sell land. Finally, expansion of rural non-farm enterprises was limited due to high competition of imported goods and products of urban enterprises

²⁶ Around 2 percent of agricultural GDP in the post-reform period (Tables V.28 and V.34).

8 Major Findings and Policy Implications

The study places doubt on the proposition of agricultural financial contribution for industrialization in the case of Vietnam. At whatever prices, there were real net resource inflows to agriculture in both the pre- and post-reform periods and the inflows were higher in the latter period. Calculated at 1992 benchmark domestic prices, both the visible and invisible flows witnessed net resource inflows to agriculture in the pre-reform period. In the post-reform period, though there were invisible resource outflows after 1993, agriculture still received real net resource inflows because the visible resource inflows were too large. Compared to world prices, the visible resource outflows from agriculture could not cover massive visible inflows, hence there still were real net resource inflows to the sector. As a result, ISRFs in Vietnam were mostly affected by the magnitude of the net visible inflows.

On the commodity side, agricultural marketed surplus increased considerably from the pre- to post-reform periods. However, net resource inflows to agriculture also increased sharply between the two periods due to the faster growth of purchases of non-agricultural goods by agricultural households in the post-reform period. The majority of commodity inflows to agriculture existed in the form of non-agricultural consumption goods. The sharp increase in commodity inflows in the post-reform period was due to the overshooting purchases of non-agricultural goods by agricultural institutions.

On the financial side, State current transfers and non-farm income played the dominant role in financial transfer between agriculture and non-agriculture, of which State current transfers were relatively more important in the pre-reform period and non-farm income amounted to the majority of financial inflows in the post-reform period.

The State could not impose strict controls over agricultural disposable income in the pre-reform period. Tax transfer out of agricultural sector was very limited, and agricultural taxation was just used to equalize the income distribution among cooperatives. Though it was claimed that agricultural households were highly squeezed, most of their contribution

was kept in the retained funds of agricultural cooperatives. In addition, the cooperatives also received significant amount of State current transfer, which was combined with retained funds to spend on rural social services provided freely under the collective system. Furthermore, as tax was paid in-kind, the low tax contribution to the State limited the amount of agricultural marketed surplus transferred to the State. Finally, though non-farm income was limited and payment from the cooperatives was low, agricultural households were still disposed to large income from 5 percent land. This source of income was mainly used for self-consumption within agricultural sector, as agricultural households were discouraged to participate in the exchange with non-agriculture under the dual price system.

The consumption boom in the post-reform period was largely financed by non-farm income. The opening of free rural-urban migration and development of rural non-agricultural activities generated high additional income for agricultural households. This source of income was mainly spent on the purchases of non-agricultural consumption goods, as incentives to make investment were low in rural areas. In addition, agricultural disposable income, besides non-farm sources, was fostered after de-collectivization, since agricultural households were distributed the majority of value-added from agricultural production. The agricultural sector was taxed lightly. In fact, the regressive nature of agricultural taxation could not generate significant revenue for both the local and central government. The local government retained the majority of tax contribution from agricultural households. Furthermore, State current transfer increased in the post-reform period to compensate for the loss of rural social services provided by the previous cooperatives. As a result, growing purchases of non-agricultural consumption goods, to follow the pent-up demand restricted previously, explained the increase in net resource inflows to agriculture in the post-reform period. Moreover, it also explained why agricultural marketed surplus increased considerably in the post-reform period, as motivation for higher consumption of non-agricultural goods encouraged agricultural households to participate into the exchange with non-agriculture.

In short, the estimate of ISRFs in Vietnam shows that conventional thinking creates many illusions with regard to the interaction between agriculture and industry in Vietnam. First, opposed to conventional

thinking, agricultural terms of trade were higher in the pre-reform period compared to those in the post-reform period. Second, the agricultural sector in general was taxed lightly in both the pre- and post-reform periods. Third, agriculture was favored by State investment in the pre-reform period, compared to that in the post-reform period. Fourth, though the sector was relatively less favored in the post-reform period, State investment still played dominant role as private investment in the sector was very limited. Fifth, agriculture received a considerable amount of income from State current transfers and non-farm activities. These significant sources of income were mainly used for consumption. Finally, as a result, agricultural saving was very limited and the sector could not generate any financial contribution for non-agriculture. Instead, Vietnam's agriculture has been continuously nursed by non-agriculture.

Recall the macroeconomic performance of Vietnam's economy in Chapter 3 and 5; one may see that the internal accumulation in the post-reform period was much higher than that in the pre-reform period. Meanwhile, my analysis shows that the net resource inflows to agriculture in the post-reform period were higher than those in the pre-reform period. It suggests that Vietnam's non-agriculture has taken the sole responsibility, if possible, for internal accumulation. Yet, more efficient utilization of resources within the sector, which is brought about by the 1989 reform, is not the only reason for the improvement in internal accumulation. In fact, one main reason for high inflation and limited contribution of SOEs to the State in the pre-reform period was due to agricultural stagnation, food shortage, high relative prices of agricultural goods, and hence low profitability of SOEs. In contrast, food availability in the post-reform period helped reduce inflation and set the sound base for growth of non-agricultural output and employment. Particularly, since the private non-agricultural sector was the main destination for free rural-urban migration with low prices of wage goods, this sector has become the major net savers in the post-reform period. The development of the financial system after the 1989 reform helped to transfer capital from the private non-agricultural sector to SOEs that were favored by the strategy of import-substitution industrialization.

The above argument suggests that Vietnam has been going through the Lewisian pattern of industrialization, during which the pre-reform period was a failure and the post-reform period witnessed some success.

The success of such a pattern of industrialization needs both two balances, that is, food and employment balance (Saith 1985). The failure of industrialization in the pre-reform period was mostly due to the violation of food balance, as the price dualism under centrally planned system could not generate sufficient amount of agricultural marketed surplus. In Ishikawa's word (1988), the country could not overcome the 'Ricardian Growth Trap' in the pre-reform period. In the post-reform period, price and trade liberalization helped Vietnam avoid such a trap and facilitated the rural-urban labor transfer that in turn generated continuous internal accumulation in the private non-agricultural sector.

Nevertheless, the future of economic growth is not as bright in Vietnam as employment and food balance are still likely to be violated for three reasons. First, the weird dualism¹ still exists as rural-urban labor transfers took place very slowly while the share of agriculture in total GDP dropped drastically. The bias for SOEs and FDI in import-substitutions industries impedes employment creation since those industries are very capital-intensive. Meanwhile, the growth of private sector with high employment elasticity is limited because the concurrent economic policies are biased against private investment.

Second, concentration of industrial development in a few urban centers limits the access to urban employment of rural labor force. Meanwhile, rural industries just follow survival strategies and it is very difficult for the sector to compete against urban industries and imported goods under import-substitution strategies. In addition, the urban concentration also constrains further agricultural growth as it impedes the generation of employment and new demand for agricultural goods.

Finally, even if the employment balance can be satisfied, the prospective on food balance is quite dismal, as the impact of the 1989 reform on agricultural growth has come to its threshold. Further agricultural growth needs not only improving efficiency but also large-scale investment, the use of capital-intensive inputs and very importantly a sufficient demand to accelerate agricultural commercialization. The existing land fragmentation together with agricultural surplus labor did discourage investment in agriculture as well as development of agricultural commercialization².

Consequently, the existing odd dualism in Vietnam will be lessened if the all of the followings happens:

1. A level playing field is set up for free competition between SOEs and private non-agricultural sector.
2. Industrial development is decentralized, and non-agricultural employment expansion is a decisive factor to provide further demand for the growing commercialized agriculture. Particularly, rural industries are developed based on the comparative advantages of each region. Furthermore, agro-processing industries are decentralized to rural areas to make use of the existing raw materials and surplus labor force.
3. Land market is legally established to promote land consolidation and accumulation. This creates incentives to make investment in a commercialized agriculture.
4. A rural financial system is further developed to enhance investment in rural sector.

Endnotes of Chapter 8

¹ This term is adopted from Dapice (2003: 6-8), who defines 'weird dualism' in Vietnam as the widening rural-urban gap along with high economic growth. This situation happens in Vietnam due to the concentration of investment in the protected State industrial sector, which generate only few employments. Dapice (2003: 6) concludes that *'when a country puts most of its investment funds and almost no labor into a sector that cannot generate its own cash flow or maintain its share of output, even with protection and other advantages, it is not a sign of good economic management. The high-cost State sector... shows what happens when self-sufficiency is pursued at all costs. The non-State sector could create more and more stable jobs and get more output per dong of investment. If they have a larger role, there would be more exports, less debt and higher profits without protection.'*

² This point is also related to food balance not only in terms of quantity but also in terms of quality. Higher urban income requires raises in the demand for high quality food that in turn needs the production of high-value-per-unit crops, large-scale investment and development of agricultural commercialization.

Bibliography

- Abiad, V.G. (1995) *Grassroots Financial Systems Development in Vietnam*. Hanoi: APRACA - GTZ.
- Adelman, I. and S. Robinson (1988) 'Macroeconomic Adjustment and Income Distribution: Alternative Models Applied to Two Economies,' *Journal of Development Economics* 29(1): 23-44.
- Ahluwalia, M.S. (1976) 'Inequality, Poverty and Development,' *Journal of Development Economics* 3: 307-42.
- Akram-Lodhi, A.H. (2001a) "'Landlords Are Taking Back the Land': The Agrarian Transition in Vietnam,' ISS Working Paper. The Hague: Institute of Social Studies.
- Akram-Lodhi, A.H. (2001b) 'Vietnam's Agriculture: Is There an Inverse Relationship,' ISS Working Paper. The Hague: Institute of Social Studies.
- Alliband, G. (1991) 'Whither Vietnam?,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.) *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 17: 234-47. Canberra: Australian National University.
- Amano, M. (1980) 'A Neoclassical Model of the Dual Economy with Capital Accumulation in Agriculture,' *Review of Economic Studies* 47(5): 933-44.
- Andreff, W. (1993) 'The Double Transition from Underdevelopment and From Socialism in Vietnam,' *Journal of Contemporary Asia* 23(4): 515-31.
- Andrews, M.S. (1985) 'Agricultural Terms of Trade and Distributional Perversities in a Neo-Ricardian Model,' *Journal of Development Economics* 17: 117-29.
- Barker, R. (1994) 'Investment Priorities for Sustaining Agricultural Growth and Rural Development,' in R. Barker (ed.), *Agricultural Policy Analysis for Transition to a Market-Oriented Economy in Vietnam*. Rome: FAO.
- Bartlett, W. (1983) 'On the Dynamic Instability of Induced-Migration Unemployment in a Dual Economy,' *Journal of Development Economics* 13: 85-96.
- Bell, C. (1979) 'The Behaviour of a Dual Economy under Different 'Closing Rules,' *Journal of Development Economics* 6: 47-72.
- Benjamin, D. and L. Brandt (2002) 'Agriculture and Income Distribution in Rural Vietnam under Economic Reform: A Tale of Two Regions,' Working Paper of the William Davidson Institute. Michigan: The William Davidson Institute.
- Beresford, M. (1985) 'Household and Collective in Vietnamese Agriculture,' *Journal of Contemporary Asia* 15(1): 5-36.
- Beresford, M. (1990) 'Vietnam: Socialist Agriculture in Transition,' *Journal of Contemporary Asia* 20(4): 466-86.
- Beresford, M. (1991) 'The Impact of Economic Reforms on the South,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.) *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 10: 118-35. Canberra: Australian National University.
- Beresford, M. (1993) 'The Political Economy of Dismantling the 'Bureaucratic Centralism and Subsidy System' in Vietnam,' in K. Hewison *et al.* (eds.), *Southeast Asia in the 1990s: Authoritarianism, Democracy and Capitalism*. Sydney: Allen & Unwin.
- Beresford, M. and A. Fford (1996) 'A Methodology for Analyzing the Process of Economic Reform in Vietnam: the Case of Domestic Trade,' Working Papers of the Australian Vietnam Research Project. Canberra: Macquarie University and Australian National University.
- Beresford, M. and B. McFarlane (1995) 'Regional Inequality and Regionalism in Vietnam and China,' *Journal of Contemporary Asia* 25(1): 50-72.

- Bhaduri, A. (1993) 'Alternative Development Strategies and the Rural Sector,' in A. Sign and H. Tabatabai (eds.), *Economic Crisis and the Third World Agriculture*, Cambridge/New York: Cambridge University Press.
- Bharadwaj, K. (1988) 'The Analytics of the Agriculture-Industry Relation,' in K. Arrows (ed.), *The Balance Between Industry and Agriculture in Economic Development*. London: IEA/Macmillan.
- Bui, Ngoc Thanh *et al.* (eds.) (1995) *Nghien Cuu Chinh Sach Xa Hoi Nong Thon Viet Nam* [Studies on Social Policies for Vietnam's Rural Sector]. Hanoi: NXB Chinh Tri Quoc Gia.
- Bui, Thi Sy (1996) 'Agro-Processing Industry and Markets on Agricultural Products in Vietnam,' Report of Center for Agriculture and Rural Development. Hanoi: Center for Agriculture and Rural Development.
- Byres, T.J. (1992) 'Agrarian Transition and the Agrarian Question,' in J. Harris (ed.), *Rural Development*. London/New York: Routledge.
- Canning, D. (1988) 'Increasing Returns in Industry and the Role of Agriculture in Growth,' *Oxford Economic Papers* 40(3): 463-76.
- Cardoso, E.A. (1981) 'Food Supply and Inflation,' *Journal of Development Economics* 8(3): 269-84.
- CCIC [Ban Tu Tuong Van Hoa Trung Uong (Central Committee of Ideology and Culture under VCP)] (1991) *Tai Lieu Tham Khao Dung Cho Giang Vien/Bao Cao Vien Nghien Cuu Van Kien Dai Hoi VII Dang Cong San Viet Nam* [Referring Documents for Lecturers/Reporters Studying Documents of Seventh Congress of VCP]. Hanoi: NXB Tu Tuong-Van Hoa.
- CCP [Ban Tuyen Huan Trung Uong (Central Committee of Propaganda under VCP)] (1992) *Tai Lieu Huong Dan Hoc Tap Nghi Quyet Dai Hoi Lan Thu V Cua Dang* [Study Guide on Resolution of the Fifth Congress of the Vietnamese Communist Party], Vol. 1-2. Hanoi: NXB Sach Giao Khoa Mac-Lenin.
- CECARDE (1997a) *Nong Nghiep, Nong Thon Trong Giai Doan Cong Nghiep Hoa, Hien Dai Hoa* [Agriculture, Rural during the Period of Industrialization, Modernization]. Hanoi: NXB Chinh Tri Quoc Gia.
- CECARDE (1997b) *Vietnam Bank for Agriculture*. Hanoi: NXB Chinh Tri Quoc Gia.
- Chenery, H. and M. Syrquin (1975) *Patterns of Development 1950-1970*. Oxford/New York: Oxford University Press.
- Chenery, H. *et al.* (1986) *Industrialization and Growth*. Oxford/New York: Oxford University Press.
- Chichilnisky, G. (1981) 'Terms of Trade and Domestic Distribution – Export-Led Growth with Abundant Labor,' *Journal of Development Economics* 8(2): 163-92.
- Chichilnisky, G. and L. Taylor (1980) 'Agriculture and the Rest of the Economy: Macroconnections and Policy Restraints,' *Post-Keynesian Economics and Agriculture*, May: 303-9.
- Chossudovsky, M. (1997) *The Globalisation of Poverty: Impact of IMF and World Bank Reform*, Ch. 8: 'The Post-War Economic Destruction of Vietnam': 147-71. London and New Jersey: Zed Book Ltd.
- Chu, Van Lam (1993) 'Reform in Vietnamese Agriculture,' in W.S. Turley and M. Selden (eds.), *Reinventing Vietnamese Socialism*. Boulder/San Francisco/Oxford: Westview Press.
- Chu, Van Lam (1995) 'May Van De Ve Con Duong Phat Tien Nong Nghiep Nong Thon Trong Thoi Ky Moi' [Issues on the Road of Rural and Agricultural Development in the New Phase], *Tap chi Nghien cuu Kinh te* 5: 3-12. Hanoi.
- Chu, Van Lam *et al.* (1992) *Hop Tac Hoa Nong Nghiep Viet Nam: Lich Su – Van De – Tien Vong* [Collectivization in Vietnam's Agriculture: History – Problems – Prospects]. Hanoi: NXB Su That.

- CIEM (Central Institute for Economic Management) (1990) *Về Đổi Mới Quản Lý Kinh Tế Ở Việt Nam* [Of Reforming Economic Management in Vietnam]. Hanoi: CIEM.
- CIEM (1994) *Đổi Mới Kinh Tế Ở Việt Nam – Thành Tựu Và Triển Vọng* [Economic Reform in Vietnam – Achievements and Prospects] [Proceedings of the International Conference on Vietnam's Economic Reform held in Hanoi during 23-25, December 1994 by CIEM and SIDA]. Hanoi: CIEM.
- CIEM (2002) *Explaining Growth in Vietnam*. Hanoi: CIEM.
- Cooper, C. (1983) 'Extensions of the Raj-Sen Model of Economic Growth,' *Oxford Economic Papers* 35(2): 170-85.
- Corbridge, S. (1992) 'Urban Bias, Rural Bias, and Industrialization: An Appraisal of the Work of Michael Lipton and Terry Byres,' in J. Harris (ed.), *Rural Development*. London/New York: Routledge.
- Corden, W.M., and Findlay, R. (1975) 'Urban Unemployment, Intersectoral Capital Mobility and Development Policy,' *Economica* 42(165): 59-78.
- Cornia, G., and G. Jerger (1982) 'Rural vs. Urban Saving Behavior: Evidence from an ILO Collection of Household Surveys,' *Development and Change* 13(1): 123-57.
- Cox, D. (2002) 'Private Inter-household Transfers in Vietnam in the Early and Late 1990s,' The World Bank Working Paper. Washington: World Bank.
- Cox, D., J. Fetzer and E. Jimenez (1998) 'Private Transfers in Vietnam,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 6: 179-200. Washington: World Bank.
- Dang, Duc Dam (1995) *Vietnam's Economy 1986-1995*. Hanoi: The Gioi Publisher.
- Dang, Phong and M. Beresford (1998) *Authority Relations and Economic Decision-Making in Vietnam – An Historical Perspective*. Copenhagen: Nordic Institute of Asian Studies.
- Dao, Duy Tung (1987) *Bàn Về Đổi Mới Tư Duy* [Discussion on Reforming Thinking]. Hanoi: NXB Su That.
- Dao, Duy Tung (1994) *Qua Trình Hình Thành Con Đường Đi Lên Chủ Nghĩa Xã Hội Ở Việt Nam* [The Initiation and Consolidation of the Road to Socialism in Vietnam]. Hanoi: NXB Chính Trị Quốc Gia.
- Dao, The Tuan (1985) 'In Search of a Model of Development for Vietnamese Agriculture,' *Vietnamese Studies* 79: 33-48. Hanoi.
- Dao, The Tuan (1999) 'Present-Day Problems of Our Agriculture,' *Vietnamese Studies* 2: 43-76. Hanoi.
- Dao, The Tuan (1999) 'Xã Hội Nông Thôn Và Các Vấn Đề Của Nông Nghiệp Trong Thời Kỳ Hiện Nay' [Rural Society and Agricultural Issues at Present], *Tạp Chí Xã Hội Học* 67(2): 16-29. Hanoi.
- Dao, The Tuan and P. Bergeret (eds.) (1995) *Technical Development of an Economy in Transition*. Hanoi: Foreign Languages Publisher.
- Dao, Van Tap (ed.) (1980) *35 Năm Kinh Tế Việt Nam (1945-1980)* [35 Years of Vietnam's Economy (1945-80)]. Hanoi: NXB Khoa Học Xã Hội.
- Dao, Van Tap (ed.) (1990) *45 Năm Kinh Tế Việt Nam (1945-1990)* [45 Years of Vietnam's Economy (1945-90)]. Hanoi: NXB Thống Ke.
- Dao, Xuan Sam (2000) *Việt Theo Dòng Đổi Mới Tư Duy Kinh Tế* [Grasp the Reform of Economic Thinking]. Hanoi: NXB Thanh Nien.
- Dapice, D.O. (1999) 'Vietnam's Economy and Asian Crisis,' The HIID Working Paper. Cambridge, MA: Harvard Institute for International Development.
- Dapice, D.O. and Duc Phat, Cao (1994) 'Rural Reform, Poverty Alleviation, and Economic Growth,' in D.O. Dapice et al (eds.), *In Search of the Dragon's Trail: Economic Reform in Vietnam*. Cambridge, MA: Harvard Institute for International Development.
- David, C.C. (1994a) 'Agricultural Pricing Policy,' in R. Barker (ed.), *Agricultural Policy Analysis for Transition to a Market-Oriented Economy in Vietnam*. Rome: FAO.

- David, C.C. (1994a) 'Trends in Agricultural Productivity,' in R. Barker (ed.), *Agricultural Policy Analysis for Transition to a Market-Oriented Economy in Vietnam*. Rome: FAO.
- Demery, L. and T. Addison (1987) 'Stabilization Policy and Income Distribution in Developing Countries,' *World Development* 15(12): 1483-98.
- Desai, J. (1998) 'Poverty and Fertility in Vietnam,' in D. Dollar, P. Glewwe and J. Litvack (eds.) *Household Welfare and Vietnam's Transition*, Ch. 10: 277-320. Washington: World Bank.
- Dinh, Q. (1993) 'Vietnam's Policy Reforms and Its Future,' *Journal of Contemporary Asia* 23(4): 532-53.
- Dinh, Q. (1993) 'Vietnam's Policy Reforms and Its Future,' *Journal of Contemporary Asia* 23(4): 532-53.
- Dinh, Xuan Lam and Lan Hai, Duong (eds.) (1998) *Nghien Cuu Viet Nam: Mot So Van De Lich Su - Kinh Te - Xa Hoi - Van Hoa* [Vietnamese Studies: Historical - Economic - Social - Cultural Issues]. Hanoi: CESDER/NXB The Gioi.
- Dixit, A.K. (1973) 'Models of Dual Economies,' in J.A. Mirrlees and N.H. Stern (eds.), *Models of Economic Growth* (Proceedings of International Economic Association Conference in Jerusalem) Ch. 15: 325-57. London/New York: Macmillan.
- Do, Duc Dinh (1991) 'The Public Sector of Vietnam,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi - Vietnam's Renovation: Policy and Performance*, Ch. 6: 54-67. Canberra: Australian National University.
- Do, Muoi (1997) *Ve Cong Nghiep Hoa, Hien Dai Hoa Dat Nuoc* [Of Industrializing and Modernizing the Country]. Hanoi: NXB Chinh Tri Quoc Gia.
- Do, The Tung *et al.* (1995) 'Su Doi Moi Quan Diem Ly Luan Va Kinh Nghiem Phat Trien Nen Kinh Te Hang Hoa O Nuoc Ta' [Reform of Ideological Stance and Experiences of Developing Commodity Economy in Our Country]. Hanoi: Trung Tam Thong Tin Tu Lieu/Hoc Vien Chinh Tri Quoc Gia Ho Chi Minh.
- Do, Van Hoa, and Khac Tham, Trinh (eds.) (1999) *Nghien Cuu Di Dan O Viet Nam* [Studies on Migration in Vietnam]. Hanoi: NXB Nong Nghiep.
- Do, Van Sy and Viet Lam, Tran (1981) 'Mot Phuong Phap Tinh Cac Chi Tieu San Pham Chu Yeu Cua Ke Hoach Kinh Te Quoc Dan' [A Method to Estimate Major Indicators of the National Economic Plan], *Tap Chi Ke Hoach Hoa* 104: 19-22, 25. Hanoi.
- Do, Xuan Truong (2000) 'Vietnam's Economy, After the Asian Economic Crisis,' *Asian-Pacific Economic Literature* 14(1): 36-43. Canberra.
- Dobb, M. (1967) *Papers on Capitalism, Development and Planning*, Ch. 2. London/New York: Routledge and Kegan Paul.
- Dodsworth, J.R. *et al.* (1996) 'Vietnam: Transition to a Market Economy,' The IMF Occasional Paper. Washington: IMF.
- Dollar, D. (1994) 'Macroeconomic Management and the Transition to the Market in Vietnam,' *Journal of Comparative Economics* 18(3): 357-75.
- Dollar, D. and J. Litvack (1998) 'Macroeconomic Reform and Poverty Reduction in Vietnam,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 1: 1-28. Washington: World Bank.
- Dollar, D. and P. Glewwe (1998) 'Poverty and Inequality in the Early Reform Period,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 2: 29-60. Washington: World Bank.
- Domar, E. (1972) 'A Soviet Model of Growth,' in A. Nove and D.M. Nuti (eds.), *Socialist Economics*, pp.149-72. London: Penguin Books.
- Dutt, A.K. (1984a) 'Rent, Income Distribution and Growth in an Underdeveloped Agrarian Economy,' *Journal of Development Economics* 15: 185-211.
- Dutt, A.K. (1984b) 'Stagnation, Income Distribution and Monopoly Power,' *Cambridge Journal of Economics* 8(1): 25-40.

- Dutt, A.K. (1990) 'Sectoral Balance in Development: A Survey,' *World Development* 18(6): 915-30.
- Ellis, F. (1992) *Peasant Economics*. Cambridge/New York: Cambridge University Press.
- Ellis, F. (1994) *Agricultural Policies in Developing Countries*. Cambridge/New York: Cambridge University Press.
- Ellis, F. (1998) 'Household Strategies and Rural Livelihood Diversification,' *The Journal of Development Studies* 35(1): 1-38.
- Ellman, M. (1975) 'Did the Agricultural Surplus Provide the Resources for the Increase in Investment in the USSR during the First Five Year Plan,' *The Economic Journal* 85(340): 844-64.
- Evans, G. (1991) 'Australia, Vietnam and the Region,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 1: 1-11. Canberra: Australian National University.
- Ezaki, M., and Anh Son, Le (1997) 'Prospect of the Vietnamese Economy in the Medium and Long Run: A Dynamic CGE Analysis,' APEC Discussion Paper. Nagoya: Nagoya University.
- Fforde, A. (1984) 'Economic Aspects of the Soviet-Vietnamese Relationship: Their Role and Importance,' Birkbeck College Discussion Paper. London: University of London.
- Fforde, A. (1991) 'The Successful Commercialization of a Neo-Stalinist Economic System – Vietnam 1979-89 with a Postscript,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 9: 95-117. Canberra: Australian National University.
- Fforde, A. (1992, 1993, 1994, 1995) *Vietnam: Economic Commentary and Analysis. A Bi-Annual Appraisal of the Vietnamese Economy*. Canberra: Aduky Pty. Ltd.
- Fforde, A. (1994) 'Political Economy Perspectives of the Reform in Vietnam,' in B. Ljunggren (ed.) *The Challenge of Reform in Indochina*. Cambridge, MA: Harvard Institute of International Development.
- Fforde, A. (1998) 'Vietnam – Culture and Economy: Dyed-in-the-Wool Tigers?,' Draft Paper for Australian National University. Canberra: Australian National University.
- Fforde, A. and A. Goldstone (1995) *Vietnam to 2005: Advancing on All Fronts*. London: The Economist Intelligence Units.
- Fforde, A., and S. de Vylder (1988) *Vietnam - An Economy in Transition*. Stockholm: SIDA.
- Fforde, A., and S. de Vylder (1996) *From Plan to Market. The Economic Transition in Vietnam*. Boulder/Oxford: Westview Press.
- Fields, G.S. (1975) 'Rural-Urban Migration, Urban Employment and Underemployment, and Job-Search Activity in LDCs,' *Journal of Development Economics* 2(2): 165-87.
- FitzGerald, E.V.K. (1993) *The Macroeconomics of Development Finance: A Kaleckian Analysis of the Semi-Industrialized Economy*. London/New York: St. Martin's Press.
- Forbes, D., T.H. Hull, D.G. Marr and B. Brogan (eds.) (1991) *Doimoi – Vietnam's Renovation: Policy and Performance*. Canberra: Australian National University.
- Fraser, S. (1991) 'Maternal Child Health and Education in Vietnam,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 14: 180-205. Canberra: Australian National University.
- Gallup, J.L. (2002) 'The Wage Labor Market and Inequality in Vietnam in the 1990s,' The World Bank Working Paper. Washington: World Bank.
- GAO (United States General Accounting Office) (1999) 'Vietnam Economic Data: Assessment of Availability and Quality,' Report to Congressional Requesters. Washington: GAO.

- Gersovitz, M. (1974) 'Aggregate Demand, the Wage Gap and Unemployment in LDCs,' *Journal of Development Economics* 1(3): 235-46.
- Gertler, P. and J. Litvack (1998) 'Access to Health Care during Transition: The Role of the Private Sector in Vietnam,' in D. Dollar, P. Glewwe, and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 8: 235-56. Washington: World Bank.
- Ghatak, S. and K. Ingersent (1984) *Agriculture and Economic Development*. Brighton: Harvester Press.
- Glewwe, P. and H. Jacoby (1998) 'School Enrolment and Completion in Vietnam: An Investigation of Recent Trends,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 7: 201-34. Washington: World Bank.
- Glewwe, P. and Phong, Nguyen (2002) 'Economic Mobility in Vietnam in the 1990s,' The World Bank Working Paper. Washington: World Bank.
- Glewwe, P., M. Gragnolati and H. Zaman (1999) 'Who Gained from Vietnam's Boom in the 1990s? An Analysis of Poverty and Inequality Trends,' The World Bank Working Paper. Washington: World Bank.
- GOLA (General Office of Land Administration) (1997) 'Nghien Cuu Nhung Van De Chu Yeu Ve Kinh Te Xa Hoi Co Quan He Truc Tiep Den Viec To Chuc Thuc Hien Va Hoan chinh Phap Luat Dat Dai Hien Nay' [A Study on the Main Socio-Economic Issues, Directly Relating to the Implementation and Completion of the Present Land Law], Report for GOLA. Hanoi: GOLA.
- GOLA (1998) 'Ve Chuyen Doi Ruong Dat Nong Nghiep, Khac Phuc Tinh Trang Phan Tan, Manh mun Trong San Xuat' [Of Transforming Agricultural Land, Overcoming the Problem of Segmented Land Structure in Agricultural Production], Report for GOLA. Hanoi: GOLA.
- Goldin, I. (ed.) (1993) *Economic Reform, Trade and Agricultural Development*. New York/Paris: St. Martin's Press/OECD.
- GRET/VIA (Vietnam's Institute of Agronomy) (1998) *He Thong Nong Nghiep Lau Vuc Song Hong* [Agricultural System in the Red River Basin]. Hanoi: NXB Nong Nghiep.
- Griffin, K. (1974) *The Political Economy of Agrarian Change*, Ch. 5. London: Macmillan.
- Griffin, K. (ed.) (1998) *Economic Reform in Vietnam*. London: Macmillan.
- GSO (General Statistical Office) (1977) *Nien Giam Thong Ke 1976* [Statistical Yearbook 1976]. Hanoi: NXB Thong Ke.
- GSO (1978) *Nien Giam Thong Ke 1977* [Statistical Yearbook 1977]. Hanoi: NXB Thong Ke.
- GSO (1979) *Nien Giam Thong Ke 1978* [Statistical Yearbook 1978]. Hanoi: NXB Thong Ke.
- GSO (1980) *Nien Giam Thong Ke 1979* [Statistical Yearbook 1979]. Hanoi: NXB Thong Ke.
- GSO (1981) *Nien Giam Thong Ke 1980* [Statistical Yearbook 1980]. Hanoi: NXB Thong Ke.
- GSO (1982) *Nien Giam Thong Ke 1981* [Statistical Yearbook 1981]. Hanoi: NXB Thong Ke.
- GSO (1983) *Nien Giam Thong Ke 1982* [Statistical Yearbook 1982]. Hanoi: NXB Thong Ke.
- GSO (1985a) *Nien Giam Thong Ke 1984* [Statistical Yearbook 1984]. Hanoi: NXB Thong Ke.
- GSO (1985b) *So Lieu Thong Ke 1930-1984* [Statistical Data 1930-84]. Hanoi: NXB Thong Ke.
- GSO (1987) *Nien Giam Thong Ke 1986* [Statistical Yearbook 1986]. Hanoi: NXB Thong Ke.
- GSO (1988) *So Lieu Thong Ke Kinh Te Tai Chinh 1955-1986* [Statistical Data on Economics and Finance 1955-86]. Hanoi: NXB Thong Ke.

- GSO (1989) *Nien Giam Thong Ke 1987* [Statistical Yearbook 1987]. Hanoi: NXB Thong Ke.
- GSO (1990a) *Nien Giam Thong Ke 1988* [Statistical Yearbook 1988]. Hanoi: NXB Thong Ke.
- GSO (1990b) *So Lieu Thong Ke CHXHCN Viet Nam 1976-1989*, [Statistical Data of the Socialist Republic of Vietnam 1976-89]. Hanoi: NXB Thong Ke.
- GSO (1991a) *Kinh Te Va Tai Chinh Vietnam (1986-1990)* [Economy and Finance of Vietnam (1986-90)]. Hanoi: NXB Thong Ke.
- GSO (1991b) *Nien Giam Thong Ke 1989* [Statistical Yearbook 1989]. Hanoi: NXB Thong Ke.
- GSO (1991c) *So Lieu Nong Nghiep Viet Nam 35 Nam (1956-1990)* [Data on Vietnam's Agriculture for 35 Years (1956-90)]. Hanoi: NXB Thong Ke.
- GSO (1992a) *He Thong Tai Khoan Quoc Gia O Viet Nam 1986-1990* [System of National Accounts of Vietnam 1986-90]. Hanoi: NXB Thong Ke.
- GSO (1992b) *Nien Giam Thong Ke 1990* [Statistical Yearbook 1990]. Hanoi: NXB Thong Ke.
- GSO (1992c) *Nien Giam Thong Ke 1991* [Statistical Yearbook 1991]. Hanoi: NXB Thong Ke.
- GSO (1992d) *So Lieu Thong Ke Nong, Lam Ngu Nghiep Viet Nam (1976-1991) – Cac Vung Trong Diem San Xuat Hang Hoa* [Statistical Data of Vietnam's Agriculture, Forestry and Fishery (1976-91) – The Pivotal Areas of Commodity Production]. Hanoi: NXB Thong Ke.
- GSO (1993) *Nien Giam Thong Ke 1992* [Statistical Yearbook 1992]. Hanoi: NXB Thong Ke.
- GSO (1994) *Nien Giam Thong Ke 1993* [Statistical Yearbook 1993]. Hanoi: NXB Thong Ke.
- GSO (1995a) *Nien Giam Thong Ke 1994* [Statistical Yearbook 1994]. Hanoi: NXB Thong Ke.
- GSO (1995b) *So Lieu Thong Ke Ve Co So Ha Tang O Cac Vung Nong Thon Viet Nam* [Statistical Data on Basic Infrastructure of Rural Regions in Vietnam]. Hanoi: NXB Thong Ke.
- GSO (1996a) *Dong Thai Va Thuc Trang Kinh Te Xa Hoi Viet Nam Trong 10 Nam Doi Moi* [Impetus and Present Situation of Vietnam Society and Economy of 10 Years of Reform]. Hanoi: NXB Thong Ke.
- GSO (1996b) *Nien Giam Thong Ke 1995* [Statistical Yearbook 1995]. Hanoi: NXB Thong Ke.
- GSO (1997) *Nien Giam Thong Ke 1996* [Statistical Yearbook 1996]. Hanoi: NXB Thong Ke.
- GSO (1998a) *Nien Giam Thong Ke 1997* [Statistical Yearbook 1997]. Hanoi: NXB Thong Ke.
- GSO (1998b) *So Lieu Cac Vung Kinh Te Trong Diem Cua Viet Nam* [Socio-Economic Statistical Data of Pivotal Economic Regions in Vietnam]. Hanoi: NXB Thong Ke.
- GSO (1999a) *Bang Can Doi Lien Nganh Cua Viet Nam* [Vietnam's Input-Output Table]. NXB Thong Ke, Hanoi.
- GSO (1999b) *Ket Qua Dieu Tra Kinh Te – Xa Hoi Ho Gia Dinh 1994-1997* [Results of the Socio-Economic Surveys of Households 1994-97]. Hanoi: NXB Thong Ke.
- GSO (1999c) *Nien Giam Thong Ke 1998* [Statistical Yearbook 1998]. Hanoi: NXB Thong Ke.
- GSO (1999d) *So Lieu Thong Ke Nong – Lam - Thuy San 1990-1998 Va Du Bao Nam 2000* [Statistical Data of Agriculture, Forestry and Fishery 1990-98 and Forecast in the Year 2000]. Hanoi: NXB Thong Ke.

- GSO (2000a) *Ket Qua Dieu Tra Doi Song Kinh Te Ho Gia Dinh Nam 1999* [Results of the Households' Living Standards and Economic Condition Survey in 1999]. Hanoi: NXB Thống Ke.
- GSO (2000b) *Kinh Te Viet Nam Trong Nhung Nam Doi Moi* [Vietnam's Economy in the Years of Reform]. Hanoi: NXB Thống Ke.
- GSO (2000c) *Nien Giam Thong Ke 1999* [Statistical Yearbook 1999]. Hanoi: NXB Thống Ke.
- GSO (2000d) *So Lieu Thong Ke Kinh Te – Xa Hoi Viet Nam 1975-2000* [Statistical Data of Vietnam Socio-Economy 1975-2000]. Hanoi: NXB Thống Ke.
- GSO (2000e) *So Lieu Thong Ke Nong-Lam Nghiep Thuy San Viet Nam 1975-2000* [Statistical Data of Vietnam's Agriculture, Forestry and Fishery 1975-2000]. Hanoi: NXB Thống Ke.
- GSO (2000f) *Vietnam Living Standards Survey 1997-1998*. Hanoi: Statistical Publishing House.
- GSO (2001a) *Nien Giam Thong Ke 2000* [Statistical Yearbook 2000]. Hanoi: NXB Thống Ke.
- GSO (2001b) *Tinh Hinh Kinh Te – Xa Hoi Viet Nam 10 Nam 1991-2000* [Vietnam's Socio-Economic Situation for 10 Years 1991-2000]. Hanoi: NXB Thống Ke.
- Guha, A. (1969) 'Accumulation, Innovation, and Growth under Conditions of Disguised Unemployment,' *Oxford Economic Papers* 21(3): 360-72.
- Gurley, J.G. (1976) *China's Economy and the Maoist Strategy*, Ch. 6: 264-83. New York: Monthly Review Press.
- Gurley, J.G. and E.S. Shaw (1967) 'Financial Structure and Economic Development,' *Economic Development and Cultural Change* 15 (3): 257-68.
- Ha, Huy Thanh (ed.) (2000) *Nhung Tac Dong Tieu Cuc Cua Co Che Kinh Te Thi Truong O Viet Nam* [Negative Impacts of Market Mechanism in Vietnam]. Hanoi: NXB Khoa Hoc Xa Hoi.
- Ha, Van Dao (1989) 'Chinh Sach Thue Nong Nghiep Voi Giai Cap Nong Dan Viet Nam Trong Hon 30 Nam Va Nhung Van De Can Doi Moi' [Agricultural Tax Policy Against Vietnam's Peasant Class for More than 30 Years and Issues for Reform], *Tap chi Thong tin Ly luan* 12: 71-6. Hanoi.
- Ha, Van Dao (1990) 'Nhung Van De Can Dat Ra Khi Xay Dung Chinh Sach Thue Nong Nghiep Doi Voi Giai Cap Nong Dan' [Needed Issues of Setting Agricultural Tax Policy Against the Peasant Class], *Tap chi Thong tin Ly luan* 12: 34-6. Hanoi.
- Haddad, L. (1994) 'The World Bank and the Process of Transition in Eastern Europe: Lessons for China and Vietnam,' *Journal of Contemporary Asia* 24(4): 441-58.
- Hai Anh (1986) 'Socialist Transformation of Agriculture in Nam Bo,' *Vietnamese Studies* 82: 178-80. Hanoi.
- Harris, D.J. (1972) 'Economic Growth with Limited Import Capacity,' *Economic Development and Cultural Change* 20(3): 524-8.
- Harrison, M. (1985) 'Primary Accumulation in the Soviet Transition,' *The Journal of Development Study* 22(1): 81-103.
- Hart, G. (1996) 'The Agrarian Question and Industrial Dispersal in South Africa: Agro-Industrial Linkages Through Asian Lenses,' *Journal of Peasant Studies* 23(2/3): 245-77.
- Harvie, C. and Van Hoa, Tran (1997) *Vietnam's Reform and Economic Growth*. London: Macmillan.
- Haughton, D. et al. (eds.) (1999) *Ho Gia Dinh Viet Nam Nhin Qua Phan Tich Dinh Luong* [Vietnam's Households: A Quantitative Analysis]. Hanoi: NXB Chính Trị Quốc Gia.
- Haughton, D., J. Haughton and Phong, Nguyen (2001) *Living Standards During an Economic Boom. The Case of Vietnam*. Hanoi: UNDP/GSO.

- Hayami, Y. (1994) 'Strategies for the Reform of Land Policy Relations,' in R. Barker (ed.), *Agricultural Policy Analysis for Transition to a Market-Oriented Economy in Vietnam*. Rome: FAO.
- Hayami, Y. and V.W. Ruttan (1971) *Agricultural Development: An International Perspective*. Baltimore/London: Johns Hopkins Press.
- Helleiner, G.K. (1987) 'Stabilization, Adjustment, and the Poor,' *World Development* 15(12): 1499-1513.
- Hemlin, M., B. Ramamurthy and P. Ronnas (1998) 'The Anatomy and Dynamics of Small Scale Private Manufacturing in Vietnam,' SSE Working Paper. Stockholm: Stockholm School of Economics.
- Hiebert, M. (1995) *Vietnam Notebook*. Hongkong: FarEastern Economic Review/Review Publishing Company Limited.
- Hirschman, A.O. (1958) *The Strategy of Economic Development*. New Haven: Yale University Press.
- Hoang, Binh *et al.* (1990) *Thuc Trạng Quan Hệ Sản Xuất Và Lực Lượng Sản Xuất Ở Việt Nam Hiện Nay* [Real State of Production Relation and Production Force in Vietnam at Present]. Hanoi: Vien Triet Hoc.
- Hoang, Dinh Cau (1972) 'The Rural Health Network in the DRVN [Democratic Republics of Vietnam],' *Vietnamese Studies* 34: 5-8. Hanoi.
- Hoang, Le (ed.) (1986) *Có Cấu Cong – Nông Nghiệp Hợp Lý* [Optimal Structure of Industry – Agriculture]. Hanoi: NXB Thông Tin Lý Luận.
- Hoang, Ngoc Nguyen (1991) 'Economic Renovation in Southern Vietnam: Challenges – Responses – Prospects,' in D. Forbes, D., T.H. Hull, T.H., D.G. Marr, D.G., and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 4: 34-45. Canberra: Australian National University.
- Hoang, Nguyen (1985) 'Vietnam and Southeast Asia,' *Vietnamese Studies* 79: 5-32. Hanoi.
- Hoang, Viet (1995) 'Orientation and Major Solutions for Developing Household Economy in the Vietnam Countryside,' The Development Strategy Institute Working Paper. Hanoi: The Development Strategy Institute/Vietnam's State Planning Committee.
- Hong Vinh (ed.) (1998) *Cong Nghiệp Hóa, Hiện Đại Hóa Nông Nghiệp, Nông Thôn: Một Số Vấn Đề Lý Luận Và Thực Tiễn* [Industrialization, Modernization in Agricultural and Rural Sector: Theoretical and Empirical Problems]. Hanoi: NXB Chính Trị Quốc Gia.
- Hornby, J.M. (1968) 'Investment and Trade Policy in the Dual Economy,' *The Economic Journal* 78(309): 96-107.
- Huges, J.R.T. (1959) 'Balanced Economic Growth in History: A Critique – Foreign Trade and Balanced Growth: The Historical Framework,' *The American Economic Review* 49(2): 330-7.
- Huu Tho (1985) *Một Số Vấn Đề Nông Nghiệp Những Năm 80* [Agrarian Issues in the 80s]. Hanoi: NXB Su That.
- IEA (International Economic Association) (1988) *The Balance Between Industry and Agriculture in Economic Development* (Proceedings of the Eighth World Congress of the International Economic Association), Vol. 1-5. London: IEA/Macmillan.
- IFAD (1995) 'Socialist Republic of Vietnam: Grassroots Financial Project,' The IFAD Preparation Report. Hanoi: IFAD
- IFPRI (International Food Policy Research Institute) (1996) *Rice Market Monitoring and Policy Option Study*. Washington: IFPRI.
- ILO (1994) 'Population and Employment Generation of the Rural Sector in Vietnam,' ILO Draft Report. Geneva: ILO.
- ILO/ARTEP (1992) *Small Enterprises in Vietnam*. Geneva: ILO
- IMF (1979) *Socialist Republic of Vietnam – Recent Economic Development*. Washington: IMF.

- IMF (1995a) *Vietnam - Background Papers*. Washington: IMF.
- IMF (1995b) *Vietnam – Statistical Tables*. Washington: IMF.
- IMF (1996) *Vietnam - Selected Issues*. Washington: IMF.
- IMF (1998) *Vietnam: Selected Issues*. Washington: IMF.
- IMF (1999a) *Vietnam: Selected Issues*. Washington: IMF.
- IMF (1999b) *Vietnam: Statistical Appendix*. Washington: IMF.
- IMF (2000) *Vietnam: Statistical Appendix and Background Notes*. Washington: IMF.
- IMF (2002) *Vietnam: Selected Issues and Statistical Appendix*. Washington: IMF.
- Irvin, G. (1995) 'Assessing the Achievements of Doi Moi,' *Journal of Development Studies* 31(5): 725-50.
- Irvin, G. (1995a) 'Vietnam: Market Transition and Poverty,' ISS Working Paper. The Hague: Institute of Social Studies.
- Irvin, G. (1995b) 'Vietnam: Adjustment, Growth and Rice,' ISS Working Paper. The Hague: Institute of Social Studies.
- Ishikawa, S. (1967) *Economic Development in Asian Perspective*. Tokyo: Kinokuniya Co.
- Ishikawa, S. (1988) 'Patterns and Processes of Intersectoral Resource Flows: Comparison of Cases in Asia,' in G. Ranis and T.P. Schultz (eds.), *The State of Development Economics: Progress and Perspectives*. Oxford/New York: Basil Blackwell.
- Ishikawa, S. (1988) 'Problems of Late Industrialisation: An Asian Perspective,' in K. Arrow (ed.), *The Balance between Industry and Agriculture in Economic Development* [Proceedings of the Eighth World Congress of the International Economic Association, Delhi, India], Volume 1: Basic Issues. London: IEA/Macmillan.
- Islam, N. (1974) *Agricultural Policy in Developing Countries* [Proceedings of a Conference held by the International Economic Association at Bad Godesberg, West Germany, 1972]. London: Macmillan.
- Jamal, V. and K. Jansen (1998) 'Agrarian Transition in Vietnam,' ILO Working Paper. Geneva: ILO.
- Jerneck, A. (1992) *Structural Adjustment – A Development Strategy for Vietnam? A Methodological Critique of Five International Aid Organizations' Investigations of Doi Moi and Vietnam's Development Prospects*. Lund: Department of Economic History/Lund University.
- Johnston, B.F. and J.W. Mellor (1961) 'The Role of Agriculture in Economic Development,' *American Economic Review* 51(4): 566-93.
- Johnston, B.F. and P. Kilby (1975) *Agricultural and Structural Transformation: Economic Strategies in Late-Developing Countries*. Oxford: Oxford University Press.
- Jorgenson, D.W. (1961) 'The Development of a Dual Economy,' *Economic Journal* 71(2): 309-34.
- Jorgenson, D.W. (1967) 'Surplus Agricultural Labor and the Development of a Dual Economy,' *Oxford Economic Papers* 19(3): 288-312.
- Jorgenson, D.W. (1970) 'The Role of Agriculture in Economic Development: Classical versus Neoclassical Models of Growth,' in C.R. Wharton (ed.), *Subsistence Agriculture and Economic Development*. London: Frank Cass.
- Kaldor, N. (1960) *Essays on Economic Growth and Stability*. London: Duckworth.
- Kaldor, N. (1960) *Essays on Value and Distribution*. London: Duckworth.
- Kaldor, N. (1978) *Further Essays on Economic Theory*, Ch. 8-9. London: Duckworth.
- Kaldor, N. (1996) *Causes of Growth and Stagnation in the World Economy*. Cambridge/New York: Cambridge University Press.
- Kalecki, M. (1976) *Essays on Developing Economies*. Brighton: The Harvester Press/Humanities Press.
- Kanbur, S.M.R. (1987) 'Structural Adjustment, Macroeconomic Adjustment and Poverty: A Methodology for Analysis,' *World Development* 15(12): 1515-26.

- Karshenas, M. (1990) *Oil, State and Industrialization in Iran*. Cambridge/New York: Cambridge University Press.
- Karshenas, M. (1993) 'Intersectoral Resource Flows and Development: Lessons of Past Experience,' in A. Sigh and H. Tabatabai (eds.), *Economic Crisis and the Third World Agriculture*. Cambridge/New York: Cambridge University Press.
- Karshenas, M. (1995) *Industrialization and Agricultural Surplus: A Comparative Study of Economic Development in Asia*. Oxford/New York: Oxford University Press.
- Karshenas, M. (1996) 'Dynamic Economies and the Critique of Urban Bias,' *Journal of Peasant Studies* 24(1/2): 60-102.
- Karshenas, M. (1998) 'Capital Accumulation and Agricultural Surplus in Sub-Saharan Africa and Asia,' paper prepared for the project African Development in a Comparative Perspective. Geneva: UNCTAD.
- Kay, C. (2001) 'Asia's and Latin America's Development in Comparative Perspective: Landlords, Peasants and Industrialization,' ISS Working Paper. The Hague: Institute of Social Studies.
- Kelley, A.C. et al. (1972) *Dualistic Economic Development: Theory and History*. Chicago: The University of Chicago Press.
- Kerckvliet, B.J.K. et al. (2000) *Mot So Van De Ve Nong Nghiep - Nong Dan - Nong Thon O Cac Nuoc Va Viet Nam* [Issues on Agriculture – Peasantry – Rural in Vietnam and Other Countries]. Hanoi: NXB The Gioi.
- Khong, Doan Hoi et al. (1986) *Doi Moi Tu Duy Kinh Te* [Renovating Economic Thinking]. Ho Chi Minh City: NXB TP. Ho Chi Minh.
- Klintworth, G. (1991) 'Vietnam: Forces of Change,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 16: 215-233. Canberra: Australian National University.
- Kokko, A. (1997) 'Vietnam 1997 – Managing the Transition to Free Trade: Vietnamese Trade Policy for the 21st Century,' SIDA Macroeconomic Report. Stockholm: SIDA.
- Kokko, A. (1998) 'Vietnam – Ready for Doi Moi II?,' SSE/EFI Working Paper. Stockholm: Stockholm School of Economics.
- Kokko, A. and M. Zejan (1996) 'Vietnam – Approaching the Next Stage of Reforms,' SIDA Macroeconomic Report. Stockholm: SIDA.
- Kolko, G. (1995) 'Vietnam Since 1975: Winning the War and Losing the Peace,' *Journal of Contemporary Asia* 25(1): 3-49.
- Krueger, A.O., M. Schiff and A. Valdes (eds.) (1991) *The Political Economy of Agricultural Pricing Policy*, Vol. 4-5. Washington: World Bank.
- Lam, My Yen (1993) *A Review of Food Research in Vietnam, with Emphasis on Postharvest Losses*. Canberra: Australian Center for International Agricultural Research.
- Lang, T.T. (1985) 'Economic Debates in Vietnam: Issues and Problems in Reconstruction and Development (1975-84),' ISAS Discussion Paper. Singapore: Institute of Southeast Asian Studies.
- Laquian, A.A. (1996) 'China and Vietnam: Urban Strategies in Societies in Transition,' *TWPR* 18(1): 3-12.
- Le, Ba Thang (1996) 'Quan Ly Khai Thac Vuon Cay Lau Nam Trong Cac Doanh Nghiep Nong Nghiep Nha Nuoc' [Managing the Utilization of Perennial Crops in State Farms], *Tạp Chí Thông Tin Lý Luận* 8: 21-3. Hanoi.
- Le, Dang Doanh (1991) 'Economic Renovation in Vietnam: Achievements and Prospects,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 8: 79-94. Canberra: Australian National University.
- Le, Dang Doanh (1992) '1991: The Vietnamese Economy Facing Difficulties,' *Vietnamese Studies* 103: 99-102. Hanoi.

- Le, Dang Doanh (1999) 'Ten Year of Doi Moi: Where is Vietnam's Economy,' *Vietnamese Studies* 2: 5-42. Hanoi.
- Le, Dang Doanh and A. McCarty (1995) 'Economic Reform in Vietnam: Achievements and Prospects,' in J.L.H. Tan and S.J. Naya (eds.), *Asian Transition Economies. Challenges and Prospects for Reform and Transformation*, pp. 99-153. Singapore: Institute of Southeast Asian Studies.
- Le, Duan and Pham, Van Dong (1974) *Ve To Chuc Lai San Xuat Va Cai Tien Quan Ly Nong Nghiep Theo Huong San Xuat Lon Xa Hoi Chu Nghia* [Of Reorganizing Production and Reforming Management in Agriculture towards Large-Scale Socialist Production]. Hanoi: NXB Su That.
- Le, Huu Xanh (1999) *Tam Ly Nong Dan Dong Bang Bac Bo Trong Qua Trinh Cong Nghiep Hoa, Hien Dai Hoa Nong Nghiep, Nong Thon Hien Nay* [Psychology of the Peasant in Red River Delta during the Process of Industrialization, Modernization within the Rural and Agricultural Sector at Present]. Hanoi: NXB Chinh Tri Quoc Gia.
- Le, Manh Hung (ed.) (1999) *Kinh Te – Xa Hoi Viet Nam 3 Nam 1996-1998 Va Du Bao Nam 2000* [Vietnam's Socio-Economy during 3 Years 1996-98 and Forecasting for the Year 2000]. Hanoi: NXB Thong Ke.
- Le, Nguyen Hop (1991) 'Cac Khoan Dong Gop Ngoai Thue Va Thue Nong Nghiep Tren Cac Dien Tich Gian Tiep' [Non-Tax Fees and Agricultural Tax on Area of Sub-Production], *Tap chi Thong tin Ly Luan* 7: 26-7. Hanoi.
- Le, Van Toan (ed.) (1992) *Vietnam Economy 1986-1991: Based on the System of National Account*. Hanoi: Statistical Publishing House.
- Le, Van Toan et al. (1991) *Nhung Van De Kinh Te Va Doi Song qua Ba Cuoc Dien Tra Nong Nghiep, Cong Nghiep, Nha O* [Economic and Living Standard Issues through Three Surveys on Agriculture, Industry and Housing]. Hanoi: NXB Thong Ke.
- Le, Viet Duc (1999) 'Vietnam's Industry: 15 Years of Innovation,' *Vietnamese Studies*, No. 2: 112-25, Hanoi.
- Le, Xuan Tung (1985) *Cong Nghiep Hoa Xa Hoi Chu Nghia Trong Chang Duong Dau Tien Cua Thoi Ky Qua Do* [Socialist Industrialization in the First Phase of the Transition]. Hanoi: NXB Su That.
- Lee, T.H. (1971) *Intersectoral Capital Flows in the Economic Development of Taiwan, 1895-1960*. Ithaca/London: Cornell University Press.
- Lele, U. and J.W. Mellor (1981) 'Technological Change, Distributive Bias and Labor Transfer in a Two sector Economy,' *Oxford Economic Papers* 33(3): 426-41.
- Leung, S. (ed.) (1999) *Vietnam and the East Asian Crisis*. Cheltenham/Northampton MA: Edward Elgar.
- Lewis, W.A. (1954) 'Economic Development with Unlimited Supplies of Labor,' *The Manchester School of Economic and Social Studies* 22(2): 139-91.
- Lipton, M. (1992) 'Why Poor People Stay Poor,' in J. Harris (ed.), *Rural Development*. London/New York: Routledge.
- Ljunggren, B. (1994) 'Economic Reform and Markets under the Communist Regime in Indochina,' in B. Ljunggren (ed.), *The Challenge of Reform in Indochina*. Cambridge, MA: Harvard Institute of International Development.
- Luu, Bich Ho and Quang Thuy, Khuc (1995) 'Development of the Rural Economy and Economic Reform,' *Vietnam's Socio-Economic Development* 3. Hanoi: Institute of Economics.
- Macrae, J.T. (1979) 'A Clarification of Chinese Development Strategy since 1949,' *The Developing Economies* 17(2): 266-94.
- MAFPI (Ministry of Agriculture and Food Processing Industry) (1993) *Doanh Nghiep Nong Nghiep Nha Nuoc Tren Duong Doi Moi* [Agricultural State-Owned Enterprises on the Way of Renovation]. Hanoi: NXB Nong Nghiep.

- Mahalanobis, P.C. (1953) 'Some Observations on the Process of Growth of National Income,' *Sankhyā, The Indian Journal of Statistics* 12(4): 307-12.
- Mallon, R. and G. Irvin (1997) 'Is the Vietnamese Miracle in Trouble?,' ISS Working Paper. The Hague: Institute of Social Studies.
- MARD (Ministry of Agriculture and Rural Development) (1997) *Workshop on Agricultural and Rural Development Strategies for Vietnam*. Hanoi: Agricultural Publishing House.
- MARD (2002) *Canh Keo Gia Ca va Chinh Sach Gia Nong Nghiep* [Terms of Trade and Agricultural Price Policy]. Hanoi: MARD.
- Marr, D. (1991) 'Where Is Vietnam Coming From?,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 2: 12-20. Canberra: Australian National University.
- Martin, K. (1991) 'Modern Development Theory,' in K. Martin (ed.), *Strategies of Economic Development. Readings in the Political Economy of Industrialization*. London: Macmillan/ISS.
- Mathieson, D.J. (1980) 'Financial Reform and Stabilization Policy in a Developing Economy,' *Journal of Development Economics* 7(3): 359-95.
- Mazumdar, D. (1976) 'The Rural-Urban Wage Gap, Migration and the Shadow Wage,' *Oxford Economic Papers* 28(3): 406-25.
- McCarty, A. (1991) 'The Vietnamese Economy: Statistical Difficulties,' in A. McCarty *et al.* (eds.), *Vietnam Data Bank 1976-1991*. Canberra: Australian National University.
- McCarty, A. (1999) 'Vietnam's Integration with ASEAN: Survey of Non-tariff Measures Affecting Trade,' UNDP Report. Hanoi: United Nations Development Program.
- McGee, T. (1995) 'The Urban Future of Vietnam,' *Town Planning Research* 17(3): 253-78.
- McIntosh, J. (1974) 'Growth and Dualism in Less Developed Countries,' *Review of Economic Studies* 42(3): 421-33.
- Mellor, J.W. (1973) 'Accelerated Growth in Agricultural Production and the Intersectoral Transfer of Resources,' *Economic Development and Cultural Change* 22(1): 1-16.
- Mellor, J.W. (1974) 'Models of Economic Growth and Land-Augmenting Technological Change in Foodgrain Production,' in N. Islam (ed.), *Agricultural Policy in Developing Countries* (Proceedings of the Conference held by the International Economic Association at Bad Godesberg, West Germany, 1972), pp. 3-40. London: Macmillan.
- Mellor, J.W. (1986) 'Agriculture on the Road to Industrialization,' in J.P. Lewis and V. Kallab (eds.), *Development Strategies Reconsidered*. London: Overseas Development Council.
- Mellor, J.W. (1994) 'An Agriculture-Led Strategy for the Economic Transformation of Vietnam: Project and Policy Priorities,' FAO Mission Paper. Hanoi: State Planning Committee of Vietnam/FAO/UN.
- Mellor, J.W. (ed.) (1995) *Agriculture on the Road to Industrialization*. Baltimore/London: IFPRI/John Hopkins University Press.
- Mikesell, R.F. and J.E. Zinser (1973) 'The Nature of Saving Function in Developing Countries: A Survey of the Theoretical and Empirical Literature,' *The Journal of Economic Literature* 11(1): 1-26.
- Minot, N. (1998) 'Competitiveness of Food Processing in Vietnam: A Study of the Rice, Coffee, Seafood, and Fruit and Vegetables Subsectors,' UNIDO Report. Hanoi: MPI/UNIDO.
- Minot, N. (2000) 'Generating Disaggregated Poverty Maps: An Application to Vietnam,' *World Development* 28(2): 319-31.

- Mitra, A. (1977) *Terms of Trade and Class Relations. An Essay in Political Economy*. London: Frank Cass.
- Mody, A. (1981) 'Resource Flows between Agriculture and Non-Agriculture in India, 1950-1970,' *Economic and Political Weekly* 16: 789-824.
- Montes, M.F. (1997) 'Vietnam: Transition as a Socialist Project in East Asia,' UNU/WIDER Working Paper. Helsinki: UNU/WIDER.
- Morrison, C. and E. Thorbecke (1990) 'The Concept of the Agricultural Surplus,' *World Development* 18(8): 1081-1095.
- MPI (Ministry of Planning and Investment) (1996) *Trien Vong Kinh Te Viet Nam Nhung Nam Cuoi The Ky 20 Va Dau The Ky 21* [Prospect of Vietnam's Economy in the End of 20th Century and in the Early of 21st Century]. Hanoi: MPI.
- Mundle, S. (1983) 'Labor Absorption in Agriculture and Restricted Market for Manufacturing Industry: An Aspect of Long-Term Consequences of Colonial Policy in Asia,' *Economic and Political Weekly* 18(19-21): 767-78.
- Mundle, S. (1985) 'The Agrarian Barrier to Industrial Growth,' *Journal of Development Studies* 22(1): 49-80.
- Mundle, S. and K. Ohkawa (1979) 'Agricultural Surplus Flow in Japan, 1888-1937,' *The Developing Economies* 17(3): 247-65.
- Murray, G. (1997) *Vietnam: Dawn of a New Market*, Richmond/Surrey: China Library/Curzon Press.
- Myint, H. (1985) 'Organizational Dualism,' *Asian Development Review* 3(1): 24-42.
- Myint, H. (1988) 'Comments on 'Patterns and Processes of Intersectoral Resource Flows: Comparison of Cases in Asia,' in G. Ranis and T.P. Schultz (eds.), *The State of Development Economics: Progress and Perspectives*. Oxford/New York: Basil Blackwell.
- n.a. (1971) 'Constitution of High-level Co-operative Farms,' *Vietnamese Studies* 27: 253-86. Hanoi.
- n.a. (1985) 'Land Utilization in Vietnam,' *Vietnamese Studies* 79: 112-15. Hanoi.
- n.a. (1985) 'Nutritional Problems in Vietnam – Present and Future,' *Vietnamese Studies* 79: 77-81. Hanoi.
- n.a. (1987) *Vietnam – In Face of Today's Socio-Economic Problems*. Hanoi: Foreign Languages Publishing House.
- n.a. (1990) 'Glimpse of Vietnam's Economy,' *Vietnamese Studies* 98: 5-20. Hanoi.
- Nakagane, K. (1989) 'Intersectoral Resource Flows in China Revisited: Who Provided Industrialization Funds?,' *The Developing Economies* 27(2): 146-73.
- NCSSH (National Center of Social Sciences and Humanity)/IWE (Institute of World Economy) (1995) *Doi Moi Kinh Te Viet Nam Va Chinh Sach Kinh Te Doi Ngoai* [Vietnam's Economic Renovation and External Economic Policy]. Hanoi: NXB Khoa Hoc Xa Hoi.
- NCSSH/IWE (1996) *Cong Nghiep Hoa, Hien Dai Hoa Viet Nam Den Nam 2000* [Vietnam's Industrialization, Modernization Towards the Year 2000]. Hanoi: NXB Khoa Hoc Xa Hoi.
- Ngo, Thi Men (1995) 'Vietnamese Agriculture in a Centrally Planned Economy and in the Transition to a Market Economy,' ISS Working Paper. The Hague: Institute of Social Studies.
- Ngo, Vinh Long (1993) 'Reform and Rural Development: Impact on Class, Sectoral, and Regional Inequalities,' in W.S. Turley and M. Selden (eds.), *Reinventing Vietnamese Socialism*. Boulder/San Francisco/Oxford: Westview Press.
- Nguyen, Cong Binh et al. (1995) *Dong Bang Song Cuu Long – Nghien Cuu Phat Trien* [Mekong River Delta – Development Studies]. Hanoi: NXB Khoa Hoc Xa Hoi.
- Nguyen, Dinh Huong (ed.) (1999) *San Xuat Va Doi Song Cua Cac Ho Nong Dan Khong Co Dat Hoac Thien Dat O Dong Bang Song Cuu Long: Thuc Trang Va Giai Phap* [Production

- and Livelihood of Landless Peasant Households in the Mekong Delta: Real Situation and Solution]. Hanoi: NXB Chinh Tri Quoc Gia.
- Nguyen, Dinh Huong (ed.) (2000) *Thuc Trang Va Giai Phap Phat Trien Kinh Te Trang Trai Trong Thoi Ky Cong Nghiep Hoa, Hien Dai Hoa O Viet Nam* [Real Situation and Solution for the Development of Farm Economy during the Process of Industrialization, Modernization in Vietnam]. Hanoi: NXB Chinh Tri Quoc Gia.
- Nguyen, Dinh Tai (1997) *Su Dung Cong Cu Tai Chinh – Tien Te De Huy Dong Von Cho Dau Tu Phat Trien* [Utilizing financial – Monetary Instruments to Mobilize Capital for Development Investment]. Hanoi: NXB Tai Chinh.
- Nguyen, Do Anh Tuan (2002) 'Land Use and Agricultural Commercialization. The Case of Namdinh Province (Vietnam),' paper presented in the 9th Biennial Conference of the International Association for the Study of Common Property held in Victoria Falls, Zimbabwe (17-21 June).
- Nguyen, Huu Dao (1987) 'The Vietnamese Working Class in the 1945-85 Period,' *Vietnamese Studies* 86: 5-26. Hanoi.
- Nguyen, Huy (1987) 'Bao Dam Cho Nong Nghiep Thuc Su La Mat Tran Hang Dau, Dua Nong Nghiep Mot Buoc Tien Theo Huong San Xuat Lon XHCN' [Assuring Agriculture to Be a Truly First Front and Moving Agriculture towards the Direction of Socialist Large-Scale Production], *Tap chi Nghien cuu Kinh te* 1: 40-9. Hanoi.
- Nguyen, Khac Vien (1980) 'An Uneasy but Irreversible Development,' *Vietnamese Studies* 58: 5-36. Hanoi.
- Nguyen, Khac Vien (1988) *Doi Moi* [Renovation]. Hanoi: NXB Thanh Nien.
- Nguyen, Khac Vien (1989) *Ban Va Luan* [Discuss and Argue]. Danang: NXB Da Nang.
- Nguyen, Khac Vien and Dien, Le (1990) *15 Nam Ay 1975-1990* [Such 15 Years 1975-90]. HoChiMinh City: NXB TP. Ho Chi Minh.
- Nguyen, Minh Phong (ed., 2000) *Ly Thuyet Lam Phat, Giam Phat Va Thuc Tien O Viet Nam* [Theories on Inflation, Deflation and Real Situation in Vietnam]. Hanoi: NXB Chinh Tri Quoc Gia.
- Nguyen, Ngo Hao and Ngoc Due, Pham (1997) 'Viec Sua Doi, Bo Sung Luat Dat Dai Gan Voi Chien Luoc Giao Dat Nong Nghiep, Dat Lam Nghiep' [Amendment of and Addition to the Land Law, in the Relation to Strategy of Transferring Agricultural and Forestry Land], MARD Report. Hanoi: MARD.
- Nguyen, Ngoc Que and F. Goletti (2001) 'Explaining Agricultural Growth in Vietnam,' Project Background Paper [prepared for ADB Technical Assistance Project 3223-VIE]. Hanoi: ADB.
- Nguyen, Sinh Cuc (1991) *Thuc Trang Nong Nghiep, Nong Thon va Nong Dan Viet Nam 1976-1990* [Real Situation in Agriculture, Rural, and the Peasantry in Vietnam 1976-90]. Hanoi: NXB Thong Ke.
- Nguyen, Sinh Cuc (1992a) 'Quoc Doanh Nong Nghiep Sau Nghi Quyet 10 – Nhung Nhan To Moi Va Nhung Van De Moi Nay Sinh' [Agricultural State-Owned Enterprises after Resolution 10 – New Factors and Rising Problems], *Tap chi Thong tin Ly luan* 4: 11-3, 16. Hanoi.
- Nguyen, Sinh Cuc (1992b) 'Thuc Trang Co Cau Kinh Te Nong Thon Sau 5 Nam Thuc Hien Nghi Quyet 10 (1988-1992)' [Real State of Rural Economic Structure after 5 Years of the Implementation of Resolution No. 10], *Tap Chi Thong Tin Kinh Te Va Du Bao* 5: 16-7. Hanoi.
- Nguyen, Sinh Cuc (1993) 'Thuc Trang Suc San Xuat O Nong Thon Sau Nghi Quyet 10' [Real Situation of Production Force in Rural Sector after the Promulgation of Resolution No. 10], *Tap Chi Thong Tin Kinh Te Ke Hoach* 5: 30-2, 34. Hanoi.
- Nguyen, Sinh Cuc (1995) *Agriculture of Vietnam: 1945-1995*. Hanoi: Statistical Publishing House.

- Nguyen, Sinh Cuc (2000) 'Thu Tim Giai Phap Phat Trien Nong Nghiep, Nong Thon 10 Nam Toi (2001-10)' [Trying Solutions for Agricultural and Rural Development in the Next 10 Years (2001-10)], *Tap Chi Thong Tin Ly Luan* 271(9): 31-5. Hanoi.
- Nguyen, Sinh Cuc and Van Tiem, Nguyen (1996) *Dau Tu Nong Nghiep: Thuc Trang va Trien Vong* [Agricultural Investment: Real Situation and Perspectives]. Hanoi: NXB Chinh Tri Quoc Gia.
- Nguyen, Van Bich and Tien Quang, Chu (1996) *Chinh Sach Kinh Te va Vai Tro Cua No Doi Voi Phat Trien Kinh Te Nong Nghiep, Nong Thon Viet Nam* [Economic Policies and Their Roles towards the Development of Vietnam's Agriculture and Rural Areas]. Hanoi: NXB Chinh Tri Quoc Gia.
- Nguyen, Van Lang (1993) 'Su Thay Doi Ve To Chuc Dich Vu Tuoi Tieu Trong Co Che Khoan 10' [Changes of Irrigation Service Organization under the Mechanism of Contract No. 10], *Tap Chi Kinh Te Va Du Bao* 7: 10-1. Hanoi.
- Nguyen, Van Linh (1986) 'Ho Chi Minh City: Economic Problems and Prospects,' *Vietnamese Studies* 82: 29-46. Hanoi.
- Nguyen, Van Linh (1987) *May Van De Ve Phan Phoi Lau Thong* [Urgent Problems on Trade and Circulation]. Hanoi: NXB Su That.
- Nguyen, Van Linh (1989) *Doi Moi De Tien Len* [Reform to Be Better], Vol. 2. Hanoi: NXB Su That.
- Nguyen, Van Quy (1997) 'Uses of Macroeconomic Models in Monitoring the Impact of Economic Reform Undertaken in Vietnam: Forecasting and Policy Simulation,' in *Modelling and Simulation of Macroeconomic Systems: Use of Quantitative Models for Analysing Macroeconomic Reform Policies with Applications to China, India and Vietnam*, pp. 64-96. Hanoi: UN.
- Nguyen, Xuan Lai (1971) 'Interdependence between Agriculture and Industry,' *Vietnamese Studies* 27: 123-78. Hanoi.
- Nguyen, Xuan Lai (1980) 'Economic Problems,' *Vietnamese Studies* 58: 37-67. Hanoi.
- Nguyen, Xuan Lai (ed.) (1977) 'Drawing up Work Norms,' *Vietnamese Studies* 51: 96-121. Hanoi.
- Nguyen, Xuan Lai (ed.) (1977) 'Organization of Work,' *Vietnamese Studies* 51: 76-95. Hanoi.
- Nguyen, Xuan Lai (ed.) (1977) 'Orientation of Production,' *Vietnamese Studies* 51: 44-75. Hanoi.
- Nguyen, Xuan Lai (ed.) (1977) 'Payment of Co-Op Members' Work,' *Vietnamese Studies* 51: 127-32. Hanoi.
- Nguyen, Xuan Lai (ed.) (1977) 'Resolution of the 2nd Plenum (Fourth Congress) of the Central Committee of CPVN on Agricultural Development,' *Vietnamese Studies* 51: 7-43. Hanoi.
- Nguyen, Xuan Lai (ed.) (1977) 'The Three-Point Contract System,' *Vietnamese Studies* 51: 133-62. Hanoi.
- Nhan Dao (1993) 'Giai Phap Cap Thiet Hoan Thien Co Che 'Khoan 10' Phat Trien Kinh Te Nong Ho' [Urgent Solution to Perfect Mechanism of 'Contract No. 10' in Order to Develop Peasant Household Economy], *Tap Chi Kinh Te Ke Hoach* 1: 23-5. Hanoi.
- Nielsen, C.P. (2002) 'Social Accounting Matrices for Vietnam 1996 and 1997,' IFPRI Discussion Paper. Washington: IFPRI.
- Norlun, I., C.L. Gates and Cao Dam, Vu (1996) *Vietnam in a Changing World*. Surrey: Curzon Press.
- Nurkse, R. (1953) *Problems of Capital Formation in Underdeveloped Countries*. New York: Basil Blackwell.

- Nurkse, R. (1961) *Equilibrium and Growth in the World Economy, Economic Essays by Ragnar Nurkse*, edited by G. Haberler and R.M. Stern. Cambridge, MA: Harvard University Press.
- O'Connor, D. (1996) 'Labor Market Aspects of State Enterprise Reform in Vietnam,' OECD Technical Paper. Paris: OECD.
- O'Connor, D. (1998) 'Rural Industrial Development in Vietnam and China: A Study in Contrasts,' OECD Technical Paper. Paris: OECD.
- OECD (1996) *Fiscal and Financial Reforms in Vietnam*. Hanoi: OECF.
- Ohkawa, K. and H. Rosovsky (1960) 'The Role of Agriculture and Modern Japanese Economic Development,' *Economic Development and Cultural Change* 9(1): 43-67.
- Ohlin, G. (1959) 'Balanced Economic Growth in History,' *The American Economic Review* 49(2): 338-58.
- OVG (Office of the Vietnamese Government) (1993) 'Vietnam: A Development Perspectives,' Government Report. Hanoi: Office of the Vietnamese Government.
- OVG, MPI, UNDP and World Bank (1996) 'Senior Policy Seminar on Industrialization and Integration: Vietnam and the World Economy,' OVG Seminar Report. Hanoi: OVG.
- Patnaik, S.C. (1981) *Economics of Regional Development and Planning in Third World Countries*, Ch. 1: 1-15. Delhi: Associated Publishing House.
- Pham, Bich San (1991) 'Vietnam's Fertility Problems: A Sociological View,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 13: 175-79. Canberra: Australian National University.
- Pham, Quoc Doanh (1993) 'Cac Hinh Thuc Khoan Trong Nong Truong Quoc Doanh Tu Sau Nghi Quyet 10' [Forms of Contract in State Farms after Resolution No. 10], *Tap Chi Lao dong Va Xa Hoi* 10: 19-21. Hanoi.
- Pham, Xuan Nam et al. (1999) *Rural Development in Vietnam*. Hanoi: Social Sciences Publishing House.
- Phan, Van Tiem (1990) 'Co Che va Chinh Sach Gia Qua Cac Thoi Ky' [Pricing Mechanism and Policy over Different Periods], in Dao Van Tap (ed.), *45 Nam Kinh Te Viet Nam (1945-1990)* [45 Years of Vietnam's Economy]. Hanoi: NXB Thong Ke.
- Phan, Van Tiem (1991) *Chang Duong 10 Nam Cai Cach Gia 1981-1991* [10 Year Period of Price Reform 1981-91]. Hanoi: NXB Thong Tin/Vien Khoa hoc Thi Truong-Gia Ca.
- Pingali, P.L. and Tong Xuan, Vo (1992) 'Vietnam: Decollectivization and Rice Productivity Growth,' *Economic Development and Cultural Change* 40(4): 697-718.
- Ponce, N., P. Gertler and P. Glewwe (1998) 'Will Vietnam Grow Out of Malnutrition?,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 9: 257-76. Washington: World Bank.
- Post, K. and P. Wright (1989) *Socialism and Underdevelopment*. London/New York: Routledge.
- Preobrazhensky, E. (1972) 'Socialist Primitive Accumulation,' in A. Nove and D.M. Nuti (eds.), *Socialist Economics*, Ch. 6: 130-48. London: Penguin Books.
- Rakshit, M. (1983) 'On Assessment and Interpretation of Saving-Investment Estimates in India,' *Economic and Political Weekly* 18(19-21): 753-66.
- Ramamurthy, B. (1998) 'The Private Manufacturing Sector in Vietnam 1991-97: An Analysis of the Deceased,' SSE Working Paper. Stockholm: Stockholm School of Economics.
- Ranis, G. (1970) 'The Financing of Japanese Economic Development,' in K. Ohkawa et al. (eds.), *Agriculture and Economic Growth: Japan's Experience*. New Jersey: Princeton University Press.

- Ranis, G. (1988) 'Analytics of Development: Dualism,' in H.B. Chenery and T.N. Srinivasan (eds.), *Handbook of Development Economics*, Vol. 1: 74-92. Amsterdam: Elsevier Science Publishers.
- Ranis, G. and J.C.H. Fei (1961) 'A Theory of Economic Development,' *American Economic Review* 51(4): 533-65.
- Ranis, G. and J.C.H. Fei (1964) *Development of Labor Surplus Economy: Theory and Policy*. Homewood: Richard D. Irwin.
- Rao, J.M. (1986) 'Agriculture in Recent Development Theory,' *Journal of Development Economics* 22(1): 41-86.
- Rao, J.M. and J.M. Caballero (1990) 'Agriculture Performance and Development Strategy: Retrospect and Prospect,' *World Development* 18(6): 899-913.
- Ravallion, M. and D. van de Walle (2001) 'Breaking up the Collective Farm: Welfare Outcomes of Vietnam's Massive Land Privatization,' World Bank Working Paper. Washington: World Bank.
- Ravallion, M. and D. van de Walle (2003) 'Land Allocation in Vietnam's Agrarian Transition,' World Bank Working Paper. Washington: World Bank.
- Riedel, J. (1993) 'Vietnam: On the Trail of the Tigers,' *The World Economy* 16(4): 401-22.
- Riedel, J. and W.S. Turley (1999) 'The Politics and Economics of Transition to an Open Market Economy in Vietnam,' OECD Technical Paper. Paris: OECD Development Center.
- Robertson, P. and S. Wellisz (1977) 'Steady-State Growth of an Economy with Intersectoral Migration,' *Oxford Economic Papers* 29(3): 370-88.
- Robinson, J. and J. Eatwell (1973) *An Introduction to Modern Economics*. Maidenhead, UK: McGraw Hill.
- Ronnas, P. (1998) 'The Transformation of the Private Manufacturing Sector in Vietnam in the 1990s,' SSE Working Papers. Stockholm: Stockholm School of Economics.
- Ronnas, P. and O. Sjöberg (eds.) (1990) *Doimoi – Economic Reforms and Development Policies in Vietnam* [Papers and Proceedings from an International Symposium in Hanoi, December 12-15, 1989]. Stockholm: SIDA/SSE/CIEM.
- Ronnas, P. and O. Sjöberg (eds.) (1991) *Socio-Economic Development in Vietnam: The Agenda for the 1990s*. Stockholm: SIDA.
- Rosenstein-Rodan, P. (1943) 'Problems of Industrialization in Eastern and South-Eastern Europe,' *The Economic Journal* 53(217): 202-11.
- Sah, R.K. and J.E. Stiglitz (1984) 'The Economics of Price Scissors,' *The American Economic Review* 74(1): 125-38.
- Saith, A. (1983) 'Development and Distribution: A Critique of the Cross-Country U-Hypothesis,' *Journal of Development Economics* 13(3): 367-82.
- Saith, A. (1985) 'Primitive Accumulation, Agrarian Reform and Socialist Transition: An Argument,' in A.Saith (ed.), *The Agrarian Question in Socialist Transition*. London/Totowa: Frank Cass.
- Saith, A. (1990) 'Development Strategies and the Rural Poor,' *Journal of Peasant Studies* 17 (2): 171-204.
- Saith, A. (1991) 'Primitive Accumulation, Agrarian Reform and Socialist Transition: An Argument,' in K. Martin (ed.), *Strategies of Economic Development. Readings in the Political Economy of Industrialization*. London: Macmillan/ISS.
- Saith, A. (1995) 'From Collectives to Markets: Restructured Agriculture-Industry Linkages in Rural China: Some Micro Evidence,' *Journal of Peasant Studies* 22(2): 201-60.
- Sawyer, M.C. (1985) *The Economics of Michael Kalecki*. London: Macmillan.
- Seibel, H.D. (1992) *The Making of a Market Economy: Monetary Reform, Economic Transformation and Rural Finance in Vietnam*. Saarbrücken: Verlag Breitenbach Publisher.

- Selden, M. (1993) 'Agrarian Development Strategies of China and Vietnam,' in W.S. Turley and M. Selden (eds.), *Reinventing Vietnamese Socialism*. Boulder/San Francisco/Oxford: Westview Press.
- Sepehri, A. and A.H. Akram-Lodhi (2002) 'A Crouching Tiger? A Hidden Dragon? Transition, Saving and Growth in Vietnam, 1975-2000,' ISS Working Paper. The Hague: Institute of Social Studies
- Sidel, M. (1999) 'Vietnam in 1998: Reform Confronts the Regional Crisis,' *Asian Survey* 39(1): 89-98.
- SPC (State Planning Committee) (1995) *40 Nam Nhung Chang Duong Ke Hoach* [40 Years of Planning Activities]. Hanoi: SPC.
- SPC/FAO (1991) *Ve Chinh Sach Phat Trien Nong Nghiep O Viet Nam* [Of Policy for Agricultural Development in Vietnam] (Proceedings of the seminar on 'Agricultural Policy Analysis and Planning in Vietnam'). Hanoi: SPC/FAO.
- SPC/GSO (1994) *Vietnam's Living Standard Survey 1992-1993*. Hanoi: Statistical Publishing House.
- Spoor, M. (1988) 'Reforming State Finance in Post-1975 Vietnam,' *The Journal of Development Studies* 24(4): 102-14.
- Spoor, M. (1994) *The State and Domestic Agricultural Markets in Nicaragua: From Interventionism to Neo-Liberalism*. London/New York: St. Martin's Press/ISS.
- SRV (Socialist Republic of Vietnam) (1992) *Constitution 1992*. Hanoi: Foreign Languages Publishing House.
- Staatz, J.M. and K. Eicher (1984) 'Agricultural Development Ideas in Historical Perspective,' in J.M. Staatz and K. Eicher (eds.), *Agricultural Development in the Third World*. Baltimore: Johns Hopkins University Press.
- Stewart, F. (1991) 'Capital Goods in Developing Countries,' in K. Martin (ed.), *Strategies of Economic Development. Readings in the Political Economy of Industrialization*. London: Macmillan/ISS.
- Storm, S. (1992) 'Macroeconomic Considerations in the Choice of an Agricultural Policy: A Study into Sectoral Interdependence with Reference to India,' Ph.D. Thesis. Rotterdam: Erasmus University of Rotterdam.
- Taylor, L. (1983) *Structuralist Macroeconomics. Applicable Models for the Third World*, Ch. 3. New York: Basic Book, Inc., Publishers.
- Taylor, L. (1989) 'Theories of Sectoral Balance,' in IEA, *The Balance Between Industry and Agriculture in Economic Development* (Proceedings of the Eighth World Congress of the International Economic Association) Vol. 2. London: IEA/Macmillan.
- Taylor, L. (1991) *Income Distribution, Inflation, and Growth. Lectures on Structuralist Macroeconomic Theory*, Ch. 9. Cambridge, MA: MIT Press.
- Thalemann, A. (1996) 'Vietnam: Marketing the Economy,' *Journal of Contemporary Asia* 26(3): 322-51.
- Than, M. and J.L.H. Tan (eds.) (1993) *Vietnam's Dilemmas and Options: The Challenge of Economic Transition in the 1990s*. Singapore: Institute of Southeast Asian Studies.
- Thayer, C. (1991) 'Renovation and Vietnamese Society: The Changing Role of Government and Administration,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi - Vietnam's Renovation: Policy and Performance*, Ch. 3: 21-33. Canberra: Australian National University.
- The Dat (1997) *Tien Trinh Doi Moi Quan Ly Nen Kinh Te Quoc Dan Cua Viet Nam* [The Process of Renovating the Management of the National Economy in Vietnam]. Hanoi: NXB Ha Noi.
- The Economist*, November 12th, 1994.
- The Economist*, November 12th, 1994.
- The Economist*, September 25th, 1993.
- The Economist*, September 25th, 1993.

- Thirlwall, A.P. (1978) *Growth and Development*, Ch. 5: 129-42. London: Macmillan.
- Thirlwall, A.P. (1995) *The Economics of Growth and Development: Selected Essays of A.P. Thirlwall*, Ch. 3: 33-54. Cheltenham: Edward Elgar.
- Timmer, C.P. (1990) 'Price Policy for Agricultural Products and Inputs: Comparative Lessons from Asia,' HIID Working Paper. Cambridge, MA: Harvard Institute for International Development.
- Timmer, C.P. (1994) 'Food Policy and Economic Reform in Vietnam,' in B. Ljunggren (ed.), *The Challenge of Reform in Indochina*. Cambridge, MA: Harvard Institute for International Development.
- Timmer, C.P. (ed.) (1991) *Agriculture and the State: Growth, Employment, and Poverty in Developing Countries*. Ithaca, NY: Cornell University Press.
- Timmer, P. (1988) 'The Agricultural Transformation,' in H. Chenery and T.N. Srinivasan (eds.), *Handbook of Development Economics*, Vol. 1. Amsterdam: Elsevier Science Publishers.
- Todaro, M.P. (1969) 'A Model of Labor Migration and Urban Unemployment in Less Developed Countries,' *American Economic Review* 59(1): 138-48.
- Tran, Bach Dang (1990) *But Ky Kinh Te* [Economic Notes], Hanoi: NXB Su That.
- Tran, Dinh Hien (1995) 'Major Issues of Expanding the Rural Market in Vietnam,' Working Paper. Hanoi: The Development Strategy Institute of the Vietnam's State Planning Committee.
- Tran, Du Lich (ed., 1996) *Kinh Te Viet Nam. Giai Doan Kinh Te Chuyen Doi* [Vietnam's Economy. The Economic Transition Period]. HoChiMinh City: NXB TP. Ho Chi Minh/Saigon Times Group/Vaptec.
- Tran, Duc (1983) *Xay Dung Huyen Nong Cong Nghiep Trong Thoi Ky Qua Do* [Building Agriculture – Industry District in the Transition Period]. Hanoi: NXB Nong Nghiep.
- Tran, Duc (1991) *Hop Tac Xa Va Thoi Vang Son Cua Kinh Te Gia Dinh* [Cooperatives and the Golden Age of Household Economy]. Hanoi: NXB Tu Tuong–Van Hoa.
- Tran, Duc (1991) *So Huu Va Cay Doi* [Ownership and Daily Lives]. Hanoi: NXB Su That.
- Tran, Duc (1992) *Cuoc Cach Mang Nau Dang Tiep Buoc* [The Brown Revolution Is Proceeding]. Hanoi: NXB Tu Tuong–Van Hoa.
- Tran, Kien (1997) *Chien Luoc Huy Dong Von Va Cac Nguon Luc Cho Su Nghiep Cong Nghiep Hoa, Hien Dai Hoa Dat Nuoc* [Strategies of Capital and Resource Mobilization for Industrialization and Modernization of the Country]. Hanoi: NXB Ha Noi.
- Tran, Thu Hang (1999) 'Vietnam's Trade in the Course of International Integration,' *Vietnamese Studies* 2: 111-24. Hanoi.
- Tran, Van Ha (1999) 'Animal Husbandry in Vietnam: Realities and Prospects,' *Vietnamese Studies* 2: 91-110. Hanoi.
- Tran, Van Ha (1999) 'Exploitation of Family Agriculture,' *Vietnamese Studies* 2: 77-90. Hanoi.
- Tran, Van Hoa (ed.) (1999) *Sectoral Analysis of Trade, Investment and Business in Vietnam*. London: Macmillan.
- Tran, Van Tho (ed., 2000) *Kinh Te Viet Nam 1955-2000 – Tinh Toan Moi, Phan Tich Moi* [Vietnam's Economy 1955-2000 – New Measurement, New Analysis]. Hanoi: NXB Thong Ke.
- Tran, Xuan Kien (1997) *Tich Tu Va Tap Trung Von Trong Nuoc* [Accumulation and Centralization of Domestic Capital]. Hanoi: NXB Thong Ke.
- Trivedi, P.K. (2002) 'Patterns of Health Care Utilization in Vietnam: An Analysis of 1997-98 Vietnam Livings Standards Survey Data,' World Bank Working Paper. Washington: World Bank.

- Truong Chinh (1986) *Doi Moi La Doi Hoi Buc Thiet Cua Dat Nuoc Va Cua Thoi Dai* [Reform Is an Urgent Requirement of the Country and the Present Era]. Hanoi: NXB Su That.
- Truong, Huu Quynh (1987) 'Agrarian Question and Peasant Movement in Vietnamese History,' *Vietnamese Studies* 86: 27-50. Hanoi.
- Truong, Huu Quynh (1993) 'May Suy Nghi Ve Nong Thon Dong Bang Bac Bo Ninh Tu Goc Do So Huu' [Thinking on the Rural Society in Red River Delta – Looking from Ownership Aspect], *Tap Chi Nghien Cuu Lich Su* 4: 2-5. Hanoi.
- Truong, Thi Tien (1998) *Doi Moi Co Che Quan Ly Kinh Te Nong Nghiep O Viet Nam* [Reform of the Economic Management Mechanism in Vietnam's Agriculture]. Hanoi: NXB Chinh Tri Quoc Gia.
- UNCTAD (1995) *Handbook of International Trade and Development Statistics 1994*. New York/Geneva: UNCTAD.
- UNCTAD (2000) *UNCTAD Handbook of Statistics* (CD-Rom). New York/Geneva: UNCTAD.
- Ungar, E.S. (1991) 'Socio-Cultural Change in Vietnam since 1986 and Future Implications,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 5: 46-53. Canberra: Australian National University.
- van Arkadie, B. (1993) 'Managing the Renewal Process: The Case of Vietnam,' *Public Administration and Development* 13(4): 435-51.
- van Brabant, J. (1990) 'Reforming a Socialist Developing Country – The Case of Vietnam,' *Economics of Planning* 23: 209-29.
- van de Walle, D. (1998) 'Infrastructure and Poverty in Vietnam,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 4: 99-136. Washington: World Bank.
- van de Walle, D. (2002) 'The Static and Dynamic Incidence of Vietnam's Public Safety Net,' World Bank Working Paper. Washington: World Bank.
- van de Walle, D. and D. Cratty (2003) 'Is the Emerging Non-Farm Market Economy the Route Out of Poverty in Vietnam,' World Bank Working Paper. Washington: World Bank.
- van Donge, J.K., et al. (1999) *Fostering High Growth in a Low Income Country: Program Aid to Vietnam*. Stockholm: SIDA.
- Van Tao (1996) *Phuong Thuc San Xuat Chau A. Ly Luan Mac-Lenin Va Thuc Tien Viet Nam* [Asian Mode of Production. Marxist-Leninist Theories and Vietnamese Practice]. Hanoi: NXB Khoa Hoc Xa Hoi.
- VCP (Vietnamese Communist Party) (1977) *Nghi Quyet Dai Hoi Dai Bien Toan Quoc Lan Thu IV* [Resolution of the Fourth National Congress of the VCP]. Hanoi: NXB Su That.
- VCP (1979) *Nghi Quyet Hoi Nghi Lan Thu Sau Ban Chap Hanh Trung Uong Dang (Khoa IV) Ve Phuong Huong, Nhiem Vu Phat Trien Cong Nghiep Hang Tieu Dung Va Cong Nghiep Dia Phuong* [Resolution of the 6th Congress of (VCP's) Central Committee (No. 4) on Direction and Responsibility of Developing Consumption goods Industries and Local Industries]. Hanoi: NXB Su That.
- VCP (1986) *Van Kien Dai Hoi Dai Bien Toan Quoc Lan Thu V* [Documents of the Fifth National Congress of the VCP]. Hanoi: NXB Su That.
- VCP (1987a) *Van Kien Dai Hoi Dai Bien Toan Quoc Lan Thu VI* [Documents of the Sixth National Congress of the (Vietnamese Communist Party)]. Hanoi: NXB Su That.
- VCP (1987b) *Van Kien Hoi Nghi Lan Thu Ba Ban Chap Hanh Trung Uong (Khoa VI) Ve Doi Moi Co Che Quan Ly Kinh Te* [Documents of the 3rd Congress of (VCP's) Central Committee (No. 6) on Reforming Economic Management Mechanism]. Hanoi: NXB Su That.

- VCP (1991) *Van Kien Dai Hoi Dai Bieu Toan Quoc Lan Thu VII* [Documents of the Seventh National Congress of the VCP]. Hanoi: NXB Su That.
- VCP (1992) 'Vietnam Perspective 1991-2000,' *Vietnamese Studies* 103: 89-98.
- VCP (1993) *Mot So Van Kien Cua Dang Ve Phat Trien Nong Nghiep* [Some Documents of VCP on Agricultural Development]. Hanoi: NXB Chinh Tri Quoc Gia.
- VCP (1996) *Document of the 8th Party's Congress*. Hanoi: NXB Chinh Tri Quoc Gia.
- VCP (1996) *Van Kien Dai Hoi Dai Bieu Toan Quoc Lan Thu VIII* [Documents of the Eighth National Congress of the VCP]. Hanoi: NXB Chinh Tri Quoc Gia.
- Vietnam Economic Times*, March, 1998.
- Vietnam Economic Times*, March, 1998.
- Vietnam Investment Review*, May 3rd, 1998.
- Vietnam Investment Review*, May 3rd, 1998.
- Vijverberg, W.P.M. (1998) 'Nonfarm Household Enterprises in Vietnam,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 5: 137-78. Washington: World Bank.
- Vijverberg, W.P.M. and J. Haughton (2001) 'Household Enterprises in Vietnam: Survival, Growth and Living Standards,' World Bank Working Paper. Washington: World Bank.
- Vo, Chi Cong (1993) 'Doi Moi Quan Ly Kinh Te Nong Nghiep Va Phat Trien Nen Nong Nghiep Hang Hoa O Nuoc Ta' [Renovation of Economic Management in Agriculture and the Development of Commodity Agriculture in the Country], *Tap Chi Cong San* 6: 5-9. Hanoi.
- Vo, Dai Luoc (1991) 'Some Problems in Renovating Vietnam's Foreign Economic Policy in the New Situation,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 11: 136-142. Canberra: Australian National University.
- Vo, Dai Luoc (ed.) (1994) *Chinh Sach Phat Trien Cong Nghiep Cua Viet Nam Trong Qua Trinh Doi Moi* [Vietnam's Industrial Development Policy in the Renovation Process]. Hanoi: NXB Khoa Hoc Xa Hoi.
- Vo, Nhan Tri (1990) *Vietnam's Economic Policy Since 1975*. Singapore: Institute of Southeast Asian Studies.
- Vo, Nhan Tri (1991) 'Some Remarks about the Political and Social Aspects of Renovation,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 7: 68-78. Canberra: Australian National University.
- Vo, Ta Han *et al.* (2000) *Chau A – Tu Khung Hoang Nhin Ve The Ky 21* [Asia: From Crisis Looking Forward to the 21th Century]. HoChiMinh City: NXB TP. Ho Chi Minh/Thoi Bao Kinh Te Sai Gon/VAPEC.
- Vo, Tong Xuan (1985) *Mot So Van De Phat Trien Nong Nghiep O Dong Bang Song Cuu Long* [Issues on Agricultural Development in the Mekong Delta]. Minh Hai: NXB Mui Ca Mau.
- Vo, Tri Thanh, and R. Zwiner (eds.) (1999) *Tiep Can Phan Tich Dinh Luong Nen Kinh Te Viet Nam: Khung Kho Hach Toan Tong The Va Mo Hinh Kinh Te Luong Vi Mo Dang Cau Truc* [An Approach to Quantitative Analysis on Vietnam's Economy: General Accounting Framework and Econometric Model on Structuralist Macroeconomics]. Hanoi: NXB Giao Thong Van Tai.
- Vu, Cong Hau (1996) *Industrial Crops in Vietnam*. Hanoi: The Gioi Publishers.
- Vu, Oanh (1986) *Mat Tran Nong Nghiep – Thanh Thuu Va Kinh Nghiem Moi* [Agricultural Front – Achievements and New Experiences]. Hanoi: NXB Su That.
- Vu, Oanh (1998) *Nong Nghiep Va Nong Thon Tren Con Duong Cong Nghiep Hoa, Hien Dai Hoa Va Hop Tac Hoa, Dan Chu Hoa* [Agricultural and Rural Sector on the Road to

- Industrialization, Modernization, and Cooperatization, Democratization]. Hanoi: NXB Chinh Tri Quoc Gia.
- Vu, Quang Viet (1997) *Kinh Te Viet Nam Tren Duong Phat Trien* [Vietnam's Economy on the Road to Development]. HoChiMinh City: NXB TP. Ho Chi Minh/Thoi Bao Kinh Te Sai Gon/VAPEC.
- Vu, Quang Viet *et al.* (2002) *Kinh Te Viet Nam Doi Moi. Nhung Phan Tich Va Danh Gia Quan Trong* [Vietnam's Economy in the Years of Reform. Important Analyzes and Assessments]. Hanoi: NXB Thong Ke.
- Vu, Quang Vinh (2001) *Mot So Van De Cai Cach Mo Cua Cua Trung Quoc Va Doi Moi O Viet Nam* [Issues on Reform and Open-Door Policies in China and Renovation in Vietnam]. Hanoi: NXB Thanh Nien.
- Vu, Quoc Huy (1991) 'Specific Problems of the Vietnamese Statistical Sources,' in A. McCarty *et al.* (eds.), *Vietnam Data Bank 1976-1991*. Canberra: Australian National University.
- Vu, Quy Nhan (1991) 'Fertility and Family Planning in Vietnam: Level, Trends and Challenges,' in D. Forbes, T.H. Hull, D.G. Marr and B. Brogan (eds.), *Doimoi – Vietnam's Renovation: Policy and Performance*, Ch. 12: 143-74. Canberra: Australian National University.
- Vu, Thi Hoa (1993) 'Khoan 10 Va Viec Dua Tien Bo Khoa Hoc Ky Thuat Vao San Xuat Nong Nghiep O Huyen Phuc Tho, Tinh Ha Tay' [Contract No. 10 and the Transfer of Technology Progress to Agricultural Production in Phuc Tho District, Ha Tay Province], *Tap Chi Nghien Cuu Lich Su* 4: 44-7, 53. Hanoi.
- Vu, Tuan Anh (ed.) (1994) *Vietnam's Economic Reform: Result and Problems*. Hanoi: Institute of Economics.
- Wagstaff, A. and E. van Doorslaer (2001) 'Paying for Health Care: Quantifying Fairness, Catastrophe, and Improvement, with Application to Vietnam, 1993-98,' World Bank Working Paper. Washington: World Bank.
- Watts, M. (1998) 'Recombinant Capitalism: State, De-Collectivization and the Agrarian Question in Vietnam,' in J. Pickles and A. Smith (eds.), *Theorising Transition: The Political Economy of Post-Communist Transformation*. London: Routledge.
- Wharton, C.R. (ed.) (1970) *Subsistence Agriculture and Economic Development*. London/New Jersey: Frank Cass.
- White, C. (1982) 'Debates in Vietnamese Development Policy,' IDS Discussion Paper. Sussex: Institute of Development Studies.
- White, C. (1985) 'Agricultural Planning, Pricing Policy and Co-operatives in Vietnam,' *World Development* 13(1): 97-114.
- Wiens, T.B. (1998) 'Agriculture and Rural Poverty in Vietnam,' in D. Dollar, P. Glewwe and J. Litvack (eds.), *Household Welfare and Vietnam's Transition*, Ch. 3: 61-98. Washington: World Bank.
- Winters, P. *et al.* (1998) 'The Role of Agriculture in Economic Development: Visible and Invisible Surplus Transfers,' *Journal of Development Studies* 34(5): 70-97.
- Wolff, P. (1999) *Vietnam – The Incomplete Transformation*. London: Frank Cass/German Development Institute.
- Wood, A. (1989) 'Deceleration of Inflation with Acceleration of Price Reform: Vietnam's Remarkable Recent Experience,' *Cambridge Journal of Economics* 13(4): 563-71.
- World Bank (1993) *Vietnam: Transition to the Market*. Hanoi: World Bank.
- World Bank (1994) *Vietnam Agriculture Marketing Study*. Hanoi: World Bank.
- World Bank (1995a) *Vietnam: Economic Report on Industrialization and Industrial Policy*. Hanoi: World Bank.
- World Bank (1995b) *Vietnam: Financial Sector Review*. Hanoi: World Bank.
- World Bank (1997) *Vietnam - Deepening Reform for Growth*. Hanoi: World Bank.

- World Bank (1998) *Vietnam - Rising to the Challenge*. Hanoi: World Bank.
- World Bank (1999) *Vietnam – Preparing for Take-off: How Vietnam Can Participate Fully in the East Asian Recovery*. Hanoi: World Bank.
- World Bank (2000a) *Vietnam 2010: Entering the 21st Century, Vol.1: Pillars of Development*. Hanoi: World Bank.
- World Bank (2000b) *Vietnam Development Report 2000: Attacking Poverty*. Hanoi: World Bank.
- World Bank (2000c) *Vietnam: A Progress Report on the Country Assistance Strategy of the World Bank Group 1999-2002*. Hanoi: World Bank.
- World Bank (2001) *Vietnam Development Report 2002: Implementing Reforms for Faster Growth and Poverty Reduction*. Hanoi: World Bank.
- World Bank (2002) *Vietnam Development Report 2003: Vietnam Delivering on its Promise*. Hanoi: World Bank.
- Wuyts, M. (1985) 'Money, Planning and Rural Transformation in Mozambique,' *Journal of Development Studies* 22(1): 180-207.
- Wuyts, M. (1989) 'Money and the Agrarian Question: the Mozambican Experience,' in E.V.K. FitzGerald and R. Vos (eds.), *Financing Economic Development: A Structural Approach to Monetary Policy*. Aldershot/Brookfield: Gower/ISS.

Nguyen Do Anh Tuan

Admitted to the ISS PhD programme in January 1999 on the basis of:

MA in Economics of Development, Vietnam-Netherlands
Master Program in Economics of Development, Vietnam's
National Economics University/Institute of Social Studies,
Hanoi, Vietnam, 1996)

This thesis has not been submitted to any university for a degree or any other award.