

A SOCIAL ACCOUNTING MATRIX OF TURKEY IN 1998

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Abstract

The Social Accounting Matrix (SAM) is one of the most useful tools in economic research. The matrix, offering an efficient means of summarizing complex economic relationships, can be utilized for policy analysis, economic planning, and identification of gaps in statistical information.

With this study, we aim to analyze the characteristics of SAM of Turkey, which form a wide database of economy containing information about the flow of resources associated with all transactions that took place between economic agents in 1998.

While data sources such as Input–Output tables, State Statistical Institute, State Planning Organization, Treasury, and Central Bank provide data for SAM, as a matter of fact, SAM itself makes up a basic data set for the construction of Computable General Equilibrium (CGE). Thus, the data for this study was collected from published statistical output of various accounts of economy, current account balances, public balance, and household statistics.

We believe that SAM may prove to be a very useful tool in evaluation and assessment of economy, providing significant assistance for policy makers, economists and statisticians in their research concerning economical issues.

1) Introduction

Social Accounting Matrix (SAM) is an accounting system in which the parts related to the whole of economy are joined together; it harmonizes differences between various accounting groups and that enables us to have information related to general view of the economy. SAM also has the ability to provide data for models used in research related to economical politics.

SAM arises from the need to find out more about the effects of macroeconomic policies at sectoral level, and sectoral policies at macroeconomic level. Based on the principle that the study of a sector should be carried out under a general equilibrium approach, moving beyond the context of partial equilibrium, SAM is one possibility for meeting such needs, in that it provides a complete account of circular flow in economy.

The particular method of accounting for economic activity dates back to a number of different sources, starting with F. Quesnay's "tableau economique" in the 18th Century. In 20th Century, social accounting was intensively affected by National Income Accounting of Kuznets(1937)¹ and research of Leontief (1941)². The development of current age of SAM started with Meade and Stone's (1941)³ study which prepared the first double-recorded income accounting method for British Council of Ministers (Kehoe, 1996). Although the basic of matrix accounting has a long history, SAM was first introduced in a study by Sir Richard Stone in 1960 conducted on England and some other industrialized countries (Round 2003, Özhan,1988).

¹ Kuznets S.(1937), Natural Income and Capital Formation 1919-1935. New York National Bureau of Economic Research

² Leontief, W.W.(1941), The Structure of American Economy, 1919-1929: An Empirical Application of Equilibrium Analysis. Cambridge, Mass. Harvard University Press

³ Meade, J.E., AND Stone , J.R.N(1941), "The Construction of Tables of National Income , Expenditure, Savings and Investment" Economic Journal 51, 216-233

The study carried out by Sir Richard Stone and his team, supporting multi-sectoral economic model, was structured for Cambridge growing project. After this pioneering study, many economy foundations tried to improve this idea. Collaborating with each other, International Development Department and Warwick University tried to structure SAM for some countries such as Switzerland, Kenya, Botswana and Fiji (Allen 2001). The general shape of an SAM framework was first described by Pyatt and Thorbecke (1976). Afterwards, Pyatt and Roe (1977) published a book giving a detailed description of the example of Sri Lanka. Since then, SAMs have been applied to attain a variety of different goals. Income distribution and redistribution, growth strategies in developing economies, the decomposition of activity multipliers that shed light on the circuits comprising the circular flow of income, combination of social, technological / environmental and economic issues are some of the goals that SAM is interested in (Santos, 2003).

Sri Lanka (Narapalasingan, 1970), Switzerland (Webster, 1971-1972), Botswana (Greenfield, 1974-1975), Tunisia (Salem, 1996), Tanzania (Wobst, 1992), Mozambique (Arndt et al, 1994-1995), Vietnam (Nielsen, 1996-1997; Tarp et al, 2000), Zimbabwe (Thomas and Bautista, 1991), Malawi (Chulu and Wobst, 1998), Thailand (Chunh-Li, 1998), Bangladesh (Fontana and Wobst, 1993-1994), Portugal (Santos, 2003), Turkey (Ozhan, 1988; Köse and Yeldan 1996; Telli, 2003) are some of the country examples where SAM was applied.

2) Construction of SAM

SAM, deals with the arrangement of information. Most times, information about a country or one of its regions may change within a period of a year. In most developing countries, reliability of economical and social data is a serious issue. SAM

provides a platform where such deficiencies and inconsistencies caused by scattered or fragmented data can be better dealt with. When a certain country's data belonging to a certain period is arranged in SAM's format, this representation provides a general momentary view of the economic structure of that country to be utilized in research. Analyzing how economy works, and thus estimating the effects of political interferences requires more than a static view. For instance, it is possible to be able to estimate the effects of interferences by designing an economy model for political and social issues, where SAM, as a statistical base, proves to be extremely significant in terms of provision of data (King, 1985).

Robinson et al (1999) describes SAM as a synthesis of two models established in economy. One of these models shows the system of relationships among industries. The inputs in a sector may lead to outputs in another sector. This operation, which requires the input to be entered in one cell, helps surmounting the difficulty usually encountered in traditional double-record accountancy. SAM generalizes the logic of inputs and outputs, which is a sector's buyings are another's selling; this, including not only the flow among industries, but also all other processes in economy. Let us suppose a flow of money from members of a household to a producer sector, or a flow of money as tax-paying from the same members to the government is thus recorded as spending in the column for one actor, and as income for another actor in the row. The other model entails that the income derived from national income accountancy always equals spending. Although the concept of balancing exists in general economy, we see that this model also requires the balancing of all factor accounts in accounting. For instance, according to this, as well as general economy models, the income gained from the sellings in agriculture sector should be equal to all spendings in labour, import and

capital services in this sector. Traditionally, linked to the requirement of balancing of both sides in economy, double recorded accountancy is carried out. Incomes are entered in rows, and spendings in columns in SAM, thus budget restriction requires rows (income) addition to be equal to columns (spending) addition.

SAM provides a wide view about general economy. It illustrates the relationship between different decision units which are not included in National Income Accounts. SAM has a structure enabling it to consistently collect large amount of data from different sources. It is an important tool contributing to the creation of the National macro economic database. It is not, however, suitable for being utilized as a model since it regards coefficients as stables. Furthermore, SAM data creates a base for complex multi-sectoral economical models (Allen,1998). SAM is generally used in studies related to issues such as development strategies, income distribution, national and regional economy policies and decomposition of activity factors leading to circular income stream and national and regional economy policies (Roland-Holst et al., 1995). More popular usage area of SAM does also provide data in constructing Computable General Equilibrium (CGE) models (Kehoe,1996).

Round (2003) summarizes the three basic motivations which enable the development of SAM. First, with the construction of SAM, data from different sources helping to evaluate structural characteristics of economy is brought together. Besides, SAM has a positive effect on the development of estimation quality index by identifying data need and key points. Secondly, in terms of data provision, SAM, simply and clearly, demonstrates independence of economic structure in macro and micro levels. It clearly highlights connection between income distribution and economic structure.

Thirdly, in terms of modeling, it provides a useful analytic framework. It provides a direct input for model index; includes fixed price multiplier coefficient, and enables index data set for calibration of computable general equilibrium modelling.

There is a close relationship between Social Accounts and National Accounts. Both basic framework and accounting system each contains processes such as purchasing, selling, paying, income, and transfer (voluntarily or reluctantly) in a period of an economy. The difference between the Social Accounts and National Accounts is very important, in that the national accounts primarily deal with analyzing the production of goods and services, the way they are used for final and intermediate consumption, export and accumulation, used in production process. The Social Accounts, however, emphasis has been on the distribution and redistribution of income generated by the production process. Most of the studies it is emphasized that the accounting system should provide for both purposes and much more attention has been given to this in the new System of National Accounts (Allen,2001).

Some stages are followed in structuring SAM. Allen (1998) summarizes these stages to put SAM in practice. Initially, researchers should investigate what data is available at what data centers; and then, by identifying the purpose of SAM, utilize the data to attain this purpose. Besides database centers, administrative records and private sector sources are also regarded as data suppliers for SAM. In case there is new data entry, this data should be harmonized with previous data. Setting and entering the first estimations, then tabulation takes place. The data collected about a particular account from various sources is mostly inconsistent. For that reason, more than one estimation for a cell may be necessary. The correcting and harmonizing process starts by checking

the stabilization of lines and columns whether they fit each other. The first issue to be looked into is deciding whether there is a match between rows and columns. Although this approach may not sound scientific, it is, however, valid in many cases, for it lets users carry out the required replications and state the reasons clearly. Despite all this, there still may remain some inconsistencies, which may be balanced through the RAS⁴ method if the inconsistencies are few and the addition of right line and column is known. This method is an iterative method which divides the differences according to the magnitude of component cells is a widely used method balancing SAMs. It is used when new information on the matrix row and column sums become available and we want to update an existing matrix.

These methods may yield results solely based on estimations, or in some conditions, they may not be used because the row and column sums may not be known for certain. Various techniques based upon the variance estimations of cells and requiring linear limitations on estimation groups have been identified.

Within a strict methodology, the organization of this study plays an important role in the process of the construction of SAM. While SAM is being structured, data is obtained from Central Banks, the State Planning Organizations, the National Treasuries, the State Statistic Institutes and ministries. While matrix is being structured, different people from different jobs deal with different phases. SAM has a specification of being an important tool in determining the socio-economical policies and different levels of planning. Thus, it is not only collected by the statisticians. The data supplied by politicians and planners for SAM, is also available for these very people in order to

⁴ Robichaud, Veronique(2000) , “Example of the RAS Technique”
<http://www.crefa.ecn.ulaval.ca/develop/MemoontheRAS technique.pdf>

meet data needs. Not everybody is involved at all levels of structuring SAM. For instance, while identifying classification requires data from many sides, tabulation can be best implemented by statisticians, and economists are required to evaluate results (Keuning and Ruijter, 1988).

How much SAM has been disaggregated depends on suitable data limitation and motivation of the people structuring the model. Moreover, the construction of SAM changes in accordance with the policy problem to be analyzed in the CGE model. Therefore, there is no standard SAM able to serve all aims (Hwang 2003:44). Keuning and Ruijter (1988) tried to provide discussions in order to create a standardized SAM. Although a detailed design has never been realized, Keuning and Ruijter made suggestions for following a similar way in the construction of all SAMs for their inclusion of structures peculiar to different countries, and for common problems encountered.

Since each cell is only with one value, a complete SAM has a deterministic structure. As mentioned previously, SAM is built on different data sets. Some of this data is obtained from various research. Other statistical sources (such as the national income accounts and pay balance data) are restricted by measurement faults. Although SAM has a deterministic structure, a consistent SAM process is mostly based on stochastic concepts and experts' ideas, and has a wide data scale which may contain sampling and/or measurement mistakes. The criticism brought about by economists relies on the argument that SAM, suggested as a deterministic matrix, is the estimations produced from the data which each cell has may have sampling and measuring faults (Thorbecke, 2001).

Data from various sources is supplied while SAM is being structured. In figure 1, we illustrate the accounts supplying data while structuring SAM.

Take in Figure 1 About Here

National income accounts in current period shows bilateral circular relationships connected to sharing, and demand relationships between production and income. Fund flow table (chart) shows all money and credit movements in economy with the changes in assets and debts of several foundations; balance of payment shows all kind of goods and service exchanges with affairs of debt and credit; national balance account shows the real money assets of economy and their distribution (Köse and Yeldan, 1996). And, input-output table shows the goods and service flow among industries. In input output table , columns show the needed inputs for the production of an industry and payments for value added components, but lines show by which industries and final demand components the produced products are used (<http://www.die.gov.tr/veriKatologu.htm>). If the input-output table does not contain the national accounts for the same year and the estimations differ for the same changables, the tendency is to rely on the current table until a more detailed input-output table is created. Based on content of research, information about a special population counting and /or analysis may be needed. When such information can not be reached, it sometimes can be obtained from household budget research, or some other multi-purpose household analysis.

SAM has the qualification of being the extension of input-output tables. If there is an input-output table, it should be arranged and updated for SAM. However input-output tabulation is time consuming. The following steps are needed if an input-output table is available (Keuning and Ruijter ,1988) ;

- Linking primary incomes and final demand (mapping factor incomes to household incomes, and mapping household incomes, after correction for transfers, to consumption expenditures).
- Disaggregating primary incomes (by factor type) and part of final demand, namely household consumption expenditures (by household group) and fixed capital formation (by sector in which the investment takes place and possibly by investing institutions). In addition, the destination of imports has to be sorted out.
- Collecting supplementary information on savings, interinstitutional transfers (taxes, dividends, government subsidies and grants to private institutions, transfers between household groups and the like), current transactions with the ROW not shown by the balance of trade (factor services, interest payments, emigrant remittances) and, ideally, the flow of funds.

Flows of income among the units in an open economy consist of households, state, firms, savings and investment, suppliers, rest of the world (row), good/factor market. These flows take place in Figure 2. The flows in the figure match the cells in SAM. According to the circular flow scheme, household income comes from the factor market and transfer income from the state. While household members pay a part of their income as tax, they transfer their savings into a saving investment account. Similarly, the savings of firm and state are also transferred into a saving investment account. The relationship between rest of the world (ROW) and good market is established by means of import and export. State gets indirect tax revenues from suppliers and tariff revenues from import. There are transfers as sellings from good markets to suppliers, and intermediate input from suppliers to good market.

Suppliers transfer the value-added to the factor market. The spending flows taking place in National income accounts are inserted in the columns of SAM, and income flows in the rows.

Take in Figure 2 About Here

3. 1998 Turkey Social Accounting Matrix

In this section, Turkey's Social Account Matrix (SAM) for the year 1998 will be constructed. For this construction process, data from different sources was collected, and inconsistencies between these data have been adjusted. The data was obtained from the State Statistics Institute, Ministry of Economics, Foreign Trade and Treasury Undersecretariat, and the Central Bank (See Appendix-1).

The input-output table (97x97 matrix form), and name of the 97 sectors for the year 1998, SAM and input output table is presented in Appendix-2 in a 21x21 form, aggregated include 21 sectors. These sectors were collected relying on decompositions of intermediate consuming sectors of the State Statistics Institute. Sectors taking place in an aggregated input-output table are illustrated in Table 1.

Take Here Table 1 Here About

SAM which we have tried to build up for Turkey's economy by using the data of 1998 consists of activities, goods, labour, capital household, government, social security system (SSS), firms, private-public saving and ROW accounts. Items that take place in the income line of the account are shown as spending in each column. All of the

accounts are defined in Turkish Liras . Some of the accounts about public sector accounting and related accounts data needs are adjusted by the study of Telli(2004).

Take Here Table 2 Here About

Take Here Table 3 Here About

Items which take place in the activity account column which shows the production of country economy belonging to a certain year helps us observe the payment for realizing the production in that year, and how much of it was supplied to domestic markets and how much of it to out-markets.

Incomes of Activities Account	88.987.006.036
Domestic Sales	76.273.705.876
Exports.....	12.713.300.160
Expenditure of Activities Account.....	88.987.006.036
Intermediate Demands.....	40.160.988.379
Wages.....	13.297.030.743
Profits	32.802.339.539
Net Indirect Taxes.....	2.726.647.375

Another type of account, the goods account column standing for domestic markets consists of import taxes; and, the line of goods account represents the total demand amount consisting of intermediate goods demand, private and public consumption, and private and public investment. Domestic sales, import taxes and imports are the expenditure that takes place in the column.

Incomes of Goods Account.....	94.245.857.591
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Intermediate Demands.....	40.160.988.379
Private Consumption.....	35.986.031.367
Public Consumption.....	5.922.674.458
Private Investment.....	8.537.830.387
Public Investment.....	3.638.333.000
Expenditures of Goods Account.....	94.245.857.591
Domestic Sales	76.273.705.876
Import Taxes.....	3.398.927.473
Import.....	14.573.224.242

While wage income takes place in the line of labor account in SAM, in the column, there are labor incomes, and total premium payments constituting the total wage incomes.

Incomes of Labor Account.....	13.297.030.743
Wages.....	13.297.030.743
Expenditures of Labour Account.....	13.297.030.743
Labor Income	10.930.054.743
Premium Payments.....	2.366.976.000

Capital account line representing profit incomes consists of the total of public and private capital incomes that take place in the column of capital account while capital income represents profits in the row.

Incomes of Capital Account	32.802.339.539
Profits.....	32.802.339.539

Expenditures of Capital Account.....	32.802.339.539
Public Capital Income	2.687.241.088
Capital Income	30.115.098.451

Incomes in household line, transfers done to household from public sector, profits delivered by the firms and the total of foreign exchange incomes transferred into household from ROW constitute household incomes; private consumption in the household column, direct taxes and total of private savings constitute household spending.

Incomes of Household Account.....	52.884.944.032
Labor Income.....	10.930.054.743
Public Transfers.....	878.759.658
Social Security System (SSS) Transfers.....	3.620.647.750
Distributed Profits.....	36.062.709.996
Foreign Remittances.....	1.392.771.885
Expenditure of Household Account.....	52.884.944.032
Private Consumption.....	35.986.031.367
Direct Taxes.....	4.605.594.151
Private Savings.....	12.293.318.514

Similarly, while net amount of direct taxes, tax of foundations and transfers from ROW constitute public incomes, public consumption, the addition of transfer into households, deficits of social insurance funds, firms and ROW with the total of public savings constitute the spending items of the public sector.

Incomes of Public Sector Account.....	14.716.523.330
Net Indirect Taxes	2.726.647.375
Import Taxes.....	3.398.927.473
Public Capital Incomes.....	2.687.241.088
Direct Taxes.....	4.605.594.151
Corporate Taxes.....	1.256.767.243
Expenditure of Public Sector Account.....	14.716.523.330
Public Consumption	5.922.674.458
Transfers to Household.....	878.759.658
Transfers to SSS Deficits.....	1.253.671.750
Transfers to Firms.....	6.937.128.064
Public Savings.....	-974.337.137
Transfers to ROW	698.626.537

While premium payments constitute the incomes of social insurance foundations, and the transfers transferred into the deficits of social insurance foundations take place in the line of related account, the transfers from social insurance foundations to households take place in the column.

Incomes of Social Security System

Accounts(SSS).....	3.620.647.750
Premium Payments.....	2.366.976.000
Transfers to SSS deficits.....	1.253.671.750
Expenditure of SSS.....	3.620.647.750
Transfers to Household	3.620.647.750

Capital incomes and public sector transfers form the incomes of firms which they expend for distributed profits, corporate taxes, retained earnings and transfers to ROW. Transfers to ROW are the debt interest repayments.

Incomes of Firms Account.....	38.235.111.515
Capital Income.....	30.115.098.451
Transfers from Public Sector.....	6.937.128.064
Transfers from ROW.....	1.182.885.000
Expenditure of Firms Account.....	38.235.111.515
Distributed Profits.....	36.062.709.996
Corporate Taxes.....	1.256.767.243
Retained Earnings.....	287.638.739
Transfers to ROW	627.995.537

The totals of private savings in the income line of private savings account and retained earnings in the same line must match the private investment and private savings-investment gap in the column of the same account.

Incomes of Private Savings Account.....	12.580.957.253
Household Savings.....	12.293.318.514
Retained Earnings.....	287.638.739
Expenditure of Private Savings Account.....	12.580.957.253
Private Investment.....	8.537.830.387
Private- Savings Investment Gap.....	4.043.126.866

The totals of public savings in the income line of public savings account, private savings investment gap and external resources in the same line must match the public investment in the column of the same account.

Incomes of Public Savings Account.....	3.638.333.000
Public Savings.....	-974.337.137
Private-Savings Investment Gap.....	4.043.126.866
Expenditure of Public Savings Account.....	3.638.333.000
Public Investment.....	3.638.333.000

The last account in SAM represents the transfers to and from ROW. The items in the column of the related account consist of export payments from ROW to goods account, worker foreign remittances to households, transfers to public and firms, and foreign savings. Imports, transfers including interest payments to ROW by public sector and firms constitute ROW incomes. Thus, foreign exchange spendings representing the total of lines and columns in the ROW account and foreign exchange incomes must match one another.

Incomes of ROW Account.....	15.899.846.316
Imports.....	14.573.224.242
Transfers from the Public Sector.....	698.626.537
Transfers from Firms.....	627.995.537
Expenditure of ROW Account	
Exports.....	12.713.300.160
Foreign Remittances.....	1.392.771.885
Transfers to Public Sector.....	41.346.000

Transfers to Firms.....	1.182.885.000
External Resources.....	569.543.271

Conclusion

Social Accounting Matrix (SAM) is an accounting system in which the parts related to the whole of economy are joined together. It harmonizes difference between various accounting groups and provides us with information related to general view of the economy.

Public accounting, national income accounting, balance of payment accountings and input-output tables are all the data sources feeding SAM, which is constructed through harmonization of accounts. Input-Output tables play an important part in constructing SAM. However, constructing input-output tables on a yearly basis is rather time consuming and costly. The difficulties of creating such tables are experienced by almost all countries. Inconsistencies between national accounts can be adjusted by SAM.

SAM was constructed in this study for the Turkish economy in 1998, comprising activities, goods, labor, capital, private household, public sector, SSS, firms, private savings, public savings, ROW accounts, for its increasing popularity in forming a statistical basis for multi-sectoral and macro economic models. Especially, SAM is an important tool for developing CGE modeling. Inconsistencies between accounts are adjusted in SAM. In this study public balance accounts are mostly adjusted.

As for further research, we can suggest that SAM, which displayed all this information about the Turkish economy for the year 1998, can be constructed to present detailed information about properties of economy.

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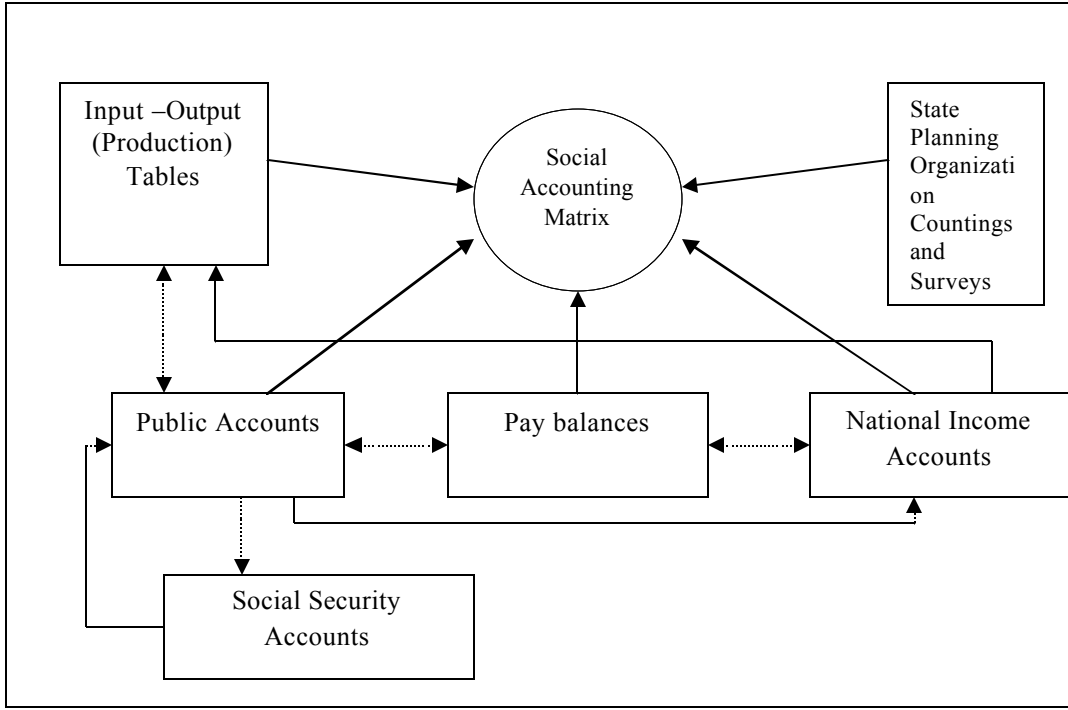
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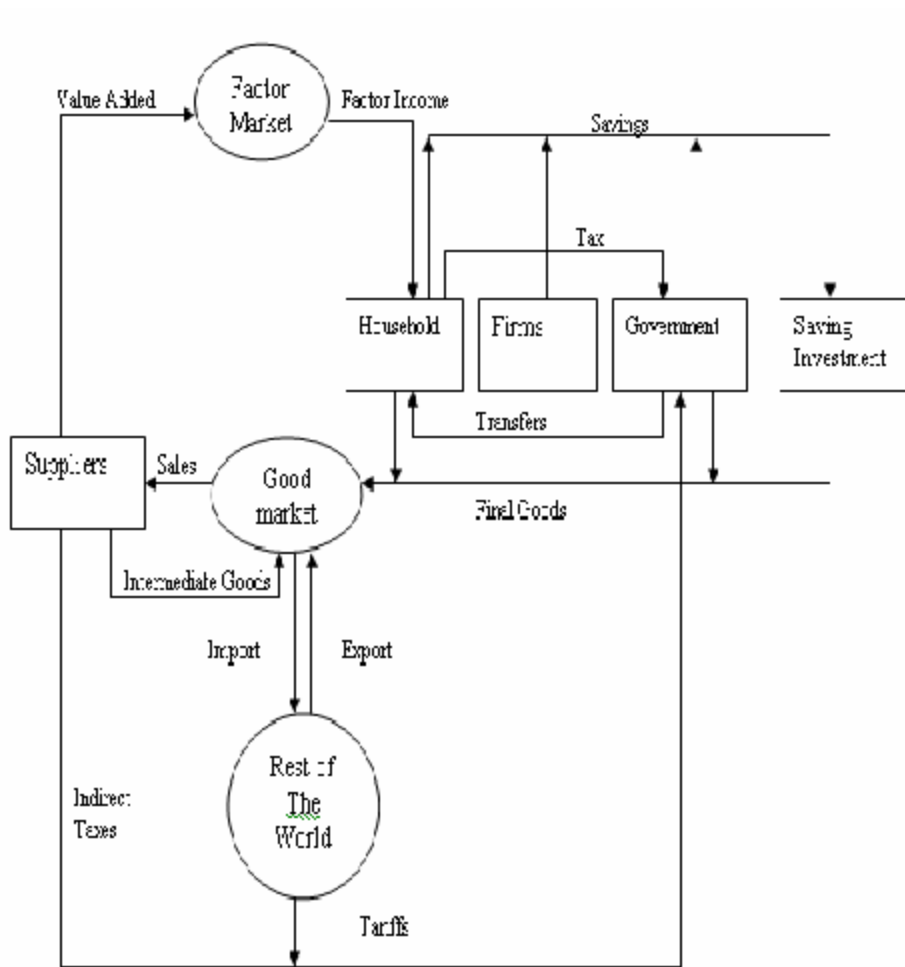
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FIGURE 1 – SAM Data Sources



Source: Telli, Çağatay , (2004) “Sosyal Hesaplar Matrisi Üretme Yöntemi ve Türkiye Uygulaması” Devlet Planlama Teşkilatı Yıllık Programlar ve Konjonktür Değerlendirme Genel Müdürlüğü, Planlama Uzmanlık Tezi, Ankara

FIGURE II. Income flow in an open economy.



Chung -Li , Jennifer (2002) , " A Social Accounting Matrix (SAM) for Thailand" TMD Discussion Paper No: 95 Trade and Macro Economic Division International Food Policy Research Institute Washington, U.S.A

Table 1 : Sectoral Classification

Sectors	Classification	Abbreviations
Agriculture	(1-7)	AGRI
Mining	(8-12)	MINI
Manufacture and Food Products	(13-22)	FOOD
Beverage & Tobacco Industry	(23-25)	TOBA
Textile & Wearing Apparel	(26-30)	TEXT
Manufacture of Leather	(31-32)	LEAT
Wood & Furniture	(33-34 ve 67)	WOOD
Paper & Paper Products	(35-37)	PAPR
Petroleum Industry	(38)	PETR
Chemical Industry	(39-43)	CHEM
Rubber& Plastic Products	(44-45 and 68)	PBER
Non- Metal, Mineral Products	(46-49)	MRAL
Metal & Iron&Steel Industry	(50-52)	META
Fabricated Metal Products	(53-54)	FABM
Non- Electrical Machinery	(55-58)	MACH
Electrical Machinery	(59-61)	ELCM
Transport Equipment	(62-66)	TRNS
Electric, Gas & Water	(69-71)	ENGY
Construction	(72)	CONS
Transportation & Communication	(78-83)	TRCM
Services	(73-77 with 84-97)	SERV

Table 2: Schematic Social Accounting Matrix for Turkish Economy (1998)

	Activities	Goods	Labor	Capital	Household	Public Sector	Social Security System	Firms	Private Savings	Public Saving	Rest Of The World	Total
Activities		Domestic Sales									Export	Total Sales
Goods	Intermediate Demands				Private Consumption	Public Consumption			Private Investment	Public Investment		Total Demand
Labor	Wages											Wage Income
Capital	Profits											Profit Income
Household			Labor Incomes			Transfers	Transfers	Distributed Profits			Foreign Remittances	Private Income
Public Sector	Net Indirect Taxes	Import Taxes		Public Capital Income	Direct Taxes			Corporate Taxes			Transfers	Public Income
Social Security System			Premium Payments			Transfers to SSS Deficits						SSS Income
Firms				Capital Income		Transfers					Transfers	Firms Income
Private Savings					Private Savings			Retained Earnings				Private Savings
Public Savings						Public Savings			Private-Savings Investment Gap		External Resources	Public Savings
Rest of The World		Import				Transfers		Transfers				Foreign Exchange Income
Total	Total Payments	Total Absorptions	Wages	Profits	Private Consumption	Public Expenditure	SSS Expenditure	Firms Expenditure	Private Investment Expenditure	Public Investment Expenditure	Foreign Exchange Expenditure	

Table 3: Turkish Social Accounting Matrix For the Year of 1998(Turkish Lira)

	Activities	Goods	Labor	Capital	Household	Public Sector	Social Security System	Firms	Private Savings	Public Savings	Rest Of The World	Total
Activities		76.273.705.876									12.713.300.160	88.987.006.036
Goods	40.160.988.379				35.986.031.367	5.922.674.458			8.537.830.387	3.638.333.000		94.245.857.591
Labor	13.297.030.743											13.297.030.743
Capital	32.802.339.539											32.802.339.539
Household			10.930.054.743			878.759.658	3.620.647.750	36.062.709.996			1.392.771.885	52.884.944.032
Public Sector	2.726.647.375	3.398.927.473		2.687.241.088	4.605.594.151			1.256.767.243			41.346.000	14.716.523.330
Social Security System			2.366.976.000			1.253.671.750						3.620.647.750
Firms				30.115.098.451		6.937.128.064					1.182.885.000	38.235.111.515
Private Savings					12.293.318.514			287.638.739				12.580.957.253
Public Savings						-974.337.137			4.043.126.866		569.543.271	3.638.333.000
Rest of The World		14.573.224.242				698.626.537		627.995.537				15.899.846.316
Total	88.987.006.036	94.245.857.591	13.297.030.743	32.802.339.539	52.884.944.032	14.716.523.330	3.620.647.750	38.235.111.515	12.580.957.253	3.638.333.000	15.899.846.316	

APPENDIX 1:

Table 4 – Public Balance (Total)

	1998 (Current Prices Billion TL)
1.TAXES	10.902.342
A.DIRECT	4.774.173
B.INDIRECT	6.128.169
2.NON-TAX NORMAL INCOME	676.171
3.FACTOR INCOME	2.687.241
4.SOCIAL FUNDS	-1.253.672
5.(CURRENT TRANSFERS)	-8.072.974
I.PUBLIC DISP.INCOME	4.939.108
II.CURRENT EXPENDITURE	-5.922.692
III.PUBLIC SAVINGS	-983.584
IV.INVESTMENT	-3.638.333
A.FIXED INVESTMENT	-3.359.435
B.STOCK CHANGES	-278.898
V.SAVINGS-INVESTMENT DIFF.	-4.621.916
VI.CAPITAL TRANSFERS	197.193
1.TAXES ON WEALTH	178.313
2.(OTHER TRANSFERS)	213.261
3.(INCREASE IN FIXED ASSETS)	-194.381
VII.CASH-BANK/BORROWING	4.424.721
1.CHANGE IN CASH-BANK	-718.639
2.FOREIGN BORROWING(NET)	-491.577
-REPAYMENTS	-2.224.238
-RECEIPTS	1.732.661
3.DOM.BORROW./LEND.(NET)	6.227.119
4.STOCK CHANGES FUND	-592.182
PSBR/GNP	9,4
BORROWING REQUIREMENT	5.016.903

Resource: State Planning Organization, www.dpt.gov.tr

Table 5 : Balance of Payments (Million \$)

A.CURRENT ACCOUNTS	
1.MERCHANDISE EXPORTS (Fob)	36.600
Exports Fob in Trade Returns	36.000
Transit Trade	600
2.MERCHANDISE IMPORTS (Fob)	-49.700
Imports Cif in Trade Returns	-50.000
Imports Of Nonmonetary Gold	-2.200
Transit Trade	-500
Freight And Insurance on Imports	3.000
Trade Balance	-13.100
OTHER GOODS, SERVICES AND INCOME (Credit)	21.900
Travel	8.500
Interest	2.000
Other	11.400
OTHER GOODS, SERVICES AND INCOME (Debit)	-15.450
Travel	-2.250
Interest	-5.100
Other	-8.100
TOTAL GOODS, SERVICES AND INCOME	-6.650
PRIVATE UNREQUITED TRANSFERS (Credit)	3.800
Workers' Remittances	3.500
Other	300
PRIVATE UNREQUITED TRANSFERS (Debit)	0
OFFICIAL UNREQUITED TRANSFERS	350
Workers' Remittances	50
Other	300
CURRENT ACCOUNT BALANCE	-2.500
B.CAPITAL, EXCLUDING RESERVES	7.500
DIRECT INVESTMENT (Net)	1.200
PORTFOLIO INVESTMENT (Net)	3.200
OTHER LONG-TERM CAPITAL	1.800
Drawings	8.300
Dresdner (Net)	1.000
Repayment	-7.500
SHORT-TERM CAPITAL	1.300

Assets	-1.550
Credits Extended	-100
Dmb's Fx. Holdings And Other Assets	-1.450
Liabilities	2.850
Credits Received	2.650
Deposits	200
C.NET ERRORS AND OMISSIONS	0
D.EXCEPTIONAL FINANCING	0
E.COUNTERPART ITEMS	0
OVERALL BALANCE	5.000
D.TOTAL CHANGE IN RESERVES	-5.000
IMF	0
OFFICIAL RESERVES	-5.000
DEBT SERVICE RATIO	20,2
Average Exchange rate = E(TL/\$)	260,040

Resource: State Planning Organization, www.dpt.gov.tr

APPENDIX 2:

Table 6: Sectors in Input Output Table of Turkey (1998)

1	Growing of cereals and other crops n.e.c
2	Growing of vegetables, horticultural specialties and nursery products
3	Growing of fruits, nuts, beverages and spice crops
4	Rearing of animals
5	Agricultural and animal husbandry service activities, except veterinary activities
6	Forestry, logging and related service activities
7	Fishing
8	Mining of coal and lignite
9	Extraction of crude petroleum and natural gas
10	Mining of metal ores
11	Quarrying of stone, sand and clay
12	Mining and quarrying n.e.c
13	Production, processing and preserving of meat and meat products
14	Production and preserving of fish and fish products
15	Production and preserving of fruit and vegetables
16	Manufacture of vegetables and animal oils and fats
17	Manufacture of dairy products
18	Manufacture of grain mill products, starches and starch products
19	Manufacture of prepared animal feeds
20	Manufacture of bakery products
21	Manufacture of sugar
22	Manufacture of cocoa, chocolate, sugar confectionery, and other food products n.e.c
23	Manufacture of alcoholic beverages
24	Manufacture of soft drinks; production of mineral waters
25	Manufacture of tobacco products
26	Manufacture of textiles
27	Manufacture of other textiles
28	Manufacture of knitted and crocheted fabrics and articles
29	Manufacture of wearing apparel, except fur apparel
30	Dressing and dyeing of fur, manufacture of articles of fur
31	Tanning and dressing of leather, manufacture of luggage, handbags, saddlery and harness
32	Manufacture of footwear
33	Sawmilling and planing of wood
34	Manufacture of wood and of products of wood and cork
35	Manufacture of paper and paper products
36	Publishing
37	Printing and service activities related to printing
38	Manufacture of coke, refined petroleum products
39	Manufacture of basic chemicals, plastics in primary forms and other synthetics rubber
40	Manufacture of fertilizers and nitrogen compounds
41	Manufacture of pesticides, other agro-chemical products
42	Manufacture of pharmaceuticals, medicinal chemicals and botanical products
43	Manufacture of cleaning materials, cosmetics and other chemicals and man-made fibres
44	Manufacture of rubber products
45	Manufacture of plastic products
46	Manufacture of glass and glass products
47	Manufacture of ceramic products
48	Manufacture of cement, lime and plaster related articles these items

49	Cutting and finishing of stone and man. of other non-metallic mineral products n.e.c
50	Manufacture of basic iron and steel
51	Manufacture of basic precious and non-ferrous metals
52	Casting of metals
53	Manufacture of fabricated metal products, tanks, reservoirs and steam generators
54	Manufacture of other fabricated metal products; metal working service activities
55	Manufacture of general purpose machinery
56	Manufacture of special purpose machinery
57	Manufacture of domestic appliances n.e.c
58	Manufacture of office, accounting and computing machinery
59	Manufacture of electrical machinery and apparatus n.e.c
60	Manufacture of radio, television and communication equipment and apparatus
61	Manufacture of medical, precision and optical instruments, watches and clocks
62	Manufacture of motor vehicles, trailers and semi-trailers
63	Building and repairing of ships, pleasure and sporting boats
64	Manufacture of railway and tramway locomotives and rolling stocks
65	Manufacture of aircraft and spacecraft
66	Manufacture of transport equipment n.e.c
67	Manufacture of furniture
68	Manufacture of n.e.c
69	Production, collection and distribution of gaseous fuels through mains
70	Manufacture of gas, distribution of gaseous fuels through mains
71	Collection, purification and distribution water
72	Construction
73	Sales, maintenance and repair of motor vehicles, motorcycles; retail sale of fuel
74	Wholesale, trade and commission trade, except of motor vehicles and motorcycles
75	Retail trade and repair of personnel and household goods, exc. Motor vehicles and motorcycles
76	Hotels; camping sites and other provision of short-stay accommodation
77	Restaurants, bars and canteens
78	Transport via railways
79	Land transport; transport via pipelines
80	Water transport
81	Air transport
82	Supporting and auxiliary transport activities; activities of travel agencies
83	Post and telecommunications
84	Financial intermeditation, except insurance and pension funding
85	Insurance and pension funding, except compulsory social security
86	Real estate activities
87	Renting of machinery and equip. Without operator and of personal and household goods
88	Computer and related activities
89	Research and development
90	Other business activities
91	Education
92	Health and Social Work
93	Activities of membership organizations n.e.c
94	Recreational, cultural and sporting activities
95	Other service activities
96	Public administration and defense; compulsory social security
97	Ownership of dwelling

Source: State Statistical Institute

Table 7: 1998 Social Accounting Matrix

1998 SAM	1	2	3	4	5	6	7	8	9
1 Agriculture (1)									
2 Mining (2)									
3 Food Processing (3-2)									
4 Textiles and Tobacco (3-2)									
5 Textiles and Woollen Apparel (3-2)									
6 Paper (3-2)									
7 Wines and Paper Products (3-2)									
8 Sugar and Paper Products (3-2)									
9 Chemicals (3-2)									
10 Rubber and Plastics (4-3 and 5)									
11 Non-Metallic Mineral Products (4-3)									
12 Metals Lumps and Bricks (3-3)									
13 Chemicals (3-3)									
14 Non-Metallic Mineral Products (3-3)									
15 Non-Metallic Mineral Products (3-3)									
16 Non-Metallic Mineral Products (3-3)									
17 Non-Metallic Mineral Products (3-3)									
18 Non-Metallic Mineral Products (3-3)									
19 Non-Metallic Mineral Products (3-3)									
20 Transport and Communication (4-3)									
21 Services (4-3 and 4-4)									
22 Capital									
23 Household									
24 Government									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
Total Expenditure	1,197,240,726	1,696,040,947	5,392,101,465	1,822,555,345	2,916,910,645	340,815,459	1,204,102,171	1,845,291,711	1,406,546,499

1008 SAM		Chemicals (39-43)	Rubber and Plastics (44-47 and 66)	Non Metal Mineral Products (48-49)	Metals Iron and Steel (50-52)	Fabricated Metals (53-54)	Non Electrical Machinery (55-58)	Electric Machinery (59-61)	Transport Equipment (62-65)	Electricity Gas Water (69-71)
		10	11	12	13	14	15	16	17	18
Agum (39-43)	1									
Mixing (44-47)	2									
Food Processing (48-49)	3									
Beverage and Tobacco (50-52)	4									
Textiles and Weaving Apparel (53-54)	5									
Leather (55-58)	6									
Wood and Paper Products (59-61)	7									
Printed Paper Products (59-61)	8									
Non Metal Mineral Products (50-52)	9									
Chemicals (39-43)	10									
Rubber and Plastic (44-47 and 66)	11									
Non Metal Mineral Products (48-49)	12									
Metals Iron and Steel (50-52)	13									
Fabricated Metals (53-54)	14									
Non Electrical Machinery (55-58)	15									
Electric Machinery (59-61)	16									
Transport Equipment (62-65)	17									
Electricity Gas Water (69-71)	18									
Construction (72)	19									
Transport and Communication (73-75)	20									
Services (76-77 and 84-87)	21									
Agum (39-43)	22	27,233,038	15,078,192	2,779,607	263,416	528,891	6,225,838	477,438	7,283	26,411,107
Mixing (44-47)	23	3,333,333	462,813	9,944,103	3,239,222	9,021,113	346,627	3,333,333	12,517	30,500,121
Food Processing (48-49)	24	30,781,810	510,850	838,177	270,130	834,193	5,780,178	1,910	82,653	395,443
Beverage and Tobacco (50-52)	25	300,000	30,000	120,710	10	343	0,000	0	0,000	7,300
Textiles and Weaving Apparel (53-54)	26	-4,890,882	30,897,830	6,077,927	6,895,633	61,200,811	36,720,136	898,232	-4,072,913	13,727,897
Leather (55-58)	27	626,342	2,325,238	42,610	2,373,630	9,088,023	6,325,836	6,919,873	22,137	3,627,873
Wood and Paper Products (59-61)	28	1,700,000	1,300,000	13,300,000	1,000,000	20,000,000	20,000,000	1,000,000	1,000,000	10,000,000
Printed Paper Products (59-61)	29	6,110,000	21,300,000	31,000,000	11,000,000	30,000,000	15,000,000	10,000,000	6,000,000	100,000,000
Non Metal Mineral Products (50-52)	30	60,172,401	5,489,020	30,749,028	30,274,237	1,376,004	5,417,054	3,289,033	1,470,001	24,727,890
Chemicals (39-43)	31	1,000,000,000	100,000,000	20,000,000,000	20,000,000,000	20,000,000,000	20,000,000,000	20,000,000,000	20,000,000,000	20,000,000,000
Rubber and Plastic (44-47 and 66)	32	53,475,274	134,775,030	11,364,734	35,410,719	17,920,197	30,703,710	16,200,000	6,000,000	91,840,000
Non Metal Mineral Products (48-49)	33	67,829,825	8,325,048	8,028,015	26,100,000	20,400,000	2,400,000	10,000,000	1,000,000	100,000,000
Metals Iron and Steel (50-52)	34	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Fabricated Metals (53-54)	35	61,121,789	1,000,000	30,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Non Electrical Machinery (55-58)	36	20,000,000	0,000,000	40,000,000	1,000,000	4,000,000	2,000,000	2,000,000	2,000,000	4,000,000
Electric Machinery (59-61)	37	2,127,813	365,831	4,264,632	3,044,203	12,267,134	46,611,174	218,326,253	1,142,150	95,740,730
Transport Equipment (62-65)	38	36,840	45,700	60,000	1,885,944	3,301,181	7,754,070	6,824,654	145,295,301	5,260,890
Electricity Gas Water (69-71)	39	62,827,572	1,500,000	10,000,000	244,883,910	92,000,000	14,542,410	5,200,000	6,663,267	187,458,733
Construction (72)	40	0,000	0	0	0	0	0,000	0	0	0
Transport and Communication (73-75)	41	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Services (76-77 and 84-87)	42	270,700,487	24,729,020	100,000,000	340,220,000	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000
Debt	43	213,700,263	1,888,644	136,81,471	187,432,726	1,889,407	205,707,636	138,165,762	170,283,968	230,841,200
Capital	44	375,34,367	24,840,376	63,188,529	92,787,274	163,592,617	620,034,656	30,206,473	782,700,303	674,321,410
Government	45	0,000,000	0,000,000	0,000,000	0,000,000	0,000,000	0,000,000	0,000,000	0,000,000	0,000,000
Private	46	275,343,644	24,840,376	63,188,529	92,787,274	163,592,617	620,034,656	30,206,473	782,700,303	674,321,410
Private	47	275,343,644	24,840,376	63,188,529	92,787,274	163,592,617	620,034,656	30,206,473	782,700,303	674,321,410
Private	48	275,343,644	24,840,376	63,188,529	92,787,274	163,592,617	620,034,656	30,206,473	782,700,303	674,321,410
Private	49	275,343,644	24,840,376	63,188,529	92,787,274	163,592,617	620,034,656	30,206,473	782,700,303	674,321,410
Total Expenditure	50	2,144,145,835	1,944,660,565	2,187,352,780	3,018,387,193	1,477,518,514	2,018,356,824	1,387,268,287	1,578,166,615	2,856,161,216

1998 SAM	Construction (72)	Transport and Communication (73-83)	Services (74-77 and 84-97)	Agriculture (1-7)	Mining (8-12)	Final Processing (13-22)	Beverage and Tobacco (23-25)	Textile and Wearing Apparel (26-29)	Leather (30-32)
Agriculture (1-7)	1	19	20	21	22	23	24	25	26
Mining (8-12)	2				22	23			
Food Processing (13-22)	3					23	24	25	26
Beverage and Tobacco (23-25)	4					23	24	25	
Textile and Wearing Apparel (26-29)	5								26
Leather (30-32)	6								26
Wood and Paper Products (33-34 and 37)	7								
Paper and Paper Products (35-37)	8								
Textile and Wearing Apparel (26-29)	9								
Leather (30-32)	10								
Wood and Paper Products (33-34 and 37)	11								
Paper and Paper Products (35-37)	12								
Textile and Wearing Apparel (26-29)	13								
Leather (30-32)	14								
Non-Metallic Mineral Products (40-45)	15								
Metal Iron and Steel (50-52)	16								
Fabricated Metals (53-59)	17								
Non-Ferrous Metal Industry (60-66)	18								
Electric Machinery (70-71)	19								
Transport Equipment (80-86)	20								
Electrical Goods (90-91)	21								
Construction (72)	22								
Transport and Communication (73-83)	23								
Services (74-77 and 84-97)	24								
Labor	25	87,041	57,929,081	265,029,050					
Capital	26	1,071,218	1,826,581	1,529,213					
Household	27	307	122,730,129	748,107,870					
Government	28	C	10,273,815	176,538,309					
Textile and Wearing Apparel (26-29)	29	34,807	89,818,153	75,667,055					
Leather (30-32)	30	5,000	1,117,575	5,284,241					
Wood and Paper Products (33-34 and 37)	31	1,971,011	2,970,174	91,471,119					
Paper and Paper Products (35-37)	32	54,892	11,715,035	215,388,035					
Textile and Wearing Apparel (26-29)	33	2,891,827	112,772,039	189,388,677					
Leather (30-32)	34	2,435,287	3,487,937	183,717,037					
Textile and Wearing Apparel (26-29)	35	2,014,402	83,640,373	78,110,875					
Leather (30-32)	36	51,933,771	4,221,433	163,301,593					
Wood and Paper Products (33-34 and 37)	37	22,052,272	2,001,763	43,370,425					
Paper and Paper Products (35-37)	38	12,411,281	29,002,773	17,198,139					
Textile and Wearing Apparel (26-29)	39	8,239,728	11,468,072	283,321,839					
Leather (30-32)	40	2,052,818	31,875,839	91,738,217					
Textile and Wearing Apparel (26-29)	41	484,280	183,888,853	81,788,023					
Leather (30-32)	42	1,633,188	17,218,153	456,788,075					
Construction (72)	43	10,318	287,847	185,227,475					
Transport and Communication (73-83)	44	11,059,974	1,912,429	1,413,011,521					
Services (74-77 and 84-97)	45	15,413,721	1,293,801,021	2,570,425,174					
Labor	46	1,000,000,000	1,000,000,000	1,000,000,000					
Capital	47	488,908,422	2,827,060,739	1,459,145,023					
Household	48	3,881,213,028	543,225,821	1,087,787,874	207,887,280	13,007,531	84,785,429	54,055,108	243,408,443
Government	49								
SSS	50								
Flora	51								
Capital Account	52								
FCR	53								
Total Expenditure	54	5,850,567,810	8,958,349,548	28,464,874,593	7,897,425,811	2,524,634,524	5,022,261,213	1,086,297,647	4,097,221,511

1998 SHM		Wood and Paper Products (24 and 27)	Paper and Paper Products (25-27)	Permitted Products (28)	Chemicals (30-43)	Rubber and Plastics (44-49 and 66)	Non Metal Mineral Products (50-49)	Metals Iron and Steel (50-52)	Fabricated Metals (53-54)	Non Electrical Machinery (55-56)	Electric Machinery (57-61)	Transport Equipment (62-66)	Chemical Machinery (67-71)	Construction (72)	Transport and Communication (73-83)	Services (84-87 and 84-87)	Agriculture (87)	Mining (88-92)	Food Processing (93-95)	Textiles and Textiles (96-99)
		28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Agriculture (87)	1																			
Mining (88-92)	2																			
Food Processing (93-95)	3																			
Textiles and Textiles (96-99)	4																			
Wood and Paper Products (24 and 27)	5																			
Paper and Paper Products (25-27)	6																			
Paper and Paper Products (25-27)	7	1,572,100,100																		
Paper and Paper Products (25-27)	8		1,280,240,020																	
Permitted Products (28)	9			1,260,000,178																
Chemicals (30-43)	10				1,350,114,465															
Rubber and Plastics (44-49 and 66)	11					1,463,173,435														
Non Metal Mineral Products (50-49)	12						1,387,540,701													
Metals Iron and Steel (50-52)	13							2,152,445,107												
Fabricated Metals (53-54)	14								1,002,020,000											
Non Electrical Machinery (55-56)	15									1,763,914,000										
Electric Machinery (57-61)	16																			
Transport Equipment (62-66)	17																			
Chemical Machinery (67-71)	18																			
Construction (72)	19																			
Transport and Communication (73-83)	20																			
Services (84-87 and 84-87)	21																			
Agriculture (87)	22																			
Mining (88-92)	23																			
Food Processing (93-95)	24																			
Textiles and Textiles (96-99)	25																			
Textiles and Textiles (96-99)	26																			
Textiles and Textiles (96-99)	27																			
Wood and Paper Products (24 and 27)	28																			
Paper and Paper Products (25-27)	29																			
Permitted Products (28)	30																			
Chemicals (30-43)	31																			
Rubber and Plastics (44-49 and 66)	32																			
Non Metal Mineral Products (50-49)	33																			
Metals Iron and Steel (50-52)	34																			
Fabricated Metals (53-54)	35																			
Non Electrical Machinery (55-56)	36																			
Electric Machinery (57-61)	37																			
Transport Equipment (62-66)	38																			
Chemical Machinery (67-71)	39																			
Construction (72)	40																			
Transport and Communication (73-83)	41																			
Services (84-87 and 84-87)	42																			
Textiles and Textiles (96-99)	43																			
Textiles and Textiles (96-99)	44																			
Household Consumption	45	73,333,286	53,204,131	68,268,659	121,337,807	105,707,294	64,702,163	166,463,375	73,331,805	94,026,715										
Exports	46																			
Capital Account	47																			
POW	48	65,407,666	254,647,357	200,263,603	1,612,334,668	415,712,574	1,007,077,603	1,407,435,210	371,433,200	2,076,166,733										
Total Expenditure	50	1,261,060,073	1,288,107,486	1,629,164,729	4,226,111,625	2,004,525,243	2,106,571,049	4,160,345,833	1,689,536,240	4,094,106,028										

1990 SIC	Electric Machinery (9-41)	Transport Equipment (32-66)	Electricity Gas (49-71)	Construction (72)	Transport and Communication (40-48)	Services (80)	Finance and Insurance (60-69)	Trade	Government	Household
Apparel (26)	1									
Mining (10)	2									
Food Products (20-24)	3									
Drugs and Chemicals (28)	4									
Textiles and Wearing Apparel (26-31)	5									
Leather (31-32)	6									
Wood and Paper Products (23-24 and 26)	7									
Paper and Paper Products (26-27)	8									
Petroleum Products (13)	9									
Chemicals (28-30)	10									
Rubber and Plastics (24-25 and 26)	11									
Non-Metallic Mineral Products (10-12)	12									
Metals Iron and Steel (33-34)	13									
Fabricated Metals (33-35)	14									
Non-Ferrous Metal Products (33-36)	15									
Electrical Machinery (36-41)	16	1,354,337,949								
Transport Equipment (37-39)	17		1,881,331,890							
Electricity Gas (49-71)	18			205,917,144						
Construction (72)	19				9,821,461,697					
Transport and Communication (40-48)	20					6,973,430,213				
Services (80-89)	21						21,572,388,116			
Finance and Insurance (60-69)	22								5,578,488,170	
Mining (10)	23								11,371,374	
Food Products (20-24)	24								8,268,294,790	
Drugs and Chemicals (28-29)	25								744,429,590	

Textiles and Wearing Apparel (26-31)	26									838,888,821
Leather (31-32)	27									143,610,100
Wood and Paper Products (23-24 and 26)	28									445,490,665
Paper and Paper Products (26-27)	29									437,837,821
Electrical Machinery (36-41)	30									45,222,446
Transport Equipment (37-39)	31									1,182,674,271
Rubber and Plastics (24-25 and 26)	32									1,245,283,413
Non-Metallic Mineral Products (10-12)	33									133,247,407
Metal Iron and Steel (33-34)	34									7
Fabricated Metals (33-35)	35									297,792,670
Non-Ferrous Metal Products (33-36)	36									1,138,294,113
Electrical Machinery (36-41)	37									688,424,745
Transport Equipment (37-39)	38									1,177,122,461
Electricity Gas (49-71)	39									438,561,042
Construction (72)	40									3
Transport and Communication (40-48)	41									4,610,484,715
Services (80-89)	42									14,245,761,485
Labor	43									
Capital	44									
Household	45							11,930,051,213		
Government	46	67,822,029	62,757,111	62,740,000	300,020,220	130,017,692	304,470,193		2,307,241,300	4,033,094,077
Interest	47								2,386,673,133	
Capital Account	48								36,118,788,461	
Profit	49	1,348,706,114	1,061,861,827	27,777,110	47,013,514	1,038,858,683	1,158,108,880			142,442,136,117
Total Expenditure	50	2,461,325,091	2,110,960,842	2,142,026,098	4,669,073,709	7,434,134,692	21,265,240,296	11,297,030,743	32,162,319,593	52,004,943,937

1990 SAM		Government		SIS		Firms		Capital Account		ROW		Total Income		Control
		00	00	00	00	00	00	00	00	00	00	00	00	
Agriculture 1-7	1									540,570,082		540,570,082	U	
Mining 8-12	2									70,702,520		70,702,520	0	
Food Processing 13-23	3									527,174,715		527,174,715	0	
Beverage and Tobacco 23-25	4									118,977,691		118,977,691	0	
Textiles and Wearing Apparel 26-31	5									2,239,827,020		2,239,827,020	0	
Leather 31-32	6									139,866,189		139,866,189	0	
Wood and Paper Products (33-34 and 67)	7									107,097,709		107,097,709	0	
Paper and Paper Products (35-37)	8									54,957,703		54,957,703	0	
Petroleum Products(38)	9									195,644,317		195,644,317	0	
Chemicals (39-43)	10									291,731,739		291,731,739	0	
Rubber and Plastic (44-45 and 68)	11									360,402,730		360,402,730	U	
Non-Metal Mineral Products(46-49)	12									107,404,709		107,404,709	0	
Metals Iron and Steel (50-52)	13									417,091,906		417,091,906	0	
Fabricated Metals (53-54)	14									115,296,491		115,296,491	0	
Non-Electrical Machinery(55-58)	15									234,441,897		234,441,897	0	
Electric Machinery(59-61)	16									335,604,288		335,604,288	0	
Transport Equipment (62-66)	17									293,791,652		293,791,652	0	
Electricity Gas Water(67-71)	18									3,650,267		3,650,267	0	
Construction (72)	19									606,234,610		606,234,610	U	
Transport and Communication(73-82)	20									2,504,491,200		2,504,491,200	0	
Services(83-87 and 88-90)	21									2,002,470,720		2,002,470,720	0	
Agriculture 1-7	22	177,507,422				-2,577,037,422						-2,790,047,070	0	
Mining 8-12	23	4,383,290				765,285,910						770,672,190	0	
Food Processing 13-23	24	35,912,801				-293,965,113						-255,052,512	0	
Beverage and Tobacco 23-25	25	1,143,897				52,881,106						52,128,026	0	

Textiles and Wearing Apparel 26-31	26	40,570,227				1,740,042,050						1,754,022,201	-
Leather 31-32	27	5,970,022				00,070,720						00,000,145	-
Wood and Paper Products (33-34 and 67)	28	742,536				177,358,459						178,111,035	-
Paper and Paper Products (35-37)	29	30,452,642				86,633,727						86,171,065	-
Petroleum Products(38)	30	182,651,659				1,366,317,807						1,163,666,202	-
Chemicals (39-43)	31	32,033,850				784,032,730						816,066,600	-
Rubber and Plastic (44-45 and 68)	32	20,010,050				24,729,715						20,740,400	-
Non-Metal Mineral Products(46-49)	33	4,424,446				537,514,452						541,918,898	-
Metals Iron and Steel (50-52)	34	1,945,824				812,821,559						814,747,993	-
Fabricated Metals (53-54)	35	2,510,056				326,629,728						329,169,764	-
Non-Electrical Machinery(55-58)	36	13,952,252				2,177,626,035						2,181,577,327	-
Electric Machinery(59-61)	37	25,730,317				1,204,636,717						1,230,334,410	-
Transport Equipment (62-66)	38	16,652,040				1,406,170,312						1,412,003,252	-
Electricity Gas Water(67-71)	39	104,091,479				40,071,019						140,292,750	-
Construction (72)	40	25,412,520				5,426,071,442						5,447,204,015	-
Transport and Communication(73-82)	41	175,652,558				-1,399,732,827						-1,163,510,239	-
Services(83-87 and 88-90)	42	5,000,712,813				2,574,724,554						7,575,507,367	-
Exports	43											0	-
Imports	44											0	-
Capital Account	45											U	-
Household	46	878,730,658	1,631,647,750	26,022,730,006						1,302,777,840		41,054,880,244	-
Government	46					1,256,757,243				41,346,044		1,298,113,287	-
FIR	47	1,753,871,750										1,753,871,750	-
Firms	47	0,907,720,074								1,002,075,070		0,120,010,004	-
Capital Account	48	-974,337,137			257,638,759					589,543,271		-117,155,127	-
ROW	49	698,628,527			627,955,357							1,326,622,074	-
Total Expenditure	50	11,716,623,339	3,620,617,790	38,236,111,916	12,176,153,387	16,899,816,316						84,618,282,287	0

Table 8 : 1998 Aggregated Input Output Table

	AGRI	MINI	FOOD	TODA	TEXT	LCAT	WOOD	PAPR
AGRI	249591212	673913529	171713013	36251321	599169203	262231145	924219857	500722507
MINI	1117744187	835912168	552931672	183771895	279657873	400797282	779479588	486185878
FOOD	313472698	629048275	53276203	337953056	332454052	261240733	3202614018	1308922691
TODA	12125713	113313074	44712743	11331344	447125402	25733447	435022759	134124137
TEXT	89923578	5247997	39977853	17782945	132714513	298274329	597499175	18733174
LCAT	60179748	454781648	813274743	1027931041	599732745	298274329	473213285	537536295
WOOD	2671114	401591259	925011713	107923582	136233173	11449670	17500041	21821100
PAPR	85715789	125715323	178611612	595319359	757159289	52139127	15179922	35797763
IN-TR	179959957	713783071	920473741	781297827	198477322	69377847	142733588	194739741
CHDM	221001605	930071922	337112255	4127167826	356192710	113549572	12327762	99054715
PODR	782351931	179103001	170352125	39121121	121717180	90717506	20026029	37027710
MHDU	16949570	117879678	89271957	125773358	319737585	171028292	71748749	87733651
MFTA	47447754	117079646	137578	83669776	473357712	79167834	754747059	27657974
FADM	11049423	29397002	12701324	17705065	23695431	10071100	27727449	13094779
MACH	57727868	51323589	18732571	198978528	19828178	69859006	526395288	18207872
H-CM	17571142	14978406	43778793	60746799	170378485	48797807	143787355	43958771
TBMS	649302037	223407212	603072477	169723959	130027100	10370727	90023002	12913297
DNBY	221160072	13009891	2975277	10333333	16517970	28172200	79023000	1002777
CDMS	45812457	0	74597473	77073155	294629971	59764879	9707998	1597981
TRCM	3092727	157903547	92087380	113086103	717295838	702730482	27079814	136402801
SERV	1674009	70000285	10040222	10349722	21524770	21931572	41340220	2272777
Total Inputs	459306336	133693016	137818665	206731861	136623169	208361131	637489727	12723279
Net Taxes	469740627	133953985	26964011	43272707	17975573	43367017	59733927	13407107
Taxes-Subventions	-320000107	-100000493	239904847	30220207	107000020	42000000	123700079	-30770079
Subventions	12111252	0	12832058	7128007	0	0	0	4119185
Wage Payments	797271848	18295578	37747913	602071071	514482782	261154779	77991174	8974471
Consumption of Fixed Capital + Operating Surplus	218280756	117674779	93863307	291379381	242022973	865311326	130611881	351773453
Total Output	679234878	153664847	569191465	402959840	539628645	446150584	1284307771	114626371

	PETR	CHDM	PBER	MRAL	META	FADM	MACH	ELCM
AGRI	115782188	973958337	122387013	207730702	262413482	539907858	88579847	427457384
MINI	113270672	37966711	44235825	65449648	307932068	613216134	544625663	370075320
FOOD	39973777	67087110	513907037	369127021	207138673	76412554	376917679	12756737
TODA	402029714	930072027	930072027	132104069	12143452	242340297	602348203	370021290
TEXT	11030070	44400100	107700100	077700100	26060727	625011075	287297649	30225377
LCAT	210300107	62002000	22928007	42002700	20700001	10700200	10000010	3070000
WOOD	3857004803	123857008	185770773	76673807	178707078	238818284	218738072	24753840
PAPR	549704480	518029587	518029587	518029587	112603986	334497327	15910977	379979100
PFTR	18548817	177771113	640307455	607138988	567726777	657967359	541753740	22699189
CHDM	864307412	117812938	17166487	896470017	307538078	353706137	31039678	164773263
PODR	119903479	937027030	107302119	110470210	361973748	1302020	299070709	102923002
MRAL	371227471	53313054	10779100	07740010	371227471	21597007	165930411	13001000
META	191243112	10462200	17210111	161119010	28101000	9910711	21017112	49103907
FADM	581378873	51617993	111988627	851837822	120130608	113278952	458037867	200671527
MACH	397272075	93741355	610381258	444833481	107707068	113975184	210739973	298997368
H-CM	210025111	1127913136	685906135	40673772	364410687	170973387	461617475	218792538
TBMS	140120644	38575074	497107341	307190095	66954097	827181427	775708694	53246974
DNBY	96000703	920079724	10029000	11930404	30400210	23002193	14024079	37028900
CDMS	200300902	628418039	112581949	21280210	21040254	57011347	15404700	41212000
TRCM	200300902	107007070	107007070	11280700	200300902	100219200	60720079	37001707
SERV	289787567	873767989	847598079	135985129	316231802	139477117	16627976	306223084
Total Inputs	470344451	174159356	673400757	87327007	487042607	5047854	371677847	200797858
Net Taxes	470344451	174159356	673400757	87327007	487042607	5047854	371677847	200797858
Taxes-Subventions	0	2222	0	0	0	0	0	9000
Subventions	0	2222	0	0	0	0	0	9000
Wage Payments	51188412	210012522	110004432	10014707	10702707	17505007	20137077	10701000
Consumption of Fixed Capital + Operating Surplus	36750075	875473556	1490613	17798994	9758857	360697	67104695	3706764
Total Output	148554685	26444885	9346055	24078270	30138703	14763856	20838676	13876698

	ENGY	CONS	TRCM	SERV	totalem
AIRP	26140126.94	574740.5424	27925081.02	393222230.1	4313276120
MNE	30530021.4	1379215.009	1020000.302	957922.2355	300107336.0
BOUL	8254430393	2323055329	2323055329	745997665.6	1301056143
TODA	700700004	3040533020	10270015.10	173090305.5	200515211.2
TEXT	18737697.23	318932242	98515159.76	73165955.7	1799878233
LEAT	3607075.639	5198625662	117574.76	506424	187069734.7
WOOD	3823200.027	3577331.147	2076173.730	01411610.14	537026358.0
PAPR	4827379.222	5267343496	1075034.6	375660530.2	812378751.3
PCTR	124737950.0	2394020.777	1142772095	139030544.7	1301907070
CHEM	9423635256	2438236.684	9435237.06	159779267.4	762267548.1
PDIR	2005402.47	204402.07	09040371.0	73110000.30	379035577
MRAL	155405469.5	33906774.72	1358465.502	353680996.5	652697118.5
META	15554221.18	22853272.37	8083243.217	45376427.19	226547318.9
FAEM	130170073.2	1241200.87	20062448.15	77108430.36	530025300.1
MACH	46756258.37	3289724.559	14495474.45	297824830.7	537339349.6
ELCM	90740739.34	2330040.993	3070008.00	91739247.24	201170392.1
TRNS	5263630238	454259.7945	230666649.5	81756223.49	551886510
ENGY	137466736.3	1339166.038	4070E162.53	454068075.6	920265370.6
CONS	100.6151412	3235331.99	3579471801	135279705.9	180683391.3
TRCM	144352055.2	13659975.86	697352426.6	1410101327	2393996679
SERV	248304307.8	13418124.54	1203403621	3056023574	7542003080
Total Inputs	1557266590	189733693	3973360716	9152961444	27517517783
Net Taxes	-715390490.2	3002230095	340200029.0	-130739504.7	5720070090
Taxes-Subventions	-682336767.2	3652232845	376077761.5	5450995393	5593780676
Subventions	33559726	2750	32774232	204213500	370704578
Wage Payments	239341209.2	1366631600	1103294504	7101603530	12380258283
Consumption of Fixed Capital +Operating Surplus	974331470.2	439906421.6	3527060795	7435914323	27518797805
Total Output	2850701716	5050577018	8956349548	30454974593	73039649569

	Private Consumption	Public Consumption	Private Investment	Public Investment	Stock change	Export	Total Demand	Input	Total Supply
AIRP	5534551.1	1284501.7	28715479.6	33910182	-143768124	54530001.5	173941013	545301350	421034476
MNE	63073317.25	4383243.821	0	0	76628897.35	70762500.43	653745473.2	302756576.5	1698643947
BOUL	3068201390	38012571.34	0	0	-373066113	579174715.4	574353540	451407080.0	646681436
QJA	7444237930	114339210.9	0	0	503470923	11057091.5	79055300	432119700	102259585
TEXT	666838331.5	4688327.58	191021266	37127683	1555744930	2558827302	366430363	313111442.6	669003397.6
LEAT	148038153.7	8066371.518	0	0	30366723.31	13766683.3	33251305	135155367.0	44686753.1
WOOD	445499395.4	742535742.9	7783156.2	935666821	36556976.35	10709583.3	62361302.5	3547664.87	120430277.1
PAPR	407337131.6	30462541.68	147451676	371637582	-3407886.55	5407703.28	35166115.1	25447366.5	1145783731
PCTR	4802294430	1023310.9	0	0	-1101347031	15144217.3	-73460702.2	299107929	143262363
CHEM	1162971704	32933876.66	0	0	761032723.7	261731429.7	1879933301	130254688	264175336
PDIR	1306570478	36615707.4	630133410	55510505	17164366.32	366481133	1347335314	41377573.8	1644661556
MRAL	100503140	440440007	0	0	07574452	105404300.3	700402040.5	122522392.7	2107502790
META	0	1046324267	0	0	61280550	41860035.3	614747333.3	1420466700	301387103
FAEM	257700377	25430014	49012055	10071079	25520000.3	112004891.5	020902352.1	239011392	147703010
MACH	1008592716	1395261.7	79555202	307176843	7488260.37	26144397	620173046	2216165283	30835302
ELCM	66642445.7	26733311.17	07633364.6	245060635	307004.37	356604383.2	106753564	1349060.4	158736397
TRNS	1047023421	100292502	114422000	152427000	10542757.3	25794052.4	2200520700	103007027	157070310
ENGY	436250247	104631430.4	0	0	4360138.54	3600267.25	68454200.7	27000110.30	2066761716
CONS	0	2541257270	36002622	1347302223	0	300240130	140723531	470102137	300000000
TRCM	4679437116	78652567.7	866252622	14758447	2442804138	266149233	3455973376	103668888	669897356
SERV	13966751456	8003711818	100055703	26813835	37606883.0	3663408173	1072253367	1136109680	3048407453
TOTAL	2900001027	982374400	3070022001	3050057970	-210007190	12710000100	5400400921100	14572242947	0090700000