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INTRODUCTION TO THE INDONESIAN
SOCIAL ACCOUNTING MATRIX

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Shifts in official government policy toward greater emphasis on "who gets what" challenge national statistical offices in Indonesia and other countries to produce an answer quite different from, but nonetheless related to, more conventional concerns for national accounts, fiscal policy, balance of payments, investments, savings, inter-industrial flows, and the like. Since Indonesia and many other countries have already devoted considerable resources to integrating various aspects of these conventional concerns within an input-output framework, it is advantageous to show how such a framework can be extended to incorporate data on "who gets what".

Social Accounting Matrices, called "SAMs" for short, go beyond both input-output tables and A System of National Accounts (SNA) [UNSO (United Nations Statistical Office), 1968] by integrating within their frameworks more disaggregated data about various social groups, in particular different types of labor and households.

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The complete Indonesian System of Socio-economic Accounts (SSA) attempts to enlarge previous SAMs which are primarily sets of accounts denominated in monetary values.¹ By employing a "core classification" of factors and households, it organizes information about such topics as demography, education, employment, land and nutrition in non-monetary terms. These non-monetary accounts add even more social considerations to a SAM framework, moving it Towards a System of Social and Demographic Statistics (SSDS) [UNSO, 1975]. These additional "real" accounts are interesting in themselves and instrumental in calculating the system's monetary accounts. The present paper introduces only a few non-monetary accounts and suppresses some detail of the monetary accounts.²

The first Indonesian System of Socio-economic Accounts (SSA) attempts to give an overview of socio-economic conditions in the calendar year 1975, the most recent year for which an input-output table was being constructed at the time this study began. Such a table, along with the availability of extensive labor-force and consumption surveys, make 1975 an opportune year to construct an SSA. It also comes at the beginning of Indonesia's Second Five-Year Development Plan. With a 1975 SSA as a benchmark and other SSAs for subsequent years such as 1980 and 1985, it will be possible to gauge changes in "who gets what" throughout the Second Plan, when growth was the stated priority, and then throughout the Third Plan, when emphasis shifted to distributional concerns.

A proper discussion of the System requires the review of each important submatrix of the full (106x106) Indonesian SAM plus supplementary tables, taken from the SSA. But by way of introduction first an aggregated Social Accounting Matrix is outlined, in order to provide a context for the extensions later on.

Table 1 is an aggregated SAM for Indonesia in 1975 [BPS, 1982a] and consists of thirty-seven accounts forming six main sets³:

I FACTOR ACCOUNTS (1. Paid Agricultural Workers, 2. Unpaid Agricultural Workers, 3. Paid Non-Agricultural Manual Workers, 4. Unpaid Non-Agricultural Manual Workers, 5. Paid Clerical, Sales & Service Workers, 6. Unpaid Clerical, Sales & Service Workers, 7. Paid Professional, Managerial & Non-Civilian Workers, 8. Unpaid Professional, Managerial & Non-Civilian Workers, 9. Private Domestic Unincorporated and Corporate Capital, 10. Public & Foreign Capital)

II INSTITUTION (CURRENT) ACCOUNTS (11. Agricultural Laborer Households, 12. Agricultural Operator Households, 13. Non-Agricultural Lower Level Rural Households⁴, 14. Non-Agricultural Higher Level Rural Households⁴, 15. Non-Agricultural Lower Level Urban Households, 16. Non-Agricultural Higher Level Urban Households, 17. Companies, 18. General Government)

III ACTIVITY ACCOUNTS (19. Food Crop Cultivation, Livestock Production, Fishing and Food Processing, 20. Estate Crop Cultivation, Forestry and Hunting, 21. Mining, Non-Food Manufacturing, Utilities and Construction, 22. Trade, Restaurants, Hotels, Transport, Personal Services, Household Services and Unclassified Activities, 23. Finance, Real Estate & Business Services, Government and Social, Cultural and Recreational Services)

IV DOMESTIC COMMODITY ACCOUNTS (24. Trade and Transport Margins, 25. Food Crops, Livestock Products, Fish and Processed Food, 26. Estate Crops and Forestry Products, 27. Mining Products, Non-Food Manufactured Products,

Electricity, Gas & Water and Buildings, 28. Trade, Meals Out, Lodging, Transport, Personal Services, Household Services and Unclassified Commodities, 29. Finance, Real Estate & Business Services, Government, and Social, Cultural and Recreational Services)

V IMPORTED COMMODITY ACCOUNTS (30. Food Crops, Livestock Products, Fish and Processed Food, 31. Estate Crops and Forestry Products, 32. Mining Products, Non-Food Manufactured Products, Electricity, Gas & Water and Buildings, 33. Trade, Meals Out, Lodging, Transport, Personal Services, Household Services and Unclassified Commodities, 34. Finance, Real Estate & Business Services, Government, and Social, Cultural and Recreational Services)

VI OTHER ACCOUNTS (35. Combined Institutions' Savings and Investment, 36. Indirect Taxes Minus Subsidies, 37. Rest of the World)

Let us examine each of these six sets of accounts in table 2.1 to see how they interrelate. As usual, receipts appear along the rows, while expenditures can be read down the columns.

We look first at the accounts for factors, receiving a compensation for their contribution to productive activities. (rows 1-10, columns 19-23)⁵. Three broad categories of factor income exist: a) wages and salaries, in kind as well as cash, earned by employees (paid workers), b) labor income imputed, in proportion to hours worked, to employers, self-employed and family workers (unpaid workers), and c) rents on the provision of means of production and on the depletion of natural resources (capital income). A single individual can receive all types of income. Think only of a land-owning farmer who cultivates food crops, but in addition earns a wage elsewhere during the slack season.

The sum of all elements in this matrix equals Indonesia's Gross Domestic Product (GDP). From the totals it is clear that a large proportion accrues to capital and that paid workers and unpaid workers receive about an equal share. In a subsequent paper this distribution of value added to factors of production will be studied more in depth, including a presentation of the number of full-time worker equivalents and wage rates.

Next, these factor incomes are allocated to the owners (rows 11-18 and 37, columns 1-10). All earnings of workers and unincorporated (private domestic) capital accrue to households. Companies (including public enterprise) are legally entitled to corporate (private domestic and public) capital income. Repatriated profits plus estimated retained earnings of foreign direct-investment capital are conventionally recorded in the rest of the world account (row 37, column 10).⁶ At this stage the government only receives depreciation on its services and rents on publicly owned land (row 18, column 10). Since a household is defined principally in terms of its main income, its members may belong to various categories of workers. The mapping of factor incomes to households portrays these multiple sources of income.

In addition to their factor incomes, households receive various transfers from other institutions (rows 11-16, columns 11-18)⁷. Lower level households with heads who are economically inactive (students, unemployed, pensioners) typically receive transfers from their relatives (rows 13 and 15, columns 11-16). Interest and dividends from corporate capital are distributed from companies to households (rows 11-16, column 17). As expected, a large part of distributed profits ends up in higher level households.

Most of the government transfers represent an imputation of the value households receive from government provision of public education and health services (rows 11-16, column 18). Receipt of these services is considered to increase household

"real" income. This treatment accentuates the government's role in redistributing income through the provision of such services.

Total household incomes (before taxes) are thus based on the labor of economically active members, the possession of assets (unincorporated productive capital, shares, bonds, time-deposits etc.), voluntary grants and the degree to which the members enjoy "public goods" like education and health. A separate paper will deal with the household income distribution in more detail, and discuss per capita incomes as well.

Companies receive interest payments from other resident companies (row 17, column 17) and from financial assets held abroad (row 17, column 37), besides their already mentioned capital factor income.

The general government revenue stems mostly from direct taxes and other legal fees, on households (row 18, columns 11-16) and on companies (row 18, column 17). Foreign oil companies tax accounts for the bulk of these receipts. Other sources of revenue are factor income (row 18, column 10), indirect taxes minus subsidies (row 18, column 36) and levies collected by embassies and such, from foreigners (row 18, column 37).

Household outlays include transfers to other households (rows 11-16, columns 11-16), taxes and other legal fees (row 18, columns 11-16), consumption of domestically produced commodities (rows 25-29, columns 11-16), consumption of imported commodities (rows 30-34, columns 11-16) and savings (row 35, columns 11-16). The group of agricultural laborers' households had to dissave in order to sustain its consumption, as can be seen from the negative entry in row 35, column 11. Household expenditure patterns will not be discussed in this introductory paper.

Companies pay dividends, interest and royalties to households (rows 11-16, column 17), to other companies (row 17, column 17) and to the rest of the world (row 37, column 17).

After taxes have been deducted (row 18, column 17), retained earnings are booked to the savings account (row 35, column 17).

Government expenditures include (imputed) transfers to households (rows 11-16, column 18), purchases of domestically produced and imported goods and services (rows 25-34, column 18), interest payments on the foreign debt (row 37, column 18) and a current account budget surplus or government savings (row 35, column 18).

The third set of accounts refers to the production activities which supply domestic commodities (rows 19-23, columns 25-29). In the absence of the sale of by-products by business with quite a different characteristic product, and in the absence of joint production of a commodity by different types of activities, the intersection of rows 19 till 23 and columns 25 till 29 constitutes a diagonal matrix.⁸

Costs of production can be broken down into gross value added at factor prices (rows 1-10, columns 19-23) and the procurement of local and imported inputs (rows 25-34, columns 19-23). The latter reflects the intermediate demand for commodities, which leads us to the next two sets of accounts. In addition to intermediate demand, both domestically produced and imported commodities fulfill final demands by households (rows 25-34, columns 11-16), by the government (rows 25-34, column 18) and by institutions' capital formation, including stock changes (rows 25-34, column 35). Finally, part of the Indonesian produce is exported (rows 25-29, column 37). The negative entry in row 26, column 35 means that stocks of estate crops and forestry products have been decreased during the reference year. A comparison of the destination of domestic and imported merchandise reveals that the latter is relatively more used as intermediate (current or capital) input in domestic production.

All these entries stand in purchasers' prices. Therefore, part of the receipts from commodity sales refers to trade and transport margins (row 24, columns 25-34) and to indirect taxes minus subsidies (row 36, columns 25-34). The value of

domestic commodities at producers' prices is then received by the production activities (rows 19-23, columns 25-29) and the value of imports at border prices (or c.i.f. prices) by the rest of the world (row 37, columns 30-34).

Trade and transport margins are part of the income of domestic trade, transport and personal services (row 28, column 24). Net indirect taxes are routed through a special account (row 36, columns 25-34) to the government (row 18, column 36).

The combined institutions' capital account, or savings/investment account is, of course, crucially important for understanding economic growth.⁹ The row of this account (row 35) shows the sources of savings; households (columns 11-16), companies (column 17), the government (column 18) and the rest of the world (column 37). This last entry represents Indonesia's balance of payments deficit on current account. About half of all savings consists of corporate retained earnings (including depreciation), even though retained earnings of foreign direct-investment capital (208 billion Rupiahs) have already been excluded. The column of the institutions' capital account (column 36) shows gross investment expenditures at home and abroad (rows 25-34).

Since the SAM is a system, all entries of the last account, the rest of the world account, have already been touched upon in the course of explaining the above accounts. For the sake of completeness: significant receipts, recorded in row 37, stem from foreign direct investment income (column 10), from royalties, interest on Indonesia's foreign debt and on other portfolio investment (columns 17 and 18), and from Indonesia's imports at c.i.f. prices (columns 30-34); significant expenditures, recorded in column 37, concern interest income earned by Indonesian companies (banks) abroad (row 17), levies collected by Indonesia's official overseas representations (row 18), non-domestic procurement of Indonesian products at f.o.b. (free on board) prices (rows 25-29) and foreign savings, or capital transfers (row 35).

With table 1 it is possible to ask - and answer - a wide variety of questions, such as: what sources of income do the non-agricultural urban higher level households have? what percentage is from corporate capital? from paid labor? how do they spend their income? do they import more than other groups? absolutely? relatively? how do the direct taxes they pay compare with the benefits they receive from publicly provided education and health services? Inspecting the rows and columns of account 16 and calculating simple percentages answer these questions. Examples will be given in subsequent papers which will also deal with various underlying or derived non-monetary distributions.

FOOTNOTES

1. Many previous SAMs, notably the pioneering work on Sri Lanka [Pyatt and Roe, 1977], also estimated "manpower matrices" which measure labor-force participation not in terms of money but in terms of people.
2. The most extensive SAM for Indonesia consists of 175 accounts [BPS (Biro Pusat Statistik), 1982b]. Even more disaggregated submatrices are available: for example a 179x179 input-output table [BPS, 1980], food crop profits by crop, size of the holding, type of land and household group [Keuning, 1981], and consumption of food and non-food by commodity and household group [Downey, 1981a and 1981b].
3. The cell entries of table 2.1 are denominated in billions of 1975 rupiahs. An exchange rate of approximately U.S. \$1.00 = Rp 415 prevailed at the time. Although the data presented here all fit into a consistent framework, that does not guarantee their accuracy. Thus they should be interpreted with considerable care, as usual.
4. Non-Agricultural Higher Level Households are headed by
a) Employers, b) Own Account Professionals & Technicians and Self-Employed Workers in Wholesale Trade, Hotels, Finance and Real Estate, c) Managerial and Supervising Employees, d) Professional and Technical Employees, e) Higher Clerical Sales and Service Employees (ISCO-codes: 32-34, 38, 39, 42-44 [ILO, 1957]) and f) Non-Civilians.

Non-Agricultural Lower Level Households are headed by a) Other Own Account Workers, b) Other Clerical, Sales and Service Employees (ISCO-codes: 36, 37, 45, 49, 52-59), c) Manual Employees d) Economically Inactive and e) Unclassifiable.

Details concerning this socio-economic classification of households can be found in Downey [1984].

5. In principle, the possibility exists that factors residing in Indonesia earn income abroad (rows 1-10, column 37). The statistics for 1975, however, do not record significant receipts. The same applies to foreign border workers and unincorporated capital (zero entries in row 37, columns 1-9).
6. As taxes on foreign business are considered to be paid by companies, these are routed to the government through the companies account (row 17, column 10) instead of through the rest of the world account (row 37, column 10).
7. Remittances of expatriates are estimated to be negligible. This refers to Indonesians living abroad (significant amounts would have been recorded in rows 11-16, column 37) as well as to foreigners living in Indonesia (zero entries in row 37, columns 11-16).
8. This may be a realistic estimate by virtue of the substantial aggregation of production activities. Otherwise it might be revealed, for instance, that various mining and manufacturing establishments generate their own electricity. However, the size of these "off-diagonal cells" has neither been estimated in the larger SAMs, since the relevant basic materials used for the compilation of the input-output tables are no longer available.
9. In the 1975 Indonesian SAM a disaggregation of the combined institutions' capital accounts, analogous to the subdivision of the institutions' current accounts (numbered 11-18), has not been pursued. Therefore details of the flow of funds between various types of institutions are not shown, and it cannot be traced to what extent capital formation of each institution could be financed by its own savings.

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