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'WE EARN ONLY FOR YOU': STRUCTURAL ADJUSTMENT AND RURAL MARKETS IN NORTHERN PAKISTAN

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ABSTRACT

This paper argues that the structural adjustment programme which has been underway in Pakistan since the 1980s has had little impact upon the operation of rural markets in the North-West Frontier Province. It is possible to distinguish two basic categories of agricultural commodity chains in the area. First, there are those agricultural commodity chains which contain rural markets which are not competitive. Second, there are those agricultural commodity chains containing rural markets which exhibit comparatively greater competitiveness. In both cases, it is demonstrated that the impact of structural adjustment upon the operation of both the agricultural commodity chains and the rural markets contained within these chains appears to be minimal. Adjustment has not addressed the hierarchical structure of rural markets, and has not addressed the core issue involved in understanding the capacity of markets to allocate resources: the monopoly power of capital.

"We earn only for you":
Structural adjustment and rural markets
in northern Pakistan

by

A Haroon Akram-Lodhi

I. INTRODUCTION

In December 1988 the government of Pakistan agreed a formal three-year structural adjustment programme with a range of multilateral and bilateral donors. In the ten years since that first agreement, the process of structural adjustment has come to dominate the economic landscape of the country. This is especially true in Pakistani agriculture. The central focus of the structural adjustment process in agriculture has been to move towards an institutional framework based upon a liberalization of rural input and output markets and an increasing reliance upon the allocation of resources through the price mechanism. Up until the early 1980s prices of major agricultural inputs and outputs were not determined by market forces; rather, they were determined by a range of major parastatals which used administrative fiat to effectively regulate the operation of the agricultural sector in an effort to placate the contradictory demands of farmers and urban consumers. However, over the course of the late 1980s and 1990s the liberalization of agricultural input and output markets has led to an increasing role of rural markets in the resource allocation process. These developments have been supported by the International Monetary Fund (IMF), the World Bank and the Asian Development Bank (ADB). Thus, the marketing and pricing of agricultural commodities has significantly changed.

Four general principles have guided the adjustment process in Pakistani agriculture and have thus had an impact upon the operation of rural markets. First, policy has sought to increase the returns which accrue to farmers. Second, in order to do this, policy has sought to reduce the range of price interventions which can serve as a form of indirect taxation. It is generally

argued by policymakers that input subsidies usually benefit better-off farmers, that the money could be better spent, and that price signals should reflect scarcity and thus neo-classical economic principles. Third, in order to reduce the range of price distortions the government has sought to reform the process whereby the state has in the past intervened in marketing and distribution. Fourth, earnings have also been enhanced through the reduction or elimination of a range of export taxes, which have served to liberalize the agricultural market.

In short, the structural adjustment process in Pakistani agriculture has advanced a qualitative neo-classical economic agenda. Such an agenda is predicated upon a theoretical conceptualization of the central factor which affects the development of capitalism in agriculture: state intervention in rural markets impedes economic activity. De-regulating reforms can homogenize the form of capitalist development, can assist in the full fruition of capitalist relations of production in rural areas, and in so doing can overcome barriers to capitalist development in agriculture.

Thus, a critical variable determining the impact of the structural adjustment process in Pakistani agriculture is the functioning of rural markets. While rural households use their land, labour, and other productive assets to produce a range of goods and services capable of being directly consumed, the security of many if not most rural livelihoods in Pakistan depends at least in part upon earning an income from the sale of goods and services in product and factor markets. Farm households require access to output markets, and to the processing and marketing facilities contained within such markets, in order to be able to transform the commodities which they have produced into cash income. They require access to labour markets, in order to be able to sell their capacity to work. Moreover, most households require access to product and factor markets in order to purchase key inputs that can be used in both on-farm production and non-farm production. In particular, farm households require access to markets for variable farm inputs such as modern seed varieties, chemical fertilizers and pesticides which, when combined with appropriate and well-timed quantities of water, can substantially increase farm production. They require access to labour markets, in order to be able to purchase labour-power. Thus, for most rural households in Pakistan, livelihood security relies upon the operation of rural markets.

However, it can be argued that structural adjustment programmes in general have very little understanding of the dynamics of markets. Agrarian adjustment is predicated upon a series of supply-side reforms which are supposed to both increase the resources being generated by agriculture and enhance the capability of the farmer to maintain control of the resources being generated; in so doing, agrarian accumulation is promoted. Within this framework, rural markets act as a *deus ex machina*: once a programme of supply-side reforms are introduced,

rural markets will automatically work to facilitate accumulation. It can be suggested that such a framework fails to grapple with the realities of markets: realities of unequal power which determine the ways in which markets operate.

In light of this suggestion, this paper examines the operation of output and input markets in Mardan and Charsadda districts of the central North-West Frontier Province (NWFP) of Pakistan in the wake of structural adjustment. In the remainder of this introduction, the central conclusions of the paper will be highlighted. Section II details the methodology by which the paper will investigate the operation of rural markets in central NWFP. Section III describes the data and setting of the paper. Section IV will detail the macrostructural environment within which rural markets in NWFP operate. A description of the agricultural commodity chains in Mardan and Charsadda districts follows. Section VI constitutes the heart of the paper, in which the operation of output and produced input markets within these agricultural commodity chains are detailed. Commodities examined include: for output, wheat, sugarcane, rice, maize, and tobacco; and for produced inputs, seeds, fertilizer, and pesticides. In the analysis, markups, marketing margins, price variations and price spreads will be examined so that a preliminary estimation can be made of the extent of market competitiveness within each respective commodity's agricultural commodity chain. Section VII will offer some conclusions to the discussion.

This paper argues that in general the structural adjustment programme which has been underway in Pakistan since the 1980s has had little impact upon the operation of rural markets. Examining the agricultural commodity chains of central NWFP in 1996, two basic categories can be distinguished. First, there are those agricultural commodity chains which contain rural markets which are not competitive. Such markets typically have comparatively high per unit markups, comparatively low per unit marketing margins, and minimal price variation. These markets perform a price-signaling and attribute-altering role, but do not appear to be efficient because of the capacity of transnational and corporate capital to utilize a high degree of monopoly to regulate the operation of markets. For output, wheat, sugarcane, and tobacco fall within this category. For inputs, seeds, fertilizer and pesticides fall within this category. Structural adjustment has not had a significant impact upon either these agricultural commodity chains as a whole or upon the rural markets contained within these chains. Second, there are those agricultural commodity chains containing rural markets which, with smaller per unit markups, slightly higher per unit marketing margins, and greater degrees of price variance, exhibit comparatively greater competitiveness. The rural markets within these agricultural commodity chains display a degree of efficiency in the performance of a price-signaling and attribute-altering role. For output, maize falls within this category. No inputs fall within this category. However, once again, the impact of structural adjustment upon the operation of both the agricultural commodity chain and the rural markets contained

within this chain appears to be minimal. In many ways though it is not surprising that the structural adjustment process in agriculture has had little impact upon the operation of agricultural commodity chains and rural markets in central NWFP. As elsewhere, rural markets in central NWFP are hierarchical structures which agents enter on unequal terms and which agents affect in unequal ways. Adjustment has not addressed the hierarchical structure of rural markets, and in so doing has not addressed the core issue involved in understanding the capacity of markets to allocate resources: the monopoly power of capital.

II. METHODOLOGY

In the orthodox neo-classical conceptualization offered by most economists, markets are where voluntary exchanges of well-defined commodities take place. Consumers and producers of commodities come together and establish a uniform price which reflects both the costs of production of the seller and the utility of the buyer. Prices established in markets serve a number of key economic functions. Prices allocate resources between alternative uses, distribute incomes amongst factors of production, and have an impact upon the investment decisions which facilitate growth and structural change. The key role assigned to prices helps explain why neo-classical economists assign such importance to analyzing factors which impinge upon market-based processes of price formation. To these economists, such factors result in sub-optimal economic outcomes.

Although within neo-classical theory it is a logical truism that the establishment of market-clearing prices must be preceded by the operation of markets, there is little attention paid to the operation of markets themselves. Markets are one of many 'black boxes' found within neo-classical economic theory. As a consequence, neo-classical economic theory offers little in the way of a practical guide to the investigation of rural markets. Therefore, this paper adopts a different approach. Following the method pioneered by Mackintosh (1990), rural markets for commodities are seen as having two primary functions. First, rural markets serve to transmit price signals between differentiated economic agents. Agents may be differentiated as consumers, as producers, as buyers, as sellers, as classes, by gender, or by any number of other socially-constructed identities. Second, rural markets serve to physically shift commodities from the point of production to the point of final purchase. In physically shifting commodities, rural markets may alter attributes of the commodity in three determinate ways. The first attribute is that of time. The storage of stocks of commodities makes available in the future that which is produced today. The second attribute is that of space. The transport of stocks of commodities makes available in a given location that which was produced elsewhere. The third attribute is that of form. The processing and packaging of commodities makes available to the final consumer that which has been produced but

which was in an unusable form. Each of the three alterations in the attributes of the commodity has associated costs.

In order to understand how these two primary functions of markets work in practice it is necessary to examine the specific modes of operation of individual markets. Market operations are however structured by four factors (Mackintosh 1990). The first factor is the terms on which agents enter into market relationships. In particular, economic agents that enter into markets with differential endowments may not be equal within the operation of a market. Agents with large quantities of assets may be able to enter markets from a position in which they can seek to regulate the market in their own interest—a 'market-maker'. Alternatively, agents which enter markets with limited assets may themselves be regulated by the market—a 'market-taker'. Second, then, it is necessary to examine the ways in which unequally endowed agents seek to influence, alter or control the terms and conditions under which markets operate. In particular, principal-agent problems may be decisively influenced by information, bounded rationality and uncertainty. Third, it is necessary to understand the role played by merchant capital in the operation of markets. Traders and merchants play a critical role in mediating both between market-makers and between market-makers and market-takers. Finally, it is necessary to analyze the conditions under which market-based forms of co-ordination are replaced by non-market-based forms of resource allocation and distribution.

In seeking to investigate the operation of rural markets within this methodological framework, a starting point is the construction of agricultural commodity chains. Agricultural commodity chains investigate the sequential stages by which farm commodities leave the point of production and arrive at the point of final consumption. As such, they represent an interlinkage of successive rural markets within and between which economic agents, institutions and activities interact. Several reasons exist for an investigation of rural markets through the perspective of agricultural commodity chains (Bernstein 1996). First, by examining the agricultural commodity chain as a whole it may be possible to establish the extent to which the operation of markets at the various stages of the chain may be autonomous. Second, an examination of the totality of the chain may reveal synergies necessary to the understanding of the operation of rural markets which an examination of isolated agricultural markets fails to reveal. Third, an examination of the sequential stages of the agricultural commodity chain may permit an analysis of the ways in which the structure of the chain in whole or in part affects rural livelihoods through consumption and employment. Fourth, by examining the agricultural commodity chain as a whole it may be possible to establish the nature of the relationship between production, exchange and distribution and the economic agents located in those particular spheres. Finally, analysis of

the agricultural commodity chain may facilitate an understanding of how the specific chain is integrated into social and cultural practices.

In order to be able to analyze both the markets which comprise individual stages of the agricultural commodity chain and the chain as a whole a sequential approach is proposed. In a sequential approach to agricultural commodity chains it is first necessary to specify the macrostructural environment within which the chains are located, because this will effect the operation of both the rural markets in the chain and the chain as a whole. Such a task is performed in Section IV. Next, it is necessary to clearly delineate the main features of the agricultural commodity chains. Such a task requires identifying the central activities performed at each stage of the chain, the agents performing these activities, and the institutions which mediate the relationships between agents by affecting the mesostructural environment. This task is performed in Section V. Once completed, it becomes possible to enter the microeconomic environment and examine the operation of specific rural markets located within agricultural commodity chains.

In that the central activities performed at each stage of the chain will already have been delineated, in that the agents performing those activities will have been identified, and in that the institutions which mediate the relationships between agents by effecting the mesostructural environment will have been outlined, the task of analyzing rural markets then becomes an empirical issue focusing upon one key question: how efficient are the rural markets of the central North-West Frontier Province? To an economist, an efficient market is one in which prices adjust to reflect the preferences of buyers and sellers and where prices reflect marginal costs. In order to assess efficiency, most non-neo-classical market analysis has in the past used bivariate correlation coefficients and differences in both intermarket price spreads and estimated transfer costs to assess the extent of linkages between spatially, temporally and vertically distinct markets (Barrett 1996). Such methods have now been recognized as flawed because of their inability to deal with interseasonal flow reversals, their need of filtering to eliminate bias, their susceptibility to overestimate segmentation due to information lags, and because of the possibility of heteroskedasticity in price data (Harriss 1979). More recently, market analysis has shifted towards assessing the extent to which parallel non-stationary price series exhibit a stable relationship (Palaskas and Harriss-White 1993). Unfortunately, such measures of cointegration fail to account for non-stationary transactions costs or discontinuous trade flows (Timmer 1996).

In light of these technical difficulties, it is proposed to use a simpler methodology. This simple methodology should permit some conclusions to be drawn regarding whether rural markets in central NWFP are capable of accomplishing their price-signaling and attribute-

altering role. The methodology is inspired by Kaleckian microanalysis. For Kalecki (1971), the price charged by firms for a commodity was based upon a markup over marginal costs. Kalecki argued that the size of the markup would reflect the degree of control of the firm in the product and labour markets in which it operated: what Kalecki termed the degree of monopoly. The more control exercised by the individual firm in the product and labour markets in which it operated the higher the markup. Higher markups would thus indicate a greater capacity to act as a market-maker and regulate the operation of markets in the interests of capital.

Carrying this approach over into rural markets, the degree of monopoly in successive segments of rural markets could be argued to reflect the degree of control of market-makers in the markets in which they operate and as such the capacity of markets to fulfill a price-signaling and attribute-altering role. Moreover, the degree of monopoly could also reflect both the relationship between the agents engaged in economic activities in successive stages of rural markets and the impact of institutions mediating such relationships through their impact on the mesostructural environment. Thus, it should be possible to use Kaleckian microanalysis to better understand rural markets. However, the approach used in what follows differs from Kalecki's methodology in one way. Kalecki argued the need to use marginal costs when assessing markups. Most studies which have examined markups have instead focused upon average costs, because empirical studies indicate that enterprises markup on the basis of average costs. Therefore, in what follows when it is possible markups over average cost will be used to assess the degree of monopoly within rural markets.

An assessment of the degree of monopoly in successive stages of rural markets will, when possible, be complemented by an evaluation of marketing margins. In what follows, marketing margins are considered as the difference between the sale price charged for a commodity and the costs associated with bringing a produced commodity into a market situation so that it can be sold. In principle, the marketing margin is used to cover the costs associated with the three alterations in the attributes of the commodity which occurs as a result of engagement in rural markets: alterations of time, space and form. Marketing margins also cover transactions costs and risk. However, while the marketing margin can be used to cover these 'real' costs, it can also be used as an avenue of speculative gain. High margins in particular marketing activities may represent 'fictitious' costs which while claimed are not actually paid out. The artificial inflation of costs could thus be used by market-makers as a means of accruing higher profits. It would be the lack of competitiveness in individual markets which would prevent these fictitious costs from being eroded. Thus, an assessment of the relationship between marketing margins and prices may, when possible,

provide a further indication of the extent to which monopoly power is being exercised by market-makers in rural markets.

A word of caution is however necessary when considering costs and prices in rural markets. One of the difficulties in analyzing rural commodity markets is the role played by cyclical factors. A cyclical abundance of a commodity can result in a fall in price. Falling prices combined with marketing costs can lead to marketing margins being high while markups appear to be low or even negative. However, as the scarcity value of the commodity grows through the movement of the seasonal cycle, prices can increase even as marketing costs remain reasonably stable. In such circumstances, marketing margins can be low and markups high. Thus, what would be a loss at one time of year can be a substantial profit at another time of year. Cyclical factors must be therefore recognized when considering both marketing margins and markups.

An assessment of markups and marketing margins can be further complimented by an evaluation of price variation. In economic theory, it is recognized that markets can appear to be monopolistic but still seem to operate as if they were competitive. The rationale is simple: in order to deter possible entry into a market by rivals, monopolistic firms must act as if the market were competitive. In this theory of contestable markets (Baumol 1982), it is argued that the extent of price variation provides evidence of contestability. Thus, wide price variations demonstrate contestability, whereas limited price variations indicate truly monopolistic markets. Therefore, in what follows, the extent of price variation will, where possible, also be detailed, in an effort to provide evidence on the extent of contestability.

Together, markups, marketing margins and price variation can indicate whether markets can accomplish their price-signaling and attribute-altering role. It is this somewhat eclectic methodology which is used for the analysis of all bar one output market in Section VI. However, the information required to use this methodology was not divulged by those involved in one output market or by those involved in input markets. In Section VI, when information on markups, marketing margins and price variations are not available, price spreads will be evaluated as a simple alternative. The price spread is simply the difference between the purchase and the sale price. In principle, the price spread must be sufficient to cover both marketing costs and a markup. Therefore, the price spread can provide some admittedly limited guidance as to the broad extent of markups and marketing margins.

III. DATA AND SETTING

In order to examine the operation of rural markets in central NWFP it is first necessary to introduce both the region where the investigation was conducted and the nature of the data that was collected. Mardan, Charsadda, and Nowshera districts together comprise the bulk of the Peshawar valley. According to the most recent census in 1981, the Peshawar valley had a rural population of some 2.7 million. The Peshawar valley has a semi-arid climate. The lack of rainfall is obviated to a degree by a well-developed irrigation system based upon a series of distributaries running from the Lower Swat Canal. At the same time however irrigation has itself compromised the productivity of the alluvial soil, in that there has been widespread waterlogging and salinity in the valley.

While farm income is frequently supplemented by off-farm earnings, farming is the predominant economic activity in the rural areas of the three districts. There are two cultivation seasons: *kharif*, running from April to October; and *rabi*, running from November to March. Principal crops comprise sugarcane, wheat, and maize, while tobacco, rice, fruit, vegetables, animal products and fodder crops are also of some importance. Yields of wheat and sugarcane are consistent with national yields. Yields of maize are low compared to the national average. Cultivation uses 'Green Revolution' technologies: modern seed varieties, chemical fertilizers and power equipment and machinery including tractors. However, draught power remains important for many farms. Waged labour is used, and the use of labour obtained through reciprocal exchange is also common. In addition to cultivation, animal husbandry is an important economic activity, particularly in the production of dairy products.

Landownership in the three districts is highly concentrated. For example, in the village of Sarfaraz in 1985 40 per cent of households owned 3.3 per cent of the operated area and 63 per cent of households were tenants. Similarly, in the village of Platoo in 1985 40 per cent of households owned 12.7 per cent of the operated area and 90 per cent of the households were tenants. Such concentration is typical. However, many small farms do own some land. Land-leasing supplements inadequate landownership to create small but viable operational holdings. Land-leasing between landlords and tenants occurs under a variety of contracts, with sharecropping being the norm. Common features of such contracts include a contract length of one season or one year, the provision by the landlord of selected inputs, and a rental cost of half the final output. The power of landlords has been reinforced by their unwillingness to sell land and hence by land scarcity. In addition, landlords have seized common property, provided credit for production, and deployed coercion.

The following analysis is largely based upon 179 random sample closed question surveys conducted in 20 locations in Mardan and Charsadda districts between June 1996 and January 1997. It is also based upon observations made while the surveys were being conducted. The research was performed on behalf of the Canadian International Development Agency and is

found within *Water, Pipes and People: The Social and Economic Impact of the Salinity Control and Reclamation Project in Mardan, Northern Pakistan* (Freedman and Akram-Lodhi 1997). The research follows similar work conducted in central NWFP between 1984 and 1986 and published as the *SCARP Mardan Evaluation: Baseline Survey* (Freedman 1986).

IV. THE MACROSTRUCTURAL ENVIRONMENT

As noted in the introduction, the overarching feature in Pakistan's economic landscape over the course of the 1990s has been the effort to implement a programme of structural adjustment. This macrostructural environment has impacted upon the operation of rural markets in general, and thus provides the context within which the rural markets of NWFP operate. It must therefore be examined in detail.

In December 1988 a formal three-year structural adjustment programme, a programme which was extended by a year and which thus ended in 1992, was agreed. The programme was supported by a range of multilateral and bilateral donors. The IMF provided a stand-by loan of SDR 273 million and a Structural Adjustment Facility of SDR 382 million. The World Bank provided Sectoral Adjustment Loans totaling US$600 million for the agriculture, energy and financial sectors. The ADB provided sectoral loans worth US$400 million for agriculture and industry. Finally, additional funds came from the United States, Japan, Britain and The Netherlands, amongst others.

The 1988/89-1991/92 structural adjustment programme had two core objectives. First, it sought to improve the resource balance through a reduction of domestic absorption. To that end, the government sought to reduce the rate of growth of GDP to what was thought to be a sustainable 5 per cent per annum, in an effort to stabilize the economy through a cut in domestic demand. The cut in domestic demand was to contribute to a reduction in the rate of inflation, to 6 per cent per annum. At the same time, the government also committed itself to reducing the budget deficit to 4.8 per cent of GDP by 1990/91. This was to be achieved by cutting the share of government spending in GDP to 24.6 per cent and by increasing the share of government revenue in GDP. Both measures were designed to contribute to stabilization by assisting in limiting growth in domestic demand. It was believed that domestic contraction would assist in reducing the current account deficit to 2.5 per cent of GNP, thus improving the balance of payments situation. Moreover, improvement in the balance of payments was designed to assist in reducing the debt-service ratio to 24 per cent of export earnings. Thus, demand was to contract, government spending was to be reduced, and imports were to be compressed.

The second objective of the structural adjustment programme was to considerably deepen the hesitant market liberalization that had occurred in the early 1980s by substantially enhancing the role of economic incentives in the resource allocation process. To that end, an extensive reconstruction of policies occurred. External trade was deregulated in several significant ways. The capital account on the balance of payments was liberalized with the introduction of rupee convertibility and with the associated introduction of foreign currency accounts. Thus, the exchange rate regime was liberalized. The administrative regulation of imports was weakened, with a reduction in maximum tariffs from 220 per cent to 80 per cent, a cut in maximum duties of nearly 30 per cent, and a shift to an open general license scheme. Moreover, the negative list of imports was cut from 118 items to 87 (Chaudhury 1995). The restricted list of imports effectively ceased. These trade liberalization provisions were accompanied by further measures designed to promote exports.

In addition to external trade, internal trade was liberalized. Internal administered prices continued to be deregulated, and especially the prices of agricultural crops. Remaining controls on investment licensing were removed for both domestic and international investors. Ownership controls on foreign enterprises were completely lifted and the capacity to repatriate profits became legally entrenched. A wide-ranging privatization programme de-nationalized the banking system and over 100 state-owned industrial enterprises.

The privatization of the banking system constituted the first step in an extensive liberalization of the financial system. Interest rates became increasingly market-determined and the number of debt instruments were reduced, in an effort to restrict the pace of credit expansion. New banks were licensed for operation while regulatory supervision measures were strengthened. Fiscal reforms were also carried out, with an increase in key administered prices, the introduction of a general sales tax, the introduction of agricultural income and wealth taxes, and the removal of certain tax exemptions.

However, despite efforts designed to achieve macroeconomic stability and construct an environment favourable to the private sector, the impact of the structural adjustment programme remained limited. In 1988/89, the ratio of government revenue collections to GDP stood at only 18.1 per cent, and the ratio of direct taxes to GDP stood at a minute 1.8 per cent. With an inadequate ability to mobilize domestic resources, the result of an entirely inadequate tax base, the heavy level of debt accrued during the early 1980s meant that a substantial portion of government spending was used for interest payments. Thus, whereas development expenditure grew by 8.5 per cent per annum between 1981/82 and 1988/89, the growth of non-development expenditure stood at 19.9 per cent in 1988/89 and current expenditure over the 1981/82 to 1988/89 period grew by 19.4 per cent per annum. Interest

payments accounted for 22.5 per cent of total expenditure by 1989/90. On 30 June 1990 external debt stood at 43.7 per cent of GDP, and internal debt to GDP stood at 43.1 per cent of GDP in 1988/89. The impact of internal debt on interest rates was clearly seen: by 1989/90 the average interest rate on domestic debt stood at 9.4 per cent. Moreover, despite the increase in the volume of debt by the early 1990s the ratio of tax revenue to GDP stood at a stagnant 13 to 14 per cent. At the same time, a large portion of government spending continued to be dedicated to defence and defence-related activities. Weakness in fiscal policy was compounded by a series of exogenous shocks: the Second Gulf War, flooding, and the spread of agricultural diseases. Together, these shocks produced a foreign exchange crisis for the country.

Table 1 summarizes the extent of liberalization under the first structural adjustment programme, emphasizing changes with relevance to agriculture. In terms of external market liberalization, the table demonstrates that while there were policy changes in terms of the exchange rate regime and restrictions on international trade in food grains, in practice international trade restrictions remained extensive. Tariffs remained high, and indeed the nominal protection coefficient for rice rose. In terms of internal de-regulation, the table demonstrates that resource allocation became increasingly market-determined. Restrictions on the domestic trade in food grains were lifted, public procurement of food grains ceased, and public distribution of food grain came to an end. Moreover, budget subsidies for both food grains and fertilizer were cut.

The comparative performance of the Pakistani economy under the adjustment programme is demonstrated in Table 2, where economic performance is compared to the six-year period prior to the 1988 agreement. As can be clearly seen in Table 2, economic performance deteriorated under the 1988 structural adjustment programme. The rate of growth of GDP per annum slowed from 6.3 per cent to 4.7 per cent; the rate of growth of manufacturing output also slowed. The fiscal deficit was only reduced to a moderate degree. Meanwhile, inflation nearly doubled between the two periods and the current account deficit similarly weakened. The only major economic indicator which did not witness a marked deterioration was the rate of growth of agriculture, and even here performance was slightly worse.

The deterioration in economic performance led to a second three year structural adjustment programme being agreed with multilateral and bilateral donors in February 1994. The IMF extended an Enhanced Structural Adjustment Facility and an Extended Fund Facility, which together were worth SDR 1 billion. The World Bank agreed to a sectoral loan of US$250 million for the public sector and a loan of US$200 million to support a Social Action Plan. Agreed targets between donors and the government included a rate of growth of GDP of 6.5

Table 1: Market liberalization in Pakistan, 1977-1992

Indicator	1977-84	1985-92
Exchange rate		
-rate of change in official policy (%)	5.5	5.4
-general policy	fixed, multiple	floating, uniform
Inflation (%)	12.4	7.0
Overall tariff rate (%)	69.0	64.0
Budget subsidies (%)		
-food grains	7.5	3.0
-fertilizer	18.5	13.2
-irrigation	12.5	15.3
Nominal protection coefficient, rice	0.56	0.64
Public procurement of grains from producers	compulsory/ voluntary	voluntary
Public distribution of grains to consumers	rationing, 10%	market
Restrictions on domestic grain trade	movement restrictions	no restrictions
Restrictions on international		
-food grain trade	public monopoly	open market
-fertilizer trade	public monopoly	public monopoly

Notes: Tariff rate is weighted average; budget subsides are percentages of public development expenditure; nominal protection coefficient is for the import parity price.

Source: Ahmed 1996.

Table 2: Pakistan under adjustment

Indicator	1982/3-87/8	1988/9-93/4
Rates of growth of:		
GDP	6.3	4.7
Agriculture	3.7	3.6
Manufacturing	7.9	5.7
Consumer prices	5.3	10.0
Share of GDP of:		
Fiscal deficit	7.6	7.2
Current account deficit	3.2	4.4

Source: Noman 1995.

per cent per annum; a reduction in inflation to 6 per cent per annum; a reduction in the fiscal deficit to 3 per cent of GDP; an extension of the general sales tax and the introduction of additional, revenue-enhancing measures; a reduction in maximum tariff rates to between 35 and 50 per cent over a three year period; a reduction in the current account deficit; and the full convertibility of the rupee. To achieve these outcomes, policy reforms were designed to continue along the same path as those witnessed in the previous period of adjustment: deregulation, liberalization and privatization, accompanied however by an additional emphasis on social and infrastructural investment.

However, the targets for 1994/95 were not achieved. Economic growth did not reach the 4.5 per cent per annum mark, primarily as a consequence of weak manufacturing performance. Sluggish growth, when combined with a secular decline in the tax to GDP ratio, and with immutable government spending commitments with regards to interest payments, debt repayments and defence, meant that the fiscal deficit stood at 6 per cent of GDP at the end of 1994. In order to finance the deficit, the government pursued a twin-track approach. First, external borrowing was increased. In 1993 external debt amounted to just over US$26 billion. In 1994 this increased to just under US$30 billion, and in 1995 it increased again, to stand at slightly more than US$32 billion. Second, interest rates were increased, so that in

early 1995 they stood at nearly 18.5 per cent. However, this strategy contributed to poor performance. The rapid expansion in external debt served to simultaneously sustain an unsustainable current account deficit, which, in part due to the devaluation of the rupee, continued to be large and which stood at nearly 4 per cent of GDP for the financial year 1994/95, while deepening the descent into a debt trap. Increased interest rates served to weaken needed growth-enhancing investment without attracting increases in savings because of the attractions of speculative activity. Moreover, high interest rates were unable to dampen inflation; the inflation rate reached 15 per cent in early 1995, in large measure due to the devaluation of the rupee. Increased inflation and the devaluation of the rupee both served to substantially erode real wages and thus cut domestic demand in excess of that sought by the IMF, contributing to weak domestic economic performance.

Following the 1995 budget the IMF unilaterally canceled Pakistan's Enhanced Structural Adjustment Facility, which on November 30 1995 had an undrawn balance of SDR 404.4 million, as well as Pakistan's Extended Fund Facility. The explicit reason was the failure to reduce tariff barriers to trade as agreed, although more generally the Fund was seeking a more comprehensive, credible and decisive policy package. The IMF stated that Pakistan continued to have 'chronic and unsustainable fiscal and external account deficits' (cited in LaPorte, Jr. 1996: 187), a situation which was undoubtedly magnified by low productivity, continuing internal and external trade barriers, excessive military spending, and corruption. While the IMF did maintain a 15-month stand-by credit of SDR 401.9 million, in part because the Fund's articles of agreement permit easier access to the stand-by credit, the third tranche of this loan was held back following the 1996 budget. The reason was a failure to comply with agreed conditionalities regarding the budget deficit.

Following a prolonged period of negotiation, in December 1996 the IMF Executive Board agreed to resume disbursements of the outstanding amount of the stand-by credit held back following the 1996 budget. Moreover, the IMF approved an SDR 160.7 increase in the stand-by credit, extending the arrangement until September 1997. Then, in October 1997, the IMF agreed a fresh loan of US$1.56 billion. While it is unclear what the government agreed in order to resume disbursements from the Fund, the conditionalities attached to the resumption of lending do appear to be stringent (*The News* 21/12/96). The government appears to have agreed to seek to achieve a rate of growth of between 5 and 5.5 per cent while simultaneously seeking to constrain the balance of payments deficit to 5.8 per cent of GDP and keeping the rate of inflation at between 10 and 11 per cent per annum (*The News* 28/12/96). In order to achieve such ambitious targets, the government apparently agreed to reduce the consolidated fiscal deficit to 4 per cent of GDP during the fiscal year 1996/97. As part of this process, the government was to enhance the ratio of tax revenue to GDP from 12.8 per cent in 1996 to some 14.5 per cent. It also explicitly stated that it would cut spending. Domestic borrowing

in support of the budget was limited to 1.6 per cent of GDP during the fiscal year 1996/97, while external borrowing appears to have been informally limited to a quarterly ceiling of US$350 million, of which only US$100 million can be short term. The government appears to have agreed to increase foreign exchange reserves to US$1.6 billion, which represents a doubling of reserves. Finally, independent of the IMF the government committed itself to transferring US$1 billion worth of assets to the private sector.

However, the capacity to meet these new targets must be open to doubt. Of the last 15 conditionalities previously agreed with the IMF, only 3 have been met. An inability to fulfill conditionalities has led to at least three previous IMF programmes being abandoned. Total domestic and foreign debt stood in late 1996 at US$51 billion, an amount equal to 90 per cent of GDP or six times the amount earned from exports in 1995. Budget cuts would free up fiscal resources to meet these claims, but with over 26 per cent of government spending devoted to defence, with budgeted debt servicing exceeding the defence budget by 173 per cent, and with development expenditure dropping from 8 per cent of GDP in the late 1980s to less than 4 per cent in the fiscal year 1996/97, clearly the scope for further cuts is limited. Tax increases are likely, but with new indirect taxes adding Rs 130.6 billion in revenues over the period 1993-1996, the scope for further tax increases also remains limited unless the direct tax base is extensively widened beyond the mere 1.1 million who pay income and wealth taxes. Indeed, it is unlikely that the 1997/98 tax take will meet its target of US$7.4 billion in revenues.

In 1996/97 large-scale manufacturing suffered its first ever contraction. Simultaneously, the trade deficit reached a new record of US$3.37 billion. It is unlikely that the October 1997 devaluation of the rupee provides the solution to these problems; it is more likely that the devaluation will exacerbate difficulties. Clearly then the economy of Pakistan will continue to be in a state of ongoing near-crisis for some time, while simultaneously undergoing a process of structural adjustment. These two parameters shape the macrostructural environment within which agriculture operates, impacting upon both the agents and the institutions which shape rural markets in central NWFP.

V. AGRICULTURAL COMMODITY CHAINS IN CENTRAL NWFP

Agricultural commodity chains 'map' theoretical and empirical relationships. As such, they facilitate a better understanding of the complex interation between the macrostructural environment, economic agents, institutions and rural markets. Table 3 maps a generalized typology of the structure of agricultural commodity chains in central NWFP, drawing upon the analysis of Bernstein (1996). The structure of the agricultural commodity chains are divided into a sequence of seven principal stages which comprise: 1. the initial conditions of

Table 3: A generalised typology of agricultural commodity chains in central NWFP

Activity/Function	Agents	State Institutions	Civil society institutions
1. Conditions of production			
i. land	-PCPE	-BOR	-Jirga
		-COL	-PA
		-EPA	
		-PAD(SCD)	
ii. labour	-PCPE	-PLD	-Jirga
	-Workers		-PA
iii. inputs			
a. seed	-TNC	-MINFAC(FSCD)	-PrA
	-CC	-PAD(ADA)	-MeA
	-MeC		-MC
	-PM		-PA
	-PCPE		
b. fertiliser	-TNC	-MINFAC(FID)	-PrA
	-CC	-PAD(ADA)	-MeA
	-SOE		-MC
	-MeC		-PA
	-PM		
	-PCPE		
c. pesticide and herbicide	-TNC	-MINFAC	-PrA
	-CC	-PAD(ADA)	-MeA
	-MeC		-MC
	-PM		-PA
	-PCPE		
d. machinery	-TNC	-MINFAC	-PrA
	-CC	-PAD(EngD)	-MeA
	-MeC		-PA
	-PCPE		
e. water	-PCPE	-MINFAC(FWMC)	-Jirga
		-MOW&P	-PA
		-WAPDA	
		-COL	
		-PAD(OFWMD)	
		-PID	
f. energy	-TNC	-MOW&P	-PrA
	-CC	-WAPDA	-PA
	-SOE		
	-PCPE		
g. finance	-PCPE	-ADBP	-MFA
	-MeC	-FBC	-PA
	-PM	-SBP	
h. other services	-PCPE	-MINFAC(PARC)	-NWFPAU
		-EPA	-ARI
		-PAD(ADA)	-PrA
			-MeA
			-PA
2. Production	-PCPE	-MINFAC	-PA
	-Workers	-SD(PACO)	
		-PAD	
		-PAD(SDIR)	

Table 3: A generalised typology of agricultural commodity chains in central NWFP

Activity/Function	Agents	State Institutions	Civil society institutions
3. Primary procurement			
i. buying	-CC	-APCOM	-PrA
	-SOE	-PASSCO	-MeA
	-PM	-RECP	-MC
	-CPE	-TCP	-PA
	-PCPE	-PDF	
ii. storage	-CC	-PASSCO	-PrA
	-SOE	-RECP	-MeA
	-PM	-TCP	-MC
	-CPE	-PDF	-PA
	-PCPE		
iii. selling	-CC	-APCOM	-PrA
	-SOE	-PASSCO	-MeA
	-PM	-RECP	-MC
	-CPE	-TCP	-PA
	-PCPE	-PDF	
iv. transport	-SOE	-MLG&RD	-MeA
	-MeC	-TCP	-TU
	-PM	-LG&RDD	
	-PCPE		
	-Workers		
v. exports and imports	-TNC	-APCOM	-PrA
	-CC	-PASSCO	-MeA
	-SOE	-RECP	
	-MeC	-TCP	
	-PM	-PDF	
4. Processing	-CC	-APCOM	-PrA
	-SOE	-F&DI	-PA
	-CPE	-PDF	-TU
	-PCPE		
	-Workers		
5. Wholesale distribution	-SOE	-APCOM	-MeA
	-MeC	-PASSCO	-MC
	-PM	-RECP	
		-TCP	
6. Retail distribution	-SOE	-APCOM	-MeA
	-MeC		-MC
	-PM		
7. Final consumption	-Consumers		

Explanation of abbreviations

ADA	Agricultural Development Authority
ADBP	Agricultural Development Bank
APCOM	Agricultural Prices Commission
ARI	Agricultural Research Institutes
BOR	Board of Revenue
CC	Corporate capital
COL	District collectors of revenue

CPE	Commodity producing enterprises
EngD	Engineering Directorate
EPA	Environmental Protection Agency
FBC	Federal Bank of Cooperatives
F&DI	Food and Drug Inspectorate
FID	Fertilizer Import Department
FMWC	Farm Water Management Cell
FSCD	Federal Seed Certification Department
LG&RDD	Local Government and Rural Development Department
MC	Market committees
MeA	Merchant's associations
MeC	Merchant capital
MFA	Microfinance associations
MINFAC	Ministry of Food, Agriculture and Cooperatives
MLG&RD	Ministry of Local Government and Rural Development
MOW&P	Ministry of Water and Power
NWFPAU	North-West Frontier Province Agricultural University
OFWMD	On-Farm Water Management Directorate
PA	Peasant associations
PACO	Pakistan Agricultural Census Organization
PAD	Provincial Agriculture Department
PARC	Pakistan Agricultural Research Council
PASSCO	Pakistan Agricultural Services and Storage Corporation
PCPE	Petty commodity producing enterprises
PDF	Provincial Department of Food
PID	Provincial Irrigation Department
PLD	Provincial Labour Department
PM	Petty merchants
PrA	Producer's associations
RECP	Rice Export Corporation of Pakistan
SBP	State Bank of Pakistan
SCD	Soil Conservation Directorate
SD	Statistics Division
SDIR	Statistics Directorate
SOE	State-owned enterprises
TCP	Trading Corporation of Pakistan
TNC	Transnational capital
TU	Trades unions
WAPDA	Water and Power Development Authority

Source: Interpolated from Bernstein (1996) and Faruqee and Carey (1995).

production; 2. farm production; 3. primary procurement from farmers by marketing intermediaries; 4. processing; 5. wholesale market distributive intermediation; 6. retail market distributive intermediation; and 7. final consumption. Within each stage, key information is summarized within four classifications: the activities undertaken at each stage; the agents involved in undertaking those activities; the state institutions which structure the undertaking of activities by agents; and the civil society institutions through which agents seek to alter the structures within which their activities are undertaken. It should be stressed that the institutions described in the agricultural commodity chain are themselves part of a normative framework of rules and obligations within which structures are built and agency is expressed. Institutions can thus contribute to the reproduction of the normative framework while at the same time using the rules of the normative framework as a resource through which the framework can be transformed.

In examining the individual stages of the generalized typology of the agricultural commodity chains of central NWFP, it is apparent that other than the stage of final consumption rural markets can be located within each stage. Agents at each stage perform activities or functions, using rural markets to facilitate the production and transfer of the agricultural commodity from one stage of the chain to the next. Thus, rural market activity occurs both within and between the stages of the agricultural commodity chain. For example, rural markets in land, labour and inputs effect the initial conditions under which a commodity is produced. Following production, rural markets effect how the commodity is procured, processed, distributed and consumed. However, what makes agricultural commodity chains of greater interest is the explicit recognition within them of the presence of agents operating at multiple stages of the chain. For example, corporate capital operates within three stages of the generalized typology offered in Table 3. Similarly, transnational capital operates at two stages of the generalized typology. It would appear irrational for agents to perform activities in a market located at one point in an agricultural commodity chain without taking into account the circumstances that they face in markets located at other points in the chain. Therefore, agricultural commodity chains imply that the rural markets of central NWFP are interlocking. Finally, it is unlikely that the terms by which agents enter into the various markets comprising agricultural commodity chains are equal. Thus, it is unlikely that a corporate capital enters a market on the same terms as a petty commodity producing peasant farm. This implies that within interlocking rural markets it is to be expected that agents' relative position will reflect unequal capacities to source, exercise and effect power in the range of market relationships through which they seek to perform an activity or function.

The relationship between unequal agents in interlocking rural markets will be structured by state institutions. The variety of state institutions which can affect the operations of rural markets at individual stages of agricultural commodity chains are noted in Table 3. Once again, it is noticeable that individual institutions can affect activities at more than one stage of agricultural commodity chains. For example, a state institution such as the Agricultural Prices Commission (APCOM) operates at four stages of the generalized typology. Concurrently, there are clear differences in the number of agents that are affected by state institutions in the activities that they perform. For example, whereas all aspects of the activities of petty commodity producing enterprises engaged in peasant farming are effected by state institutions, workers or retailers are effected by a much smaller number of state institutions. It is apparent that the relationship between the state and agents in rural markets differs by the stage of the generalized typology. Similarly, there are differences in the variety of civil society institutions which seek to alter the ways in which both collective agency is expressed and the capacity of the state to affect the activities of agents. Thus, the *jirga* only seeks to have an impact within certain spheres of agricultural commodity chains. Once again, it is apparent that the relationships both between and within the collective institutions of civil society and the institutions of the state differs according to the stage of the generalized typology.

The generalized typology of agricultural commodity chains in central NWFP offered in Table 3 can be rendered more concrete by referring to specific agricultural commodity chains. Figures 1 through 4 present simplified agricultural commodity chains for 4 key crops grown in central NWFP: wheat, sugarcane, rice and maize. The simplified wheat commodity chain of central NWFP is illustrated in Figure 1, which demonstrates that the structure of the wheat commodity chain is straightforward. Large-scale corporate agro-chemical manufacturers transfer seed to procurement intermediaries who, acting as agents on behalf of the manufacturer, sell the seed to petty distributive retailing intermediaries. Such distributive intermediaries then sell to the farmer. A similar pattern of transactions occur for pesticides and fertilizer. It is of interest to note that the seed, pesticide and fertilizer manufacturer can in fact be the same agro-chemical manufacturer. Petty commodity producing peasant farmers sell the wheat they produce to village-based procurement intermediaries, who may be either petty traders or merchants. In turn, procurement intermediaries arrange for the milling of wheat into flour. Commonly, such mills are commodity producing micro-enterprises. However, mills may also be part of a much larger corporate enterprise: commercially-focused operations which often form part of a multi-divisional firm. Once milled, wheat flour is sold on to distributive intermediaries and the retailer, before being purchased by the final consumer.

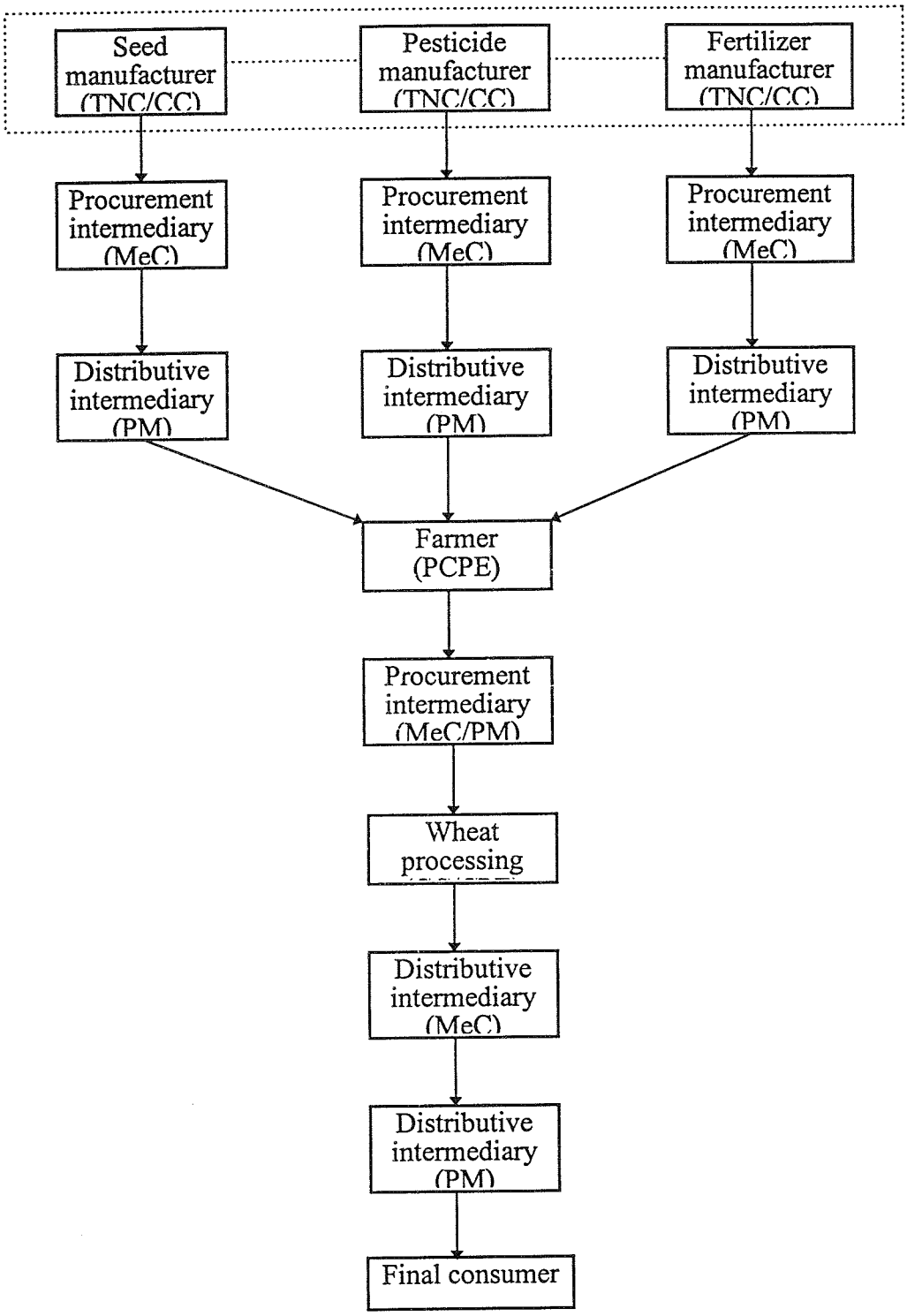

Figure 1: The wheat commodity chain

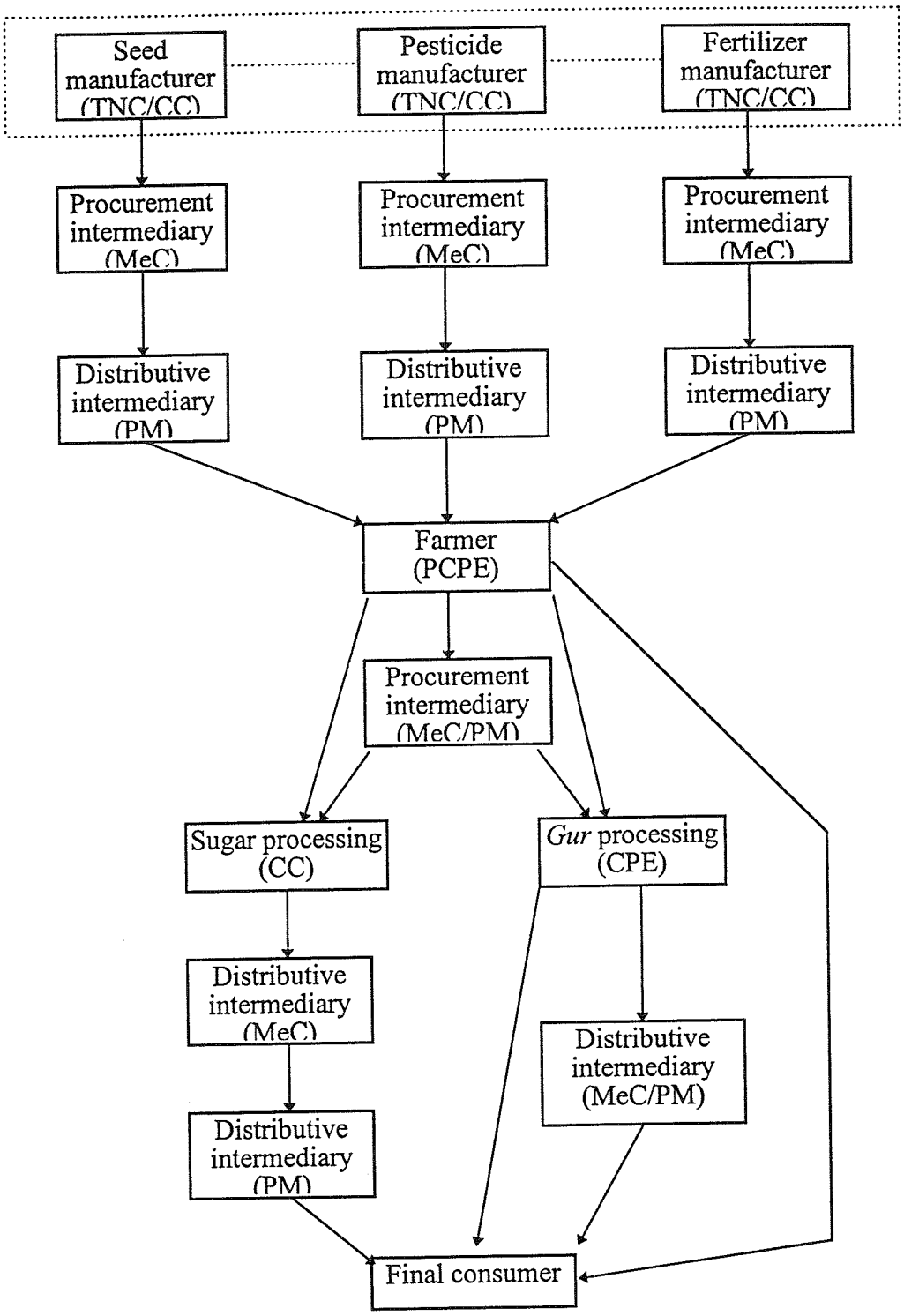

Figure 2: The sugarcane commodity chain

Turning next to Figure 2, the simplified agricultural commodity chain for sugarcane is presented. Examining the operation of the chain, large-scale commercially manufactured urea fertilizer is transferred by the corporate manufacturer to procurement intermediaries who, acting as agents on behalf of the manufacturer, sell the urea to petty distributive retailing intermediaries. Such distributive intermediaries then sell to the farmer. Similar transactions occur for seed and pesticide. Once again, it can be noted that the seed, pesticide and fertilizer manufacturer can in fact be the same agro-chemical manufacturer. Once produced, sugarcane can be either sold by petty commodity producing peasant farmers or can be processed by them into *gur*. If sold, the sugarcane is procured by intermediaries who, acting as petty traders, sell on to either sugar mills or to commodity producing *gur* makers. Alternatively, the peasant farmer may sell directly to the *gur* maker or the sugar mill. Sugar mills in central NWFP are a major form of corporate capital: they are commercially-focused operations which usually form part of a multi-divisional firm. Mardan, Charsadda and Nowshera districts each have only one mill When sold to the sugar mill, the sugarcane is processed, from where it is sold to a distributor who in turn sells on to a micro-entrepreneurial petty retailer responsible for the sale of the refined sugar to the final consumer. Alternatively, once micro-entrepreneurial commodity producing *gur* makers have acquired the sugarcane, the resulting product may be sold directly to the final consumer or may be sold on to a distributor who will in turn sell the *gur* to the final consumer. Similarly, if the farmer processes sugarcane into *gur* the processed product may be acquired by a *gur* maker who, acting as a petty retailer, sells on to the final consumer or who, acting as a distributive intermediary, sells on to a petty retailer who in turn sells the *gur* to the final consumer. It is also common for the farmer to sell their *gur* directly to the final consumer.

The simplified rice commodity chain of central NWFP is illustrated in Figure 3, which demonstrates that the operation of the rice commodity chain is of moderate complexity. Large-scale commercially manufactured pesticides are transferred by the corporate manufacturer to procurement intermediaries who, acting as dealer agents on behalf of the manufacturer, sell the pesticide to petty distributive retailing intermediaries. Such distributive intermediaries then sell to the farmer. Similar transfers occur for seed and for fertilizer. Pesticides, seeds and fertilizers may be produced by the same agro-chemical manufacturer. Petty commodity producing peasant farmers then produce rice. They may sell their unprocessed surplus rice to processors who then sell on to petty traders and merchants. Petty traders and merchants act as distributive intermediaries, typically operating at both the village and regional level. In turn, distributive intermediaries retail the rice to final consumers. Alternatively, rice producers may process their rice themselves and sell it direct to the distributive intermediaries, who then sell on to the final consumer.

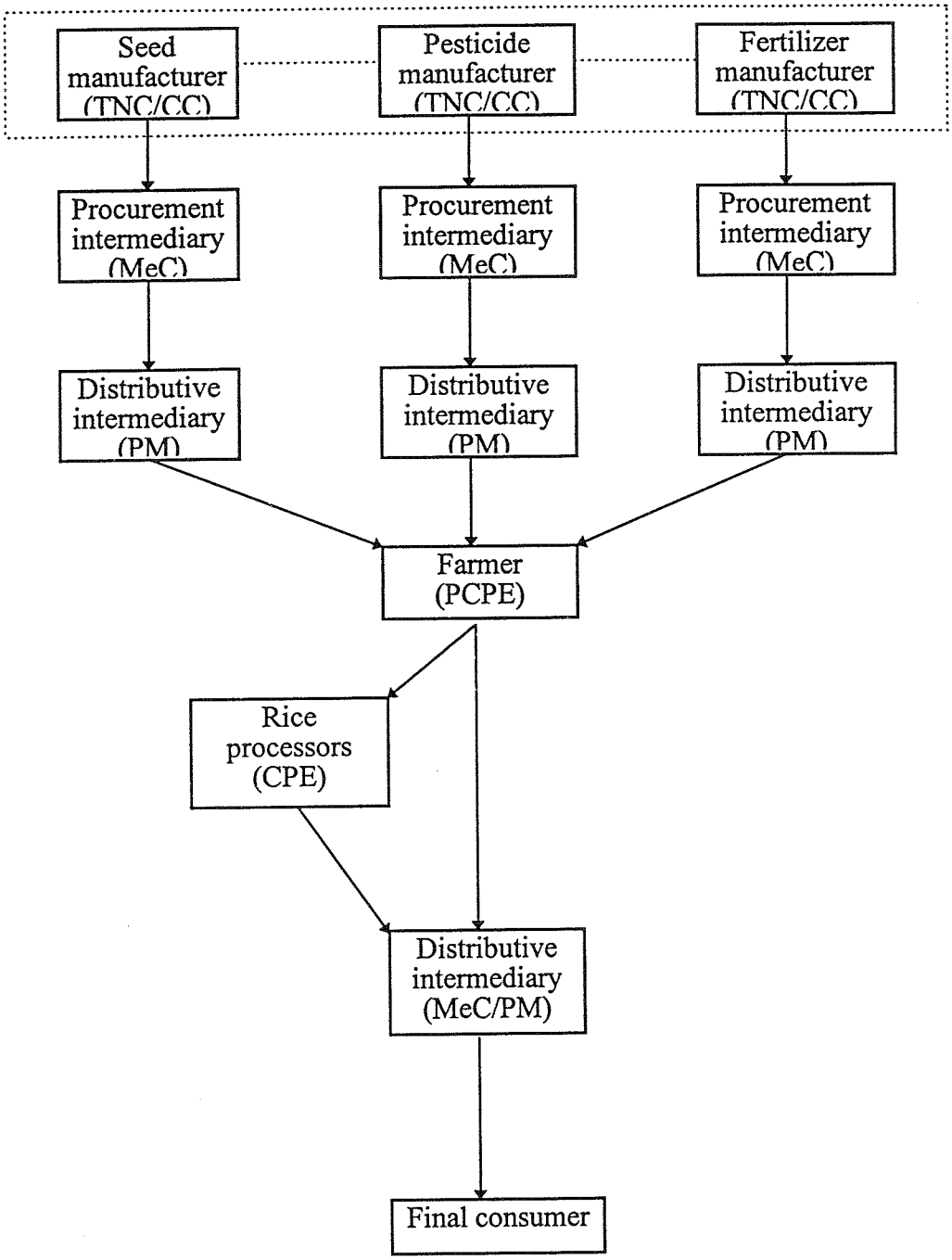

Figure 3: The rice commodity chain

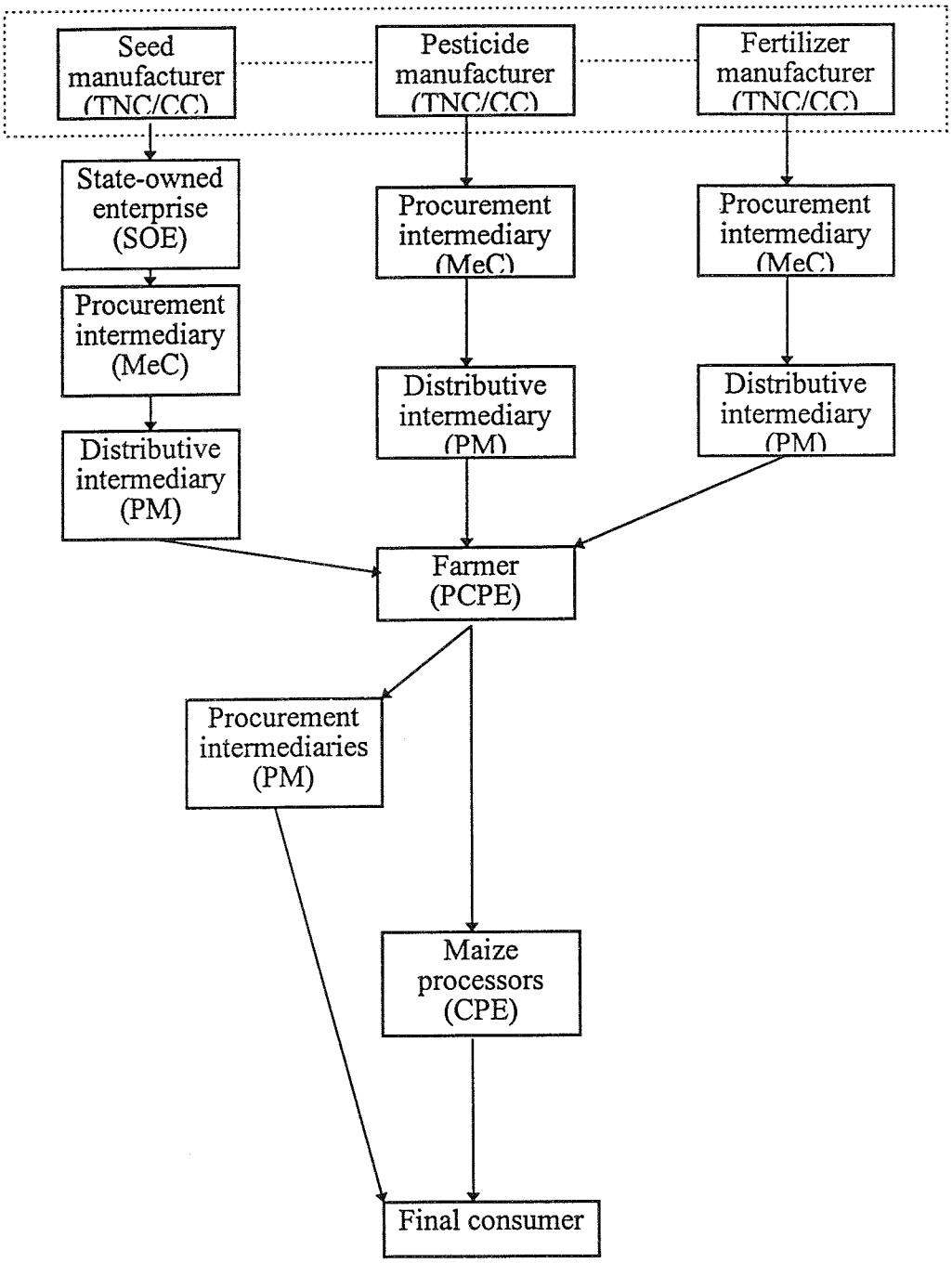

Figure 4: The maize commodity chain

Turning finally to Figure 4, the simplified maize commodity chain is presented. As in the other commodity chains that have been presented, in Figure 4 large-scale corporate agro-chemical manufacturers produce maize seeds. However, they play little role in the maize seed market itself. Rather, manufactured maize seed in transferred to state-owned depots. The state-owned depots in turn sell the maize seed to commercial procurement intermediaries who in turn sell the seed to petty distributive retailing intermediaries. Such distributive intermediaries then sell to the farmer. Pesticide and fertilizer are obtained in a manner similar to that demonstrated in the other agricultural commodity chains. Once petty commodity producing peasant farmers have produced maize, they can sell their surplus to village-based procurement intermediaries who, acting as petty traders or merchants, in turn sell the unprocessed maize to the final consumer. Alternatively, farmers may sell their surplus maize directly to commodity producing micro-entrepreneurial processors, who mill the maize and then directly sell the processed maize to the final consumer.

It was argued above that the macrostructural environment impacts upon specific rural markets as well as agricultural commodity chains as a whole. The impact of macrostructural parameters on specific markets is noted in the next section. However, it is worth noting here the way in which macrostructural change has effected the agricultural commodity chains of central NWFP as a whole.

IMF-sponsored efforts to reduce the domestic absorption of foreign resources in Pakistan have directly effected the agricultural commodity chains of central NWFP in two ways. First, there has been a sustained depreciation of the rupee. Between June 1982 and April 1996 the rupee lost 71.5 per cent of its value against the dollar. In October 1997 a further devaluation of 8.7 per cent occurred. Moreover, foreign exchange controls have been effectively lifted. The IMF and the World Bank have consistently argued that an overvalued exchange rate acts as a form of implicit taxation, in that it makes foreign goods more expensive on domestic markets while simultaneously acting to discourage exports. It is argued by the multilateral institutions that for a predominantly agrarian economy such as Pakistan the cost of an overvalued exchange rate is witnessed in lesser levels of agro-based exports than would be possible if prices reflected opportunity costs based upon factor endowments. Thus, devaluation alters rural markets by making agricultural exports more attractive. Moreover, it is argued that the cost of a real depreciation of the exchange rate to farmers can be partially if not completely offset through the increase in the share of the border price that they receive if moves are made towards marketing reform. Farmers themselves usually want to receive the border price if that price is high. Moves towards marketing reform are examined in the next section.

The second way in which shifts in the macrostructural environment have effected agricultural commodity chains has been in the efforts that have been made to close the fiscal deficit. There can be little doubt that agriculture is undertaxed in Pakistan. In the period 1990/91 to 1992/93 direct agricultural taxes amounted to only 2.8 per cent of all direct taxes. Moreover, in the early 1990s agricultural direct taxes accounted for only 6 per cent of provincial revenues. Paradoxically, complaints that agriculture is undertaxed can be set beside evidence that agriculture is overtaxed. Price distortions, which serve as a form of indirect taxation, are responsible for successive estimates that agriculture has transferred resources to the rest of the economy. Estimates of the magnitude of the transfer range from 1.3 per cent of annual agricultural value added to 13 per cent of agricultural value added. The burden of this indirect taxation appears to fall proportionally more on smaller farmers (Khan 1994). However, it is important to make several distinctions in the argument over taxation. First, it is necessary to distinguish between less than transparent implicit taxes, in the form of overvalued exchange rates and high levels of protection, and explicit taxes. Implicit taxes distort the allocation of resources; explicit taxes can also distort, but need not. Second, then, it is necessary to distinguish between explicit taxes which distort resource allocation and those which do not. The international financial institutions argue that producer price restrictions, export taxes and consumer subsidies distort the allocation of economic resources; consumption taxes do not, while the transparent direct taxation of wealth and income does distort. However, the level of distortion caused by the direct taxation of wealth and income can be significantly less than those caused by implicit taxes, while at the same time the volume of resources raised in a comparatively poor economy by direct taxes can be much greater than the volume of resources raised through consumption taxes. Thus, the argument about taxes on Pakistani agriculture needs to be nuanced. The argument made by those in favour of closing the fiscal deficit is one in favour of directly taxing all wealth and income regardless of the sector in which it originates. Currently, such does not happen: only one per cent of the population pays income tax, and agricultural income is tax exempt (Zaidi 1994). It has been estimated that of the 25 per cent of GDP generated by agriculture, 20 per cent goes to rural landlords with substantial holdings of land. If such is the case, by not directly taxing the Rs 100 billion agricultural income of landlords the government is foregoing about Rs 40 billion in tax receipts. Of greater relevance from the perspective of the operation of rural markets, attempts to boost the tax take from agriculture will reduce the incomes of farmers and this will in turn have an effect on product and factor markets.

Over the course of the 1980s there were a wealth of enquiries into the way in which the taxation of Pakistani agriculture could be used to enhance the resource capacities of the state. However, there have only between three direct changes in agricultural taxation as a consequence of these enquiries. First, in 1982/83 land revenue rates were raised. Later, the *Zakat* and *Ushr* Ordinance was promulgated. A part of the effort to 'Islamise' the economy,

this Ordinance dictated that Sunni Muslims pay land revenue in the form of *ushr*. Nonetheless, land revenue rates remained a derisory form of agricultural taxation. In the period between 1980/81 and 1992/93 total land revenue and ushr amounted to only 4.2 per cent of the value of direct taxes and only a paltry .58 per cent of the value of the crops produced on the land. Second, in September and October 1993 the caretaker government amended the 1963 Wealth Tax by removing the exemption of agricultural land as immovable property and by introducing a flat rate land tax. In February 1994 the Wealth Tax (Amendment) Ordinance was enacted by the newly-elected government; it was a heavily diluted version of the caretaker government's proposal which effectively abrogated the commitment to the direct taxation of agricultural income. Moreover, the flat rate tax has been allowed to lapse. Third, in December 1996 the caretaker government announced a rise in the abiana rate across the country, from an average of Rs 90 per acre to Rs 100 per acre (*The News* 21/12/96). However, the limited nature of these changes indicates that despite the efforts of the advocates of structural adjustment in agriculture, despite pressures from the IMF, the World Bank, and the ADB, and despite the need to close the fiscal deficit, efforts at enhancing the quantum of resources mobilized by the state from agriculture have been by and large minimal. Thus, while devaluation will have effected the performance of the agricultural commodity chains of central NWFP, attempts to tax farm income will have had a much more limited impact.

The agricultural commodity chains of central NWFP imply that agents enter into rural market relationships from unequal positions. As a consequence, agents have differential capacities to influence, alter or control the terms and conditions under which rural markets operate. In such circumstances, information, bounded rationality and uncertainty are likely to be important in structuring the operation of rural markets. Moreover, it is possible to conceive of circumstances in which market-based forms of co-ordination are replaced by non-market-based forms of resource allocation and distribution. Thus, agents and institutions at different stages of the chain may overlap across stages, generating interlocking and interdependent rural markets. Such an understanding informs the analysis which follows of specific markets within the agricultural commodity chains of central NWFP.

VI. RURAL MARKETS IN CENTRAL NWFP

The macrostructural environment within which rural markets in central NWFP operate has now been explained. Moreover, the central activities performed at each stage of the generalized typology of the agricultural commodity chain, the agents performing those activities, and the institutions which structure the relationships between agents have also been discussed. The task which remains is an analysis of rural markets contained with agricultural commodity chains. In this section, agricultural commodity chains for farm outputs and

produced farm inputs are discussed. Each section begins by describing the importance of the commodity under consideration. Next, changes in macro- and meso-structural conditions which directly effect the commodity and rural markets contained within its agricultural commodity chain are described. Many of these changes have their origin in the structural adjustment process. The operation of the agricultural commodity chain is then discussed from a perspective which focuses upon markups, marketing margins and price variation found within specific rural markets, when such information is available. When such information is not available, data on price spreads is presented as a second-best alternative. The emphasis in the discussion is on the capacity of rural markets to perform their price-signaling and attribute-altering role.

i. Wheat

Since its introduction in the last century, wheat has been a basic staple food in Pakistan. As a consequence, wheat is one of the most important crops in central NWFP. Most farmers try to grow wheat if they can. The purpose of such production is twofold: first, to provide a basic staple for household consumption; and second, to provide a marketable commodity. Marketed wheat comes from a number of sources. Obviously, farmers producing a surplus of wheat relative to household consumption requirements will seek to sell it in rural markets. At the same time, significant quantities of wheat continue to enter the market from landlords in receipt of wheat from sharecropping tenants who transfer the wheat as payment in kind for the use of land. Finally, wheat may also enter the market from farm labourers who have received wheat from employers as a payment in kind.

Wheat which enters the local market may be purchased by local households who do not produce their own consumption requirements. As such, a redistribution of production occurs through the market, from wheat surplus to wheat deficit households. Alternatively, wheat may leave the local market in an unprocessed form or as wheat flour for the urban markets of Mardan, Charsadda, Nowshera and Peshawar.

The guiding principle behind government policy towards wheat production since the mid-1950s had been the promotion of import substitution in wheat in an effort to enhance food security. To that end, in the mid-1960s government policy sought to enhance the adoption by farmers of a new technological 'package' of inputs designed to substantially enhance agrarian productivity in general and wheat production in particular. The new technologies involved higher-yielding modern seed varieties, the use of chemical fertilizers, and the precise application of water. The impact of new agrarian technologies on aggregate wheat production has been substantial. Average domestic production of wheat in Pakistan stood at about 6 million tons a year in the period 1965-1970. Currently, wheat production regularly

exceeds 15 million tons a year. However, the bulk of this productivity improvement occurred during the 1970s; the rate of growth of wheat production during the 1990s has been both low and irregular. Moreover, productivity improvements have been unable to keep pace with the rate of growth of population, implying a decline in per capita wheat production.

As part of its policy of import substitution, the government of Pakistan was deeply involved in the wheat market. The primary objective of wheat market policy was to cushion wheat producers and consumers from the potential price and income instabilities that integration into the international wheat market appeared to imply. It was believed that such stabilization would enhance import substitution in wheat and as such contribute to an improvement in food security.

Government intervention in the wheat market took five major forms. First, the government established a wheat procurement structure, in which farmers could sell any amount of wheat they wished in a number of pre-determined locations at annually-agreed support prices. The parastatal Pakistan Agricultural Services and Storage Corporation (PASSCO) was the institutional foundation of the wheat procurement structure. Table 3 demonstrates that PASSCO operates at multiple stages of the generalized typology of the agricultural commodity chain. Second, and in support of the first intervention, the government established an institution designed to set support prices. The most recent price-setting institution is APCOM, created in 1981. It too operates at multiple stages of the generalized typology of the agricultural commodity chain. Third, the government assumed a monopoly role in the import of wheat, through PASSCO. Fourth, the government established a system of ration shops, in which households could purchase certain quantities of wheat flour at fixed prices. Finally, the government both regulated wheat flour millers and established a number of state-owned flour mills.

Extensive state intervention in the wheat market had resource costs. During the early 1980s, the total subsidy paid by the federal and provincial governments in the wheat market fluctuated between Rs 1 and 1.5 billion. This increased to Rs 5 billion in 1985/6, which was almost 1 per cent of gross domestic product (Blomqvist 1986: 157). Wheat subsidies thus played an important part in the fiscal pressures confronting the government in the 1980s.

In this light, it is not surprising that as part of the adjustment process in agriculture state intervention in the wheat market was scaled back during the late 1980s and 1990s. During the 1980s wheat procurement became voluntary, ending the pivotal role of PASSCO in the wheat market. Concurrently, over the course of the late 1980s and the 1990s the rate of

growth of APCOMs annually-agreed support prices for foodgrains and oilseeds have been less than the rate of inflation. This implies that there has been a real decline in the support price for wheat. Indeed, as is demonstrated in Table 4, for many agricultural commodities, including wheat, the support price is now lower than the wholesale price; the support price thus acts as a floor. The rationing of wheat and wheat flour ceased in 1987. Finally, government wheat mills were privatized over the course of the late 1980s and the early 1990s.

As a consequence of this component of agrarian adjustment, subsidies have fallen. In aggregate, wheat and sugar subsidies fell from Rs 7.2 billion in 1988/89 to Rs 4.5 billion in 1992/93. The wheat market has shifted towards prices which, while still state-supported, are moving closer towards those which would reflect the operation of market forces.

In central NWFP however the changing policy regime appears to have had little impact on the operation of the wheat commodity chain. In large part this is because the policy regime which is being dismantled had little impact. The North-West Frontier Province has been and continues to be a wheat-deficit region: provincial consumption exceeds provincial production. As a consequence, as seen in Table 4, wheat prices have substantially exceeded support prices. Wheat output therefore largely failed to enter into the government procurement structure, and state intervention has had minimal impact. Granted, state intervention in wheat imports will have had an effect in NWFP as a whole. However, such imports were primarily distributed through ration shops, and ration shops were never created in rural NWFP.

Thus, despite changes in government policy structural adjustment has probably had only limited impact on the wheat commodity chain of central NWFP. The wheat commodity chain of central NWFP is illustrated in Figure 1 and Table 5. Considering the cost and revenue structures of the wheat commodity chain contained within Table 5, it would appear that the markets contained within the chain do not exhibit the degree of competition associated with competitive--and hence efficient--markets. Consider first the processing stage. The evidence in Table 5 is for commercial millers, and is thus not indicative of all processing in the wheat commodity chain. Nonetheless, inferences concerning the wheat commodity chain can be drawn from the processing stage. It is apparent that a markup exists: factoring out the transformation which occurs during the processing of wheat, a markup of over 24 per cent is recorded between the average cost of wheat and its unprocessed equivalent value. Compared to other rural markets in central NWFP, the markup is on the high side. Moreover, the marketing margin is less than 6 per cent of the sale price. Low per unit marketing costs reflect the capacity of the commercial millers to reap economies of scale in their primary marketing cost, processing. Economies of scale in turn both facilitates the markup and

Table 4:Price movements in NWFP

Year	Wheat commodity price index	Wheat support price	Wheat wholesale price	Sugar commodity price index	Sugar support price	Rice commodity price index	Rice support price	Rice wholesale price	Maize commodity price index	Maize wholesale price	Tobacco commodity price index
1980	127.5	50.00	54.56	166.6	7.23	127.1	60.00	107.92	115.0	52.67	67.1
1981	129.1	58.00	56.35	151.5	9.38	145.1	72.00	130.00	119.5	58.43	68.4
1982	118.3	58.00	67.92	78.9	9.38	94.1	83.00	138.44	98.9	72.35	75.6
1983	116.2	64.00	67.76	81.6	9.38	97.1	89.00	139.17	124.4	77.43	78.3
1984	112.4	64.00	71.04	61.8	9.38	97.5	92.00	134.76	124.3	88.09	82.1
1985	100.2	70.00	80.92	46.2	9.38	98.2	92.00	129.98	102.8	81.70	77.0
1986	84.8	80.00	83.59	63.0	9.38	88.0	95.00	120.56	80.3	81.70	78.4
1987	83.3	80.00	84.29	59.2	11.52	83.0	95.00	119.75	69.1	83.53	80.9
1988	107.1	82.50	84.36	75.6	11.52	110.3	98.00	127.75	97.9	95.21	72.8
1989	124.9	85.00	101.11	97.5	12.32	105.1	111.00	144.42	101.9	92.29	93.4
1990	100.0	96.00	108.25	100.0	13.50	100.0	124.00	146.38	100.0	100.00	100.0
1991	94.9	112.00	119.67	85.1	15.25	107.3	150.00	150.83	98.3	116.50	103.2
1992	111.5	124.00	154.67	82.5	16.75	103.0	160.00	163.36	95.4	169.30	101.4
1993	103.5	130.00	160.25	84.4	17.50	99.9	170.00	202.17	93.4	162.08	79.5
1994	110.5	160.00	167.75	96.0	18.00	119.8	181.00	243.67	98.6	199.83	87.7

Notes: Prices: US Gulf ports (wheat and maize), Australia (sugar), New Orleans (rice) and United States (tobacco), NWFP (farmgate sugarcane), NWFP (Irri-6 rice).

Source: Agricultural Statistics of Pakistan 1993/94; IMF International Financial Statistics Yearbook 1996.

Table 5: The wheat commodity chain

	Bought (Rs/kg)	Marketing costs (Rs/kg)	Primary marketing cost	Average cost (Rs/kg)	Sold (Rs/kg)	Unprocessed value (Rs/kg)	Markup (%)	Marketing margin (%)	Price variation (Rs/kg)
1. Farmer					5.09				0.2
2. Procurement (local intermediary)	5.09	0.99	Storage	6.08	5.39		-11.3	18.4	0.4
3. Processing (miller)	5.39	0.48	Processing	5.87	8.58	7.29	24.2	5.6	0.5
4. Distribution (regional intermediary)	8.58	0.65	Transport	9.23	11.80		27.8	2.3	0.0
5. Final consumer	11.80								

demonstrates a less efficient market: the markup has not acted as a spur to entry and has thus not enhanced the level of competition in the market, as witnessed in the price variation of only Rs .5 per kilogram on a sale price of Rs 8.58.

Consider next the distribution stage. The markup made by distributive intermediaries is almost 28 per cent. Moreover, marketing margins are very low, standing at just over 2 per cent of the final price. The very low marketing cost at the distribution stage consists primarily of transport. The low per unit cost of transport implies that it is subject to economies of scale. At the same time, price variation at the distribution stage does not exist. As was noted earlier, the extent of price variation can be considered to be an indication of the 'contestability' of a market: that is, of the extent to which the market behaves like a competitive market regardless of market structure. The distributive intermediaries demonstrate zero price variance. Thus, the market is not contestable.

Finally, consider the procurement stage. Table 5 demonstrates that the procurement intermediaries appear to make a loss: with the sale price being less than the average cost, the markup of wheat is negative. However, an explanation to this apparent paradox can be offered. Local wheat markets are highly cyclical; as a consequence, local prices can be highly volatile. Following a harvest, the abundance of wheat depresses the price. In the period leading up to the harvest, the increased scarcity of wheat substantially increases the price. The data was collected during a low-point of the annual price cycle, and thus probably substantially overestimates the losses incurred by those intermediaries prepared to procure and store the wheat until its scarcity value has increased. This is thus likely to be an example of a market in which a loss at one point of the seasonal cycle may in fact be a profit at another point in the seasonal cycle.

Additional evidence exists to support the argument that the data overestimates the losses incurred by intermediaries at the procurement stage. According to the procurement intermediaries themselves, their primary marketing cost consists of charges associated with storage. However, storage costs permit the procurement intermediary to offset the impact of the seasonal economic cycle. In addition, it is possible that some of the claimed storage costs do not represent a 'real' cost borne by the intermediary. Storage costs represent some 72 per cent of claimed marketing costs, an extremely high—and hence unlikely—proportion. Indeed, once storage costs are deducted from overall marketing costs, procurement intermediaries in fact make a small profit. In this light, it is possible that a portion of the storage costs in fact represents a 'fictitious' cost charged by an intermediary on the basis of inflating their costs in an effort to enhance their profitability. The capacity to charge such fictitious costs would be an indication of a less competitive--and hence less efficient--market.

From the evidence on markups, price variation, possible fictitious costs and economies of scale it would appear that the wheat commodity chain in Mardan and Charsadda districts is an example of a series of markets which lack competitive pressure. Monopsonistic market power is located amongst procurement intermediaries, processors and distributive intermediaries. In terms of the agricultural commodity chain, it would appear that agents are unequal: that capitalist processors are more powerful than peasant farmers. A conclusion that structural adjustment has done little to improve the efficiency of the wheat commodity chain and the rural markets contained within it would appear to be warranted.

ii. Sugarcane

In contrast to wheat, which is a major staple, sugarcane is the most important cash crop grown in Mardan and Charsadda districts. Sugarcane is sold by farm households to local sugar mills, which serve to process the cane into refined sugar. In some instances, contracts between farmers and processors result in farmers selling the crop prior to harvesting. In addition, sugarcane may be locally processed. It is crushed in order to extract its juice, which is then boiled to produce *gur*. Local processing may be done by farmers themselves; alternatively, cane may be procured by '*gur* makers' who process the cane and then sell the finished commodity in local and regional markets. In either instance, only a small proportion of the sugarcane that is processed into *gur* is retained by those doing the processing. Farm households produce sugarcane in order to be able to acquire income capable of being used to purchase those commodities required by the household which it does not produce. As a consequence, even if a farm household processes its sugarcane output into *gur* the bulk of such processed output will be sold to village shopkeepers and market traders. If sold to village shopkeepers, the *gur* will be purchased by local households who do not produce their own consumption requirements. As a result a redistribution of production occurs through the market. *Gur* makers are similarly motivated by the need to acquire income capable of being used to purchase commodities required by the household. As a consequence, the bulk of the output processed by *gur* makers will be sold to village shopkeepers and to market traders who sell the *gur* in regional and urban markets.

Marketed sugarcane and *gur* thus comes from a number of sources. Farmers producing processed or unprocessed sugarcane will seek to sell it in rural markets. At the same time, significant quantities of sugarcane and *gur* enter the market from landlords in receipt of both sugarcane and *gur* from sharecropping tenants who transfer the sugarcane or the *gur* as payment in kind for the use of land. Finally, limited amounts of sugarcane or *gur* may also enter the market from farm labourers who have received unprocessed sugarcane or *gur* from employers as a payment in kind.

Like wheat, the guiding principle behind government policy towards sugar production since the mid-1950s had been the promotion of import substitution in order to enhance food security. As a consequence, the government of Pakistan has been deeply involved in the sugar market. The primary objective of sugar policy was to cushion sugar producers and consumers from the potential price and income instabilities that integration into the international sugar market appeared to imply. Moreover, it was believed that import substitution in sugar had the potential to contribute to industrialization through both the development of a large-scale sugar agro-processing industry and the development of a range of commodities for which sugar was an intermediate input.

Government intervention in sugar took four major forms. First, the government established an institution designed to set support prices for both sugarcane delivered to the sugar mills and the refined sugar produced by those mills. As noted above, APCOM is the most recently created price-setting institution. Second, the government assumed a monopoly role in the import of sugar. This monopoly is currently exercised by the Trading Corporation of Pakistan (TCP). Table 3 demonstrates that the TCP operates at multiple stages of the generalized typology of the agricultural commodity chain. Third, the government established a system of rationing, through which urban households could purchase certain quantities of sugar at subsidized prices. Finally, the government heavily regulated the sugar mills. The Sugar Factories Control Act stipulated that sugar mills had to be licensed. The license established a 'millzone' around a sugar mill. Farmers were registered and on the basis of an assessment of acreage and yield were given a guarantee that they could sell a given amount of sugarcane at a fixed price if they sold their sugarcane to the mill within their millzone. In turn, the mill was obliged to purchase a certain quantity of sugarcane at a pre-determined price from farmers operating within the millzone. In addition, refined sugar produced by the mills was subject to excise tax.

With the establishment of an environment conducive to sugarcane production, it is not surprising that sugarcane production has increased in Pakistan. Average domestic production of sugarcane in Pakistan stood at about 22.5 million tons a year in the period 1965-1970. Currently, sugarcane production regularly exceeds 38 million tons a year. However, productivity is low by international standards. Per hectare yields are ranked number 69 in the world and the sugar recovery rate hovers between 8 and 9 per cent. Moreover, the combination of producer price stabilization and consumer price subsidization has had heavy resource costs. Sugar subsidies were an important component of the fiscal crisis confronting the Pakistani state during the 1980s.

As a consequence, in the early 1980s the sugar industry was deregulated. Deregulation included the derationing of sugar in 1983 and the cessation of direct controls on the open market price of refined sugar. As a consequence, there was a large increase in the open market price of refined sugar. Later in the decade sugar subsidies were reduced but not eliminated: support prices for sugar producers continued and urban households continued to be able to purchase limited quantities of sugar at subsidized prices. Thus, as noted above aggregate wheat and sugar subsidies fell from Rs 7.2 billion in 1988/89 to Rs 4.5 billion in 1992/93. At the same time, central excise duties on sugar were cut. Moreover, sugarcane mill delivery zones were abolished in 1987 by the government. Finally, investment restrictions in the sugar industry were lifted in 1987, in order to encourage private sector entry into the industry.

However, the capacity to attract greater private sector entry into the sugar industry is complicated by the competition provided by *gur* production. *Gur* is both a sugar substitute and an independent commodity. Moreover, for many consumers it is a superior commodity and thus attracts a substantial price premium. At the same time, for farmers the processing of sugarcane into *gur* reduces the cost of transport and can reduce losses arising from the highly perishable nature of sugarcane. As a consequence, when support prices for sugarcane and market prices for *gur* substantially diverge the rate of return from *gur* production can be much greater than the rate of return from sugarcane production. In such circumstances, large proportions of sugarcane are used for the production of *gur*, and increased competition can develop between sugarcane mills.

Despite increased competition from *gur* making, it is worth stressing that the government has retained its dominant position in the sugar industry. Producer subsidies continue, and indeed government support prices for sugarcane continue to have a major impact on the relative profitability of sugarcane in relation to *gur*. At the same time, consumer subsidies for refined sugar continue. Finally, and most importantly, the government's border controls on sugar imports remain stringent, operating through the TCP. As a consequence, sugar remains an agricultural commodity subject to a heavy degree of state regulation.

In central NWFP the sugar policy regime has had a large impact on the operation of the sugar market. The North-West Frontier Province is a sugar-surplus region. In an effort to control producer subsidies the government has therefore restricted the rate of growth of sugar support prices. As a consequence, farmers have increasingly limited their involvement in the refined sugar market and have increasingly turned to the production of *gur*. Sugar mills have responded by being forced to restructure.

The sugar commodity chain of central NWFP is illustrated in Table 6, while the gur commodity chain of central NWFP is illustrated in Table 7. As was demonstrated in Figure 2, both chains are intertwined. Considering the cost and revenue structures of each commodity chain, attention is first given to sugar. Table 6 demonstrates that the sugar commodity chain does not appear to be contestable. Consider first the processing stage. When sugar mills acquire sugarcane directly from farmers, the markup between the average cost of production and the value of the unprocessed equivalent of the transformed commodity is 27 per cent. Granted, markups are much lower when cane is bought from procurement intermediaries: but such intermediaries do not dominate the supply of sugarcane. Moreover, the per unit cost of processing is very low: marketing margins are only 1.9 per cent. Economies of scale at the processing stage have not however enhanced competition: with only one mill per district, and zero price variation, it would not appear that the sugar commodity chain is competitive at the processing stage.

Switching attention to the *gur* commodity chain, Table 7 indicates that it is also at the processing stage where market-making power is located. The markup between the average cost of production and the value of the unprocessed equivalent of the transformed *gur* is 140 per cent. Marketing costs are 10 per cent of the final sale price, while a price variation of Rs .4 on an average sale price of Rs 17.03 does not appear to be a very large variation. The direct purchase of *gur* by *gur* makers from farmers who have already produced the final product is much less profitable: but, with a markup between the average cost of production and the final sale price of almost 7 per cent, it is still profitable. The high markups involved in the processing of procured sugarcane into *gur* indicates a surprising lack of competitiveness: in what is a highly localized market, it might be expected that high markups would act as a spur to market entry and as a consequence reduce the markups through the effect of competitive activity. Such has not occurred.

From the evidence on marketing margins, markups, price variations and economies of scale it would appear that the sugarcane commodity chain in Mardan and Charsadda districts consists of less competitive market structures, in the sense that high markups have not attracted entry into what is profitable activity. Monopsonistic market power is located primarily at the processing stage, amongst sugar mills and *gur* makers. In terms of the agricultural commodity chain, it would appear agents located within the sugarcane commodity chain are unequal: that capitalist sugar mills and *gur* makers are more powerful than peasant farmers. A conclusion that structural adjustment has done little to enhance the efficiency of the markets contained within the sugarcane commodity chain would appear to be warranted.

Table 6: The sugar commodity chain

	Bought (Rs/kg)	Marketing costs (Rs/kg)	Primary marketing cost	Average cost (Rs/kg)	Sold (Rs/kg)	Unprocessed value (Rs/kg)	Markup (%)	Marketing margin (%)	Price variation (Rs/kg)
1. Farmer					1.05				0.0
2. Procurement									
(local intermediary)	1.05	0.35	Storage	1.40	1.42		1.4	24.6	0.1
3. Processing									
(mill)									
i. from farmer	1.05	0.36	Processing	1.41	20.00	1.79	27.0	1.9	0.0
ii.from procurement	1.42	0.36	Processing	1.78	20.00	1.79	0.6	1.9	0.0
4. Distribution									
(regional intermediary)	20.00		Storage		21.00				
5. Final consumer	21.00								

Table 7: The *gur* commodity chain

	Bought (Rs/kg)	Marketing costs (Rs/kg)	Primary marketing cost	Average cost (Rs/kg)	Sold (Rs/kg)	Unprocessed value (Rs/kg)	Markup (%)	Marketing margin (%)	Price variation (Rs/kg)
1. Farmer					15.33				2.0
2. Procurement									
(local intermediary)	1.05	0.35	Storage	1.40	1.42		1.40	24.6	0.1
3. Processing									
(*gur* maker)									
i. from farmer	15.33	0.60	Storage	15.93	17.03		6.9	10.3	0.4
ii.from procurement	1.42	1.76	Processing	3.18	17.03	7.66	140.9	10.3	0.4
4. Distribution									
(regional intermediary)	17.03		Storage		20.00				0.4
5. Final consumer	20.00								

iii. Rice

Rice is an important staple food in the agro-food system of central NWFP. However, only limited quantities of rice are grown in the area. Farmers who undertake the cultivation of rice overwhelmingly do so in order to use land which is unsuitable to other agricultural activities for the production of a basic staple for household consumption. Only limited quantities of rice are marketed, because few households produce surplus quantities to sell on rural markets. That rice which does enter the local market is purchased by rural households who do not produce their own consumption requirements. Rice does not appear to leave the highly localized rural markets of central NWFP.

As in wheat and in sugar, government policy in Pakistan towards rice production since the mid-1950s had been the promotion of import substitution in an effort to enhance food security. To that end, in the mid-1960s government policy sought to enhance the adoption by farmers of the new technological package of inputs designed to substantially enhance agrarian productivity in general and rice production in particular. The impact of new agrarian technologies on aggregate rice production has been substantial. Domestic production of rice in Pakistan stood at about 1.3 million tons in the period 1965/66. Currently, rice production regularly stands at 3.2 million tons a year. However, the bulk of this productivity improvement occurred during the 1970s; the rate of growth of rice production during the 1990s has been both very low and irregular. Moreover, productivity improvements have been unable to keep pace with the rate of growth of population, implying a decline in per capita rice production.

In an effort to enhance production, policy sought to cushion rice producers and consumers from the price and income instabilities associated with integration into international rice markets. To that end, the government established a rice procurement structure. The parastatal Rice Export Corporation of Pakistan (RECP) was the institutional foundation of the rice procurement structure. Table 3 demonstrates that the RECP operates at multiple stages of the generalized typology of the agricultural commodity chain. In support of government procurement, support prices were set by state institutions. As elsewhere, APCOM is the most recently created price-setting institution. The government also assumed a monopoly position in the import and export of rice, through the RECP. Finally, the government established a number of state-owned rice mills.

However, the resource costs associated with this procurement and price structure led to it being scaled back as part of the structural adjustment process in agriculture. The procurement and export monopoly of the RECP has been ended. Indeed, incentives have been developed to promote the export of rice. However, rice does remain quite protected from international

competition. As was the case in the wheat sector, rice mills were privatized by the government. In aggregate, the rice market has shifted towards prices which, while still state supported, are closer to those which would reflect the operation of market forces.

In central NWFP the changing policy regime in the rice market has had little impact. As noted, the region is a rice deficit area. As a consequence, Table 4 demonstrates that prices for IRRI rice are greater than the support prices offered elsewhere in Pakistan. Granted, rice is in part a wheat substitute and is thus effected by trends in the wheat price. However, for many consumers local rice is a superior commodity and thus attracts a substantial price premium.

Thus, despite changes in the rice policy regime structural adjustment has probably had only limited impact upon the rice commodity chain of central NWFP. The rice commodity chain for central NWFP is illustrated in Figure 3 and Table 8. Considering the cost and revenue structure of the rice commodity chain, Table 8 demonstrates that processors make substantial gains. Purchasing unprocessed rice, the markup between the average cost of production and the value of the unprocessed equivalent of the transformed rice is over 61 per cent. Marketing margins are less than 5 per cent. However, there is comparatively wide price variation: a spread of Rs 2 per kilogram is recorded. By way of contrast, the markups at the other stages of the rice commodity chain are comparatively lower, the marketing margins of the same degree of magnitude, and the price variations by and large wider. In this light, it is difficult to assess the extent of competitiveness within the markets of the rice commodity chain. Certainly, the markup charged by processors is, especially in comparative terms, high. However, marketing margins are also comparatively high and, importantly, the extent of price variation is much wider than that witnessed in either wheat, sugar or *gur*. Thus, while there is market power located amongst processors it may not be monopsonistic market power. What can be said is that compared to the wheat and sugarcane commodity chains the markets of the rice commodity chain are more competitive. It is thus likely to contain more efficient markets than those for wheat or sugar.

iv. Maize

Like wheat, maize was introduced to central NWFP in the last century. It rapidly established itself as an important staple, particularly amongst the poor. As a consequence, maize is one of the most important crops in central NWFP. A significant proportion of farmers grow some maize. The purpose of such production is primarily to provide a basic staple for household consumption. However, some maize is marketed. Marketed maize comes primarily from farmers producing a surplus relative to household consumption requirements. At the same time, limited quantities of maize may also enter the market from farm labourers who have received maize from employers as a payment in kind. Landlords rarely receive maize as a

Table 8: The rice commodity chain

	Bought (Rs/kg)	Marketing costs (Rs/kg)	Primary marketing cost	Average cost (Rs/kg)	Sold (Rs/kg)	Unprocessed value (Rs/kg)	Markup (%)	Marketing margin (%)	Price variation (Rs/kg)
Farmer									
i. Unprocessed					5.20				0.0
ii. Processed					13.50				1.0
2. Processing	5.20	0.66	Processing	5.86	14.14	9.47	61.6	4.7	2.0
3. Procurement and distribution									
i. from farmer, processed	13.50	0.61	Storage	14.11	14.78		4.7	4.4	3.3
ii. from processor	14.14	0.61	Storage	14.75	14.78		0.2	4.4	3.3
4. Final consumer	14.78								

payment in kind. Maize which enters the local market is purchased by local households who do not produce their own consumption requirements. Comparatively little maize leaves the local market in an unprocessed form for the closest maize mill or the urban markets of Mardan, Charsadda, Nowshera and Peshawar.

While government agricultural policy has since the mid-1950s been seeking to enhance food security through import substitution, policy initiatives towards maize have been limited. A procurement structure was not set up, and support prices have only been used three times in the last 20 years—and not at all in the last ten. Maize prices are thus market-determined, and production a function of decisions made at the level of the household. In this context, it is interesting to note that domestic production of maize in Pakistan has increased. In 1965/66 production stood at just over 0.5 million tons. Currently, maize production regularly reaches 1.2 million tons a year.

It is probably fair to say that government policy has had only limited impact on the maize market of central NWFP. Granted, maize is a wheat and rice substitute and is thus effected by government policy towards wheat and rice. However, maize is an inferior food staple and its status as an inferior commodity will limit shifts to maize consumption based upon the relative prices of maize, wheat and rice. Of perhaps greater importance has been government policy towards the edible oil market, which does effect market demand for maize. However, as noted above the market for maize in NWFP is highly localized, with only limited quantities leaving the region. As a consequence, government policy cannot be considered an important factor in the maize market of central NWFP.

The maize commodity chain of central NWFP is illustrated in Figure 4 and Table 9. Considering the cost and revenue structures of the maize commodity chain, Table 9 demonstrates that markets within the chain appear to be competitive. The markup charged by processors between the average cost of production and the value of the unprocessed equivalent of the milled maize is a comparatively modest 6.8 per cent. Marketing costs are, compared to other output markets in the region, high, at 11 per cent. Price variation is however limited. At the procurement stage, the markup is negative. This result is however deceptive. The primary cost claimed by the procurement intermediaries is one of storage: the localized nature of the market reduces transport, and no processing is performed. Storage may thus well be fictitious, charged on the basis of inflating costs. Indeed, if storage costs are deducted from marketing costs procurement intermediaries make a small profit of Rs 0.06 per kilogram. As a consequence, it would appear that the actual return to procurement intermediation on the maize market may be higher than that recorded.

Table 9: The maize commodity chain

	Bought (Rs/kg)	Marketing costs (Rs/kg)	Primary marketing cost	Average cost (Rs/kg)	Sold (Rs/kg)	Unprocessed value (Rs/kg)	Markup (%)	Marketing margin (%)	Price variation (Rs/kg)
1. Farmer					5.08				0.2
2. Procurement									
(local intermediary)	5.08	0.60	Storage	5.68	5.32		-6.3	11.3	0.3
2. Processing									
(milling and distribution)	5.08	0.83	Processing	5.91	7.01	6.31	6.8	11.8	0.3
4. Final consumer	5.32 / 7.01								

From the evidence on markups, marketing margins and price variation it would appear that the maize commodity chain of central NWFP contains more competitive markets when compared to wheat and sugarcane. However, it is difficult to say which if either of the maize or the rice commodity chains are more competitive. The much lower markups in the maize commodity chain are to a degree offset by the capacity to charge a fictitious cost, while the higher markups in the rice commodity chain are to a degree offset by a higher degree of price variation than might be expected in such a localized set of markets.

v. Tobacco

Tobacco is the second most important cash crop grown in central NWFP. Indeed, over 40 per cent of total Pakistani production comes from central NWFP. Tobacco, of either the flue-cured Virginia or white Patta type, is sold by the petty commodity producing peasant farm households that produce it to procurement agents, who in turn sell the tobacco to state-owned companies which process the tobacco into cigarettes. Alternatively, farm households may sell tobacco directly to the processor. Farm households produce and market tobacco in order to be able to acquire income capable of being used to purchase those commodities required by the household which it does not produce. Therefore, only a small proportion of the tobacco that is produced by the farm is retained by the household for its own consumption. Once the cigarettes have been produced, distributive intermediaries in regional and local markets serve to sell the commodity to the final consumer.

As with other agricultural commodities, government policy towards tobacco production since the mid-1950s has sought to promote import substitution. The objective has been to enhance self-sufficiency and thus ease balance of payments constraints. Moreover, import substitution in tobacco had the potential to contribute to industrialization through the development of a large-scale cigarette industry. Finally, the development of a cigarette industry had the potential to make a substantial contribution to government tax revenues. As a consequence, the government has been and continues to be deeply involved in the tobacco market.

Government intervention in the tobacco market takes the form of a tight regulatory regime which operates through parastatal cigarette manufacturers. Parastatals must specify their demand for flue-cured Virginia tobacco to registered tobacco farmers in advance of planting, they must enter into contracts with such farmers based upon acreage and demand in advance of planting, and they must assist in the free provision of seed directly or through the Pakistan Tobacco Board. The government, in consultation with registered farmers and the parastatal manufacturers, sets grade-based minimum prices for both flue-cured Virginia and white Patta tobacco at the beginning of the season. Parastatal manufacturers must use the minimum price as a floor when settling pre-arranged contracts with farmers or when buying white Patta

tobacco on the open market. Finally, imports of both tobacco and cigarettes are limited by tariff barriers to trade.

While state intervention in the tobacco industry has undoubtedly had resource costs, there has been little restructuring in the industry in the wake of the structural adjustment process. This is because of the role played the excise duty on cigarettes in sustaining the fiscal position of the government. However, the regulated environment has not facilitated an increase in tobacco production in Pakistan, and thus an increase in the excise revenues accruing to the government. Average domestic production of tobacco in Pakistan has stood at or below 100000 tons for the past thirty years.

In central NWFP the tobacco policy regime has a large impact on the operation of the tobacco commodity chain. The cost and revenue structures of the tobacco commodity chain of central NWFP are illustrated in Table 10. However, the information contained in Table 10 lacks the detail of previous tables due to a lack of cooperation on the part of the parastatal manufacturers. In particular, it is necessary to use data on price spreads as comprehensive information on markups and marketing margins was not available. Examining then the information on the structure of the tobacco commodity chain, Table 10 demonstrates that if petty commodity producing peasant farmers sell on to agents who act as procuring intermediaries, the latter markup tobacco by under 2 per cent. Moreover, marketing costs comprise 6.4 per cent of the final sale price of the agent. These costs are largely real, consisting primarily of transport. Price variations of some Rs 2.20 per kilogram are recorded.

However, the heart of the tobacco commodity chain lies with the parastatals, and it is here were it appears possible to characterize the markets within the chain as uncompetitive despite the lack of evidence on markups and marketing margins. Cigarette manufacturers can acquire tobacco either directly from farmers or from procuring intermediaries. At this point, state regulations guarantee them a monopsonistic position. As a partial consequence, the price spread between purchase and sale price is huge: over 1500 per cent in the case of purchases from procuring intermediaries, and almost 1700 per cent in the case of purchases directly from farmers. Of course, at the processing stage the tobacco is substantially transformed. Moreover, the excise duty on cigarettes does account for a substantial proportion of the price spread between purchase and sales price. In 1996 excise duty comprised over 71 per cent of the final cost of cigarettes. At the same time though cigarette manufacturers do exhibit market power: the price spread between the purchase and sale price at the distributive intermediary stage is strictly regulated by the parastatal manufacturers, being just over 28 per cent.

Table 10: The tobacco commodity chain

	Bought (Rs/kg)	Marketing costs (Rs/kg)	Primary marketing cost	Average cost (Rs/kg)	Sold (Rs/kg)	Unprocessed value (Rs/kg)	Markup (%)	Marketing margin (%)	Price variation (Rs/kg)
1. Farmer					29.73				3.0
2. Procurement									
(local intermediary)	29.73	2.09	Transport	31.82	32.43		1.9	6.4	2.2
3. Processing									
(manufacturer)									
i. from farmer	29.73		Processing		533.33	480.00			By brand
ii. from procurement	32.43		Processing		533.33	480.00			By brand
4. Distribution									
(local and regional intermediary)	533.33		Storage		683.33				0.0
5. Final consumer	683.33								

From the limited evidence it is difficult to draw any conclusions on the efficiency of the markets within the tobacco commodity chain as a whole. However, there can be no doubt that in the cigarette market the monopsonistic position of the parastatal manufacturers confers upon them a significant degree of market-making power. In terms of the agricultural commodity chain, it would appear agents located within the markets of the tobacco agricultural commodity chain are unequal: that parastatals are more powerful than peasant farmers. In this light, it seems reasonable to conclude that the structural adjustment process has done little to improve the efficiency of the markets within the tobacco commodity chain.

vi. Output summary

Based upon markups, marketing margins, price variations and price spreads it would appear possible to offer a twofold comparative classification of the competitiveness of the output agricultural commodity chains of central NWFP. First, there would be those chains which, with comparatively high per unit markups, low per unit marketing margins, and limited price variance, appear to be less competitive. The markets within such chains do perform a price-signaling and attribute-altering role, but they do not appear to be as efficient as they might be because of the capacity of corporate capital to utilize a high degree of monopoly in monopsonistic activities to regulate markets to their own advantage. The tobacco, sugar, *gur*, and wheat commodity chains would fall into this category. Second, there would be those agricultural commodity chains which, with more moderate per unit markups, moderate per unit marketing margins, and with greater degrees of price variance, do appear to exhibit competitiveness. The markets contained within such chains display at least a degree of efficiency in the performance of a price-signaling and attribute-altering role. The maize commodity chain would fall into this category; the rice commodity chain may fall within this category, but it is less than clear.

vii. Seeds

Turning now to produced inputs, it should be reiterated that for policymakers pursuing structural adjustment in agriculture, a major issue is that reform must tackle input subsidies. This applies across produced inputs, including the first commodity chain that is examined, that of seeds.

Seeds are a necessary input in the agricultural production process, being required by all those engaged in farming. Historically, farmers in central NWFP produced their own seed. However, the introduction of modern hybrid seed varieties in the wake of the Green Revolution in the mid-1960s in Pakistan created seed markets. This occurred because the modern varieties do not 'breed true': the seeds produced by hybrid plants do not produce seeds which contain the same genotypes as the parent plant. Rather, modern varieties must

be bred under carefully controlled and complex conditions if hybrid vigour is to be maintained. Therefore, the introduction of modern varieties necessitated the development of an agro-chemical sector capable of producing modern seed varieties.

To that end, government intervention occurred in the nascent seed market. The government pursued an import substitution strategy in order to build up an agro-chemical sector capable of contributing to the promotion of food security. At the same time, it was believed that the creation of an indigenous seed industry would contribute to industrialization. Government intervention in the nascent seed market took three main forms. First, the government created substantial barriers to trade in plant genetic material. Second, a licensing system was created for entry into and expansion within the agro-chemical sector. The combined effect of these two interventions was the creation of a substantial home market for seeds in which entrants engaged in production would face restrictions on the amount of competition they faced. Third, the government began subsidizing the purchase of modern seed varieties by farmers through the creation of seed delivery agencies. This enhanced the potential profitability of entry into the restricted home market for those enterprises which produced and sold seeds to the government. The government thus sought to use policy to attract transnational capital involved in the agro-chemical sector.

While this policy regime was largely successful in establishing the use of modern wheat varieties throughout the country, it was less successful in rice and in 'inferior' foodgrains such as maize. As a partial consequence of this mixed record, during the course of the structural adjustment process in agriculture this policy regime has been dismantled. The state has shifted from bypassing the market into playing a so-called 'market-enhancing' role. Private capital has received incentives to expand in a deregulated seed industry. Thus, the duty-free import of inbred lines for the production of hybrid seeds has been permitted; the import of vegetable seeds has been exempted from customs duties; and the duties payable on imported seed processing and testing equipment have been cut to 10 per cent. At the same time, the government has sought to enhance its capacity to regulate the seed industry through the enactment of the Truth-in-Labeling Act and the Plant Variety Protection Act. Finally, in line with the conditionalities of the structural adjustment process state-supported seed subsidies have become almost insignificant. In this context it is also worth noting that energy subsides have been cut, if not eliminated. Thus, the price of kerosene and petrol rose by almost 50 per cent between 1987/88 and 1990/91.

In central NWFP the seed policy regime has a major impact on the operation of seed commodity chains. The wheat, rice and maize seed commodity chains are illustrated in Figures 1, 3 and 4 and in Tables 11, 12 and 13 respectively. Unfortunately, limited

cooperation by those involved in seed commodity chains has meant that data is limited to price spreads. While information on primary marketing costs was collected, information on markups and marketing margins was not made available by market participants.

Examining first the wheat seed commodity chain in Table 11, the only stage in which a price spread occurs is at the stage of distributive intermediary. However, the procurement intermediaries of the corporate agro-chemical manufacturer closely monitor price spreads at the distributive intermediary stage, in order to ensure that they fall within the range permitted by the manufacturer. Thus, while the price spread for the distributive intermediary in wheat seeds demonstrated in Table 11 is only 5 per cent, the capacity of the manufacturer to essentially dictate the size of the price spread indicates less than competitive market conditions within the chain. At the same time, detailed consideration of the evidence indicates that distributive intermediaries in receipt of wheat seeds from procurement intermediaries tend to be few in number and limited to specific geographical areas. This also implies less competitive markets within the wheat seed commodity chain.

Turning next to rice seeds, Table 12 shows that the only stage in which a price spread occurs is at the stage of distributive intermediary. Once again, procurement intermediaries of the manufacturer closely monitor price spreads in order to ensure that they fall within the range permitted by the manufacturer. However, while the price spread for the distributive intermediary in wheat seeds was only 5 per cent, Table 12 demonstrates the price spread permitted by the manufacturer is substantially greater: almost 110 per cent. Nonetheless, despite this large price spread the capacity of the manufacturer to dictate the size of the price spread indicates less competitive markets within the commodity chain. Once again, detailed consideration of the evidence indicates that those who purchased rice seed in a number of different geographical locations did so from one distributive intermediary. The absence of competition at the distributive intermediary stage also implies less competitive markets within the commodity chain for rice seeds.

The maize seed commodity chain operates somewhat differently, in part because maize is an inferior foodgrain, and in part because of the role played by state-owned enterprises in the distribution of seed. Table 13 demonstrates that the price spreads that occur at both the procurement and distributive intermediary stage are small. However, there is a difference in the size of the price spreads in these two stages. The procurement intermediary is able to charge 10 per cent more than the price of acquisition, while the distributive intermediary only able to utilize a 1 per cent spread. Given that information on the relationship between the manufacturer and the state-owned depot is not known, it is not possible to gauge the extent of market competitiveness within the maize seed commodity chain.

Table 11: The wheat seed commodity chain

	Bought (Rs/kg)	Sold (Rs/kg)	Primary marketing cost
1. Manufacturer			
2. Procurement (regional intermediary)		8.00	Transport
3. Distribution (local intermediary)	8.00	8.40	Storage
4. Farmer	8.40		

Table 12: The rice seed commodity chain

	Bought (Rs/kg)	Sold (Rs/kg)	Primary marketing cost
1. Manufacturer			
2. Procurement (regional intermediary)		5.53	Storage
3. Distribution (local intermediary)	5.53	11.60	Transport
4. Farmer	11.60		

Table 13: The maize seed commodity chain

	Bought (Rs/kg)	Sold (Rs/kg)	Primary marketing cost
1. Manufacturer			
2. State-owned depot		5.00	Transport
3. Procurement (regional intermediary)	5.00	5.50	Storage
4. Distribution (local intermediary)	5.50	5.55	Transport
5. Farmer	5.55		

Thus, the competitiveness of both the wheat and rice seed commodity chains appear limited,. Hence, the extent of market efficiency is likely in both cases to be less than that which might be considered optimal. In both cases, corporate capital appears able to effectively regulate the operation of markets despite structural adjustment in agriculture. Moreover, it can be noted that by providing tobacco seeds without cost the operation of the tobacco seed commodity chain is totally regulated by the manufacturer. It would appear that agents located within the wheat, rice and tobacco seed commodity chains are unequal: that manufacturers are more powerful than other agents. In the case of the maize seed commodity chain it is not possible to draw any conclusions concerning the extent of competitiveness.

viii. Fertilizer

Innovations in seeds were the cornerstone of the new agricultural technologies adopted in Pakistan in the mid-1960s. However, in order to generate productivity increases from the modern seed varieties it was also necessary to use other, complementary, inputs. A critical complementary input was chemical fertilizer designed to stimulate growth in hybrid plants. As a consequence, just as the introduction of modern seed varieties created seed markets in

central NWFP, so too did the introduction and adoption of chemical fertilizers create chemical fertilizer markets.

With the emergence of a need to secure supplies of chemical fertilizers, the government faced three policy possibilities. First, it could opt for imports. However, were international prices to rise beyond the reach of farmers, this would imply either a reduction in the rate of adoption by farmers or government subsidization and its associated resource costs. Second, the government could opt to create an import-substituting chemical fertilizer industry within the agro-chemical sector. This implied heavy capital investment. Third, it could opt for a combination of the two.

The government chose the third option. However, the balance within the government policy regime did shift between the mid-1960s and the mid-1980s. Initially, the government established a complex licensing system for entry into and expansion within the chemical fertilizer industry. It also established an import licensing scheme for chemical fertilizers, which tied imports to existing chemical fertilizer producers or to state-owned distributors. The purpose behind this pair of interventions was to establish a home market within which entrants engaged in production would face limited domestic and international competition. At the same time however, in order to develop a demand for chemical fertilizers the government established a pricing structure for imported and domestically produced products.

In order to offset the financial implications of regulated pricing on market entrants, the government established a subsidy system. Subsidies covered the spread between the import and domestic price, thus ensuring the rate of return for importers. Producer subsidies were similarly designed to offset disadvantageous domestic prices and thus guarantee market entrants a rate of return on their investment. In the beginning the subsidy system worked through the establishment of state-owned fertilizer distributive intermediaries. Thus, the government sought to use policy to encourage the entry of transnational agro-chemical capital into Pakistan. Subsequently, the government established state-owned fertilizer production facilities and permitted entry of private sector agents into distribution.

This policy regime was highly successful in establishing chemical fertilizers as an essential part of the agricultural production process. For example, in NWFP the use of nitrogen-based fertilizers increased from almost 26000 tonnes in 1971/72 to over 106000 tonnes in 1993/94. Over the same period the use of phosphate-based fertilizers increased from 3700 tonnes to 31400 tonnes. Moreover, whereas imports of chemical fertilizers were 10.7 per cent higher

than domestic production in 1973/74, in 1993/94 domestic production of chemical fertilizers was 329 per cent higher than imports.

However, the policy regime had heavy resource costs. Fertilizer subsidies cost the government Rs 25 million in 1971/72. While fertilizer subsidies peaked at Rs 2455 million in 1979/80, they were still costing the government Rs 2415 million in 1988/89. Moreover, such figures failed to account for the subsidization of the energy inputs which are essential to the production of chemical fertilizers. These resource costs were an important factor in propelling the government into an adjustment process.

As a consequence, during the course of the structural adjustment process the policy regime has substantially shifted, particularly in the domestic fertilizer industry. In 1987 the domestic fertilizer industry witnessed the ending of price regulations for nitrogenous fertilizers. In the period which followed a large number of government regulatory interventions in the domestic market were eliminated. In addition, the government has privatized some of its fertilizer production facilities, and plans to continue the process. Finally, domestic fertilizer subsidies ceased in 1993. It is also worth noting that energy subsides have been cut, if not eliminated. Thus, the price of kerosene and petrol rose by almost 50 per cent between 1987/88 and 1990/91. By late 1993 the market thus determined the prices and quantities of domestic fertilizer. Moreover, while price controls on imported fertilizers remain, import subsidies are falling in real terms and import restrictions have been lifted. The fertilizer market is thus being liberalized.

In central NWFP the fertilizer policy regime has had an important impact on the operation of the fertilizer commodity chain. Figures 1 through 4 and Table 14 illustrate the commodity chain for urea. Urea is the most important domestically produced chemical fertilizer; indeed, NWFP has a urea plant with a production capacity of 44000 nutrient tonnes. Moreover, until recently urea was still an important import. As noted earlier, large-scale commercially manufactured urea is transferred by corporate capitalists to procurement intermediaries who, acting as agents on behalf of the capitalist, sell the urea to petty distributive retailing intermediaries. The corporate agro-chemical manufacturer closely monitors the price spreads of the procurement intermediary while at the same time using the procurement intermediary to monitor the price spreads of the distributive intermediary. Thus, price spreads fall within ranges permitted by the manufacturer. In this light, while the price spread at both the procurement and distributive stage is only a meagre 1.4 per cent, the capacity of the manufacturer to dictate the size of the price indicates less competitive markets within the commodity chain. Moreover, the manufacturer limits the procurement intermediaries, further indicating less competitive markets. Thus, despite changes in the urea commodity chain as a

Table 14: The urea commodity chain

	Bought (Rs/kg)	Sold (Rs/kg)
1. Manufacturer		7.00
2. Procurement (regional intermediary)	7.00	7.10
3. Distribution (local intermediary)	7.10	7.20
4. Farmer	7.20	

consequence of the structural adjustment process, it would appear that corporate capital is able to effectively regulate the operation of the markets within the chain. It would appear that agents located within the fertilizer commodity chain are unequal: that manufacturers are more powerful than other agents.

ix. Pesticides

The final produced input to be considered is that of pesticides. While an important part of the productivity increases brought about by the new agricultural technologies introduced in the mid-1960s, pesticides are only sparingly used in central NWFP. Nonetheless, the fact that they are used means that just as the introduction of modern seed varieties created seed markets in central NWFP, so too did the introduction and adoption of pesticides create pesticide markets.

With the emergence of a need to secure supplies of pesticides, the government chose to boost imports while at the same time seeking to create an import-substituting pesticide industry within the agro-chemical sector. Initially, the government established a complex licensing system for entry into and expansion within the pesticide industry. It also established an import licensing scheme for pesticides. The purpose behind this pair of interventions was to establish a home market within which entrants engaged in production would face limited domestic and international competition. At the same time, in order to develop a demand for

pesticides the government established a subsidy system. This operated through the Plant Protection Department, which initially both procured and distributed pesticide. Thus, the government sought to use policy to encourage the entry of transnational agro-chemical capital into a protected Pakistani market.

The policy framework did establish a domestic pesticide industry. In 1980 total pesticide consumption amounted to 665 tonnes. By 1993 this had increased to 20279 tonnes, of which almost 70 per cent was domestically produced. Nonetheless, the costs associated with the policy framework, when combined with the comparative lack of importance of the sector, meant that the pesticide policy regime was one of the earliest to be transformed during the structural adjustment process in agriculture. The import and distribution of pesticide was privatized in 1980. The pesticide sector was further deregulated in 1985 in terms of licensing, pricing and imports. In the early 1990s pesticides subsidies were abolished. Moreover, energy subsides were cut, if not eliminated. Thus, the price of kerosene and petrol rose by almost 50 per cent between 1987/88 and 1990/91. As a consequence, pesticide prices and quantities are now market determined.

In central NWFP the pesticide policy regime has had an impact on the operation of the commodity chain. Figures 1 through 4 and Table 15 illustrate a pesticide commodity chain. As demonstrated in Table 15, price spreads occur only at the distribution stage, because the procurement intermediary acts as a dealer on behalf of the manufacturer and is thus paid by the capitalist. The corporate agro-chemical manufacturer uses the procurement intermediary to monitor the price spreads charged by the distributive intermediary. Thus, price spreads fall within ranges permitted by the manufacturer. In this light, while the price spread at the distributive stage is only 31.6 per cent, the capacity of the corporate manufacturer to dictate the size of the price spread indicates less competitive markets within the commodity chain. Moreover, by paying the procurement intermediary the manufacturer limits their scope for independent activity, further indicating less competitive markets. Thus, despite changes in the pesticide commodity chain as a consequence of the structural adjustment process, it would appear that corporate capital is able to effectively regulate the operation of the chain. It would appear that agents located within the pesticide commodity chain are unequal: that manufacturers are more powerful than other agents.

x. Input summary

The competitiveness of produced input commodity chains in central NWFP appears to be very limited. Markets within these commodity chains do perform a price-signaling and attribute-altering role, but it is unlikely that they are efficient. Transnational and corporate capital uses a near-monopoly position to regulate market activities in order to sustain their

Table 15: The pesticide commodity chain

	Bought (Rs/litre)	Sold (Rs/litre)
1. Manufacturer		
2. Procurement (regional intermediary)		247.00
3. Distribution (local intermediary)	247.00	325.00
4. Farmer	325.00	

own position. Thus, in seeds, fertilizer and pesticides transnational agro-chemical capital appears capable of regulating markets despite structural adjustment. The capacity of transnational capital to regulate markets render plausible the conclusion that market efficiency is less than that which might be considered optimal.

VII. CONCLUSION

This paper has examined rural output and produced input agricultural commodity chains in Mardan and Charsadda districts of central NWFP and the rural markets contained within such chains. The conclusion of these detailed examinations is inescapable. Based upon markups, marketing margins, price variance and price spreads a twofold comparative classification of the agricultural commodity chains of central NWFP was developed. First, there were agricultural commodity chains which were, with high per unit markups, low per unit marketing margins, and minimal price variation, in practical terms less competitive. The markets within such chains perform a price-signaling and attribute-altering role, but do not appear to be efficient because of the capacity of capital to utilize a high degree of monopoly to pursue monopsonistic activities which regulate markets. Second, there are agricultural commodity chains which, with smaller per unit markups, slightly higher per unit marketing margins, and a wider range of price variance, exhibited greater degrees of competitiveness in their markets. The markets of such chains display a degree of efficiency in the performance of a price-signaling and attribute-altering role

Just as capitalist market-makers were able to regulate the operation of output commodity chains, so too were capitalist market-makers able to regulate the operation of produced input commodity chains. The produced input markets found within such commodity chains in central NWFP performed a price-signaling and attribute-altering role, but they are unlikely to be efficient because of the capacity of transnational capital to utilize its near-monopoly position to regulate market activities.

In both output and produced input agricultural commodity chains then the capacity of capital to regulate market activities is witnessed. In this light, it is not surprising that the structural adjustment process in agriculture appears to have had little impact upon the operation of rural markets. Adjustment has not addressed the core issue involved in effecting the capacity of markets to allocate resources: the power of capital within agricultural commodity chains. Indeed, adjustment may have enhanced inefficient resource allocation by enhancing the power of capital. These conclusions mirror those offered by the National Agricultural Commission Report, which revealed extensive evidence of collusion and fictitious costs amongst the activities of the corporate marketing intermediaries of rural Pakistan (*The News* 20/08/96). Adjustment which fails to attack the issue of hierarchies of economic power in the operation of markets therefore seems unlikely to improve economic and social outcomes.

Rural markets in central NWFP are hierarchical structures which economic agents enter on unequal terms and affect in unequal ways. The result, to quote a Pahtan saying, is that "we earn only for you": an unequal division of the outcomes of economic activity serves to deepen existing inequalities. The capacity of programme interventions such as structural adjustment to fulfill their explicitly articulated goals cannot be viewed in isolation from the prevailing parameters of power and privilege which structure rural societies. To do so is to court failure.

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