

CHAPTER 4

MODEL AND DATA

This chapter is divided into four sections. First, a brief overview of general equilibrium theory is presented, followed by the application aspects of the theory. A description of the model used in the analysis is presented next, and finally, the chapter concludes by discussing the main source of data (Social Accounting Matrix of India) for this study.

4.1. Theoretical background

The modern paradigm of general equilibrium has a longstanding history of development. Many seminal studies, dating back to as early as the 18th century, played important roles in shaping the theory until Arrow and Debreu (1954) finally formalized the concept and rigorously proved the existence of equilibrium in an economy where agents make independent decisions. In the competitive Arrow-Debreu equilibrium, demand and supply decisions depend only on relative prices. An Arrow-Debreu economy is of decentralized nature, and is characterized by commodities, endowments, consumers and producers. Every commodity has a price, a real number, expressed in some arbitrary unit of account. This allows for distinguishing between three types of commodities namely scarce (positive price), free (the price is zero) and noxious commodity (negative price). Without loss of generality, it is possible to consider only nonnegative prices, due to assumptions used in the proof of existence of equilibrium. Moreover, it can be shown that such a set of equilibrium prices will be strictly positive. The economy is perfectly competitive meaning that each economic agent is insignificant in affecting prices.

The number of producers and consumers is finite. They choose production/consumption plans, which formally can be represented by a vector from \mathbf{R}^l space, where l is the number of commodities. Producers at any given instant choose a production plan so as to maximize profit subject to technological constraints. Summing over production plans we get total supply/output of the economy. Consumers are characterized by their preferences and resources available to them. Every consumer chooses “the most preferred” consumption plan subject to his/her wealth constraint. Summing over consumption for each consumer we get total demand in the economy. The crucial assumption on consumption and production sets is that they should be convex. In case of the producer this assumption rules out the possibility of increasing returns to scale. Convexity plays an essential role in proving the existence of general equilibrium. Convexity is a part of a set of sufficient conditions for the existence of general equilibrium but it is not necessary.

Total resources are represented by a point from \mathbf{R}^l space and are given a priori. The economy is characterized by private ownership, that is, consumers own the resources and receive all revenues from production.

Given the economy as above the mathematical problem of proving the existence of equilibrium reduces to finding a set of prices p , which would make excess demand zero for every commodity. The problem was solved by the joint effort of Arrow and Debreu in 1954 with the help of Brouwer's and Kakutani fixed point theorems.

In order to make general equilibrium theory applicable to the real world, where taxes and governments play an indispensable role, the work of Shoven and Whalley (1973) deserve special mention. Shoven and Whalley (1973) proved the existence of the general equilibrium solution in the presence of ad valorem producer and consumer taxes. It was an important step for the development of empirical applications of general equilibrium theory.

Shoven (1974) offered a more formal treatment of this issue by including taxes and government into the Arrow-Debreu framework. The government in this setting plays no role other than collecting taxes and distributing revenues. The difference from the classic Arrow-Debreu general equilibrium model is that now consumer demands and incomes depend not only on prices, but on demand and supply decisions of other consumers and producers in the economy. Shoven (1974) showed that even in the presence of taxes, the behaviour of economic agents satisfy the necessary conditions for an Arrow-Debreu equilibrium, hence, the standard proof readily applies. The computable general equilibrium model of international trade is demonstrated by Shoven and Whalley (1974), which provides an alternative proof of existence of a competitive equilibrium with international markets and tariffs.

One important concept of equilibrium, the Core, is due to Edgeworth. In the Edgeworth exchange economy the Core represents a set of allocations or equilibrium states, where no agent or coalition of agents can improve themselves without making at least one agent worse off. As the number of agents in the exchange economy approaches infinity the Core approaches the Arrow-Debreu competitive equilibrium. This result has one important implication, that is, under appropriate assumptions, such as convexity and no market externalities, the competitive equilibrium is robust (Arrow and Hahn, 1971). Hahn (1973) considers the Core to be the concept of social equilibrium as there is no reason, he asserts, for a coalition of agents to take the interests of others into account when there is a feasible opportunity to improve themselves. According to Hahn (1973), “the notion that a social system moved by independent actions in pursuit of different values is consistent with a final coherent state of balance and one in which the outcomes may be quite different from that intended by the agents is surely the most important contribution that economic thought has made to the general understanding of social processes.”

4.2 Overview of computable general equilibrium (CGE) models

According to Robinson et al (1999), “the multisector CGE model provides a versatile empirical simulation laboratory for analyzing quantitatively the effects of economic policies and external shocks on the domestic economy.” The development of applied general equilibrium analysis has been accompanied by an ongoing debate over which school of economic thought should prevail in the construction of “real-world” CGE models - neoclassical or structural.

Neoclassical models assume optimizing behaviour and full employment of the production factors. It dates back to Walras and his assumptions. Households are assumed to own the production factors, and to spend all of their income on purchases of goods and services. The assumption of private ownership of primary factors ensures the fulfillment of the income expenditure balance, that is, total value of goods and services demanded is always equal to the total value supplied.

A solution to early neoclassical models (Scarf and Shoven, 1983); Shoven and Whalley, 1984), was obtained by finding fixed points using Scarf’s algorithm (Taylor, 1990). With the development of computational ability this approach was abandoned in favour of nonlinear equation solving procedures, which were endorsed by the structuralist modellers. The structuralists’ argument against neoclassical point of view could be briefly described as – this is not the world we live in. Supporters of the structuralist modelling school argue that structural characteristics such as unemployment, imperfect competition or financial mechanisms are fundamental to the behaviour of the economy. In practice this debate implies the choice of closure rules to apply. Nowadays, the majority of CGE models attempt to take the best from both worlds – the elegant neoclassical foundation and the practical structuralist features. Nevertheless, Walrasian general equilibrium paradigm is the foundation of most CGE models.

It is widely accepted that a pioneer in the development of CGE models was Leif Johansen (Johansen, 1960). His 22 sector model of Norway was a pioneering extension to the input-output framework and allowed for price changes and substitution in production and consumption. The general structure of his model has been adopted by many researchers in the field in later years. Some of the major assumptions that he employed are - factors (labour and capital) are substitutes in the Cobb-Douglas production function; intermediate demand is a Leontief type fixed coefficient function; household consumption, government consumption and investment levels depend on relative prices; fixed aggregate investment and full employment of production factors, which are mobile across sectors. However, as pointed out by Goldberger (1961), treatment of foreign trade was the least thorough. Imports and exports were determined exogenously (using fixed production coefficients) and in addition imports were split into competitive and non-competitive, which were further divided into imports of consumption and production goods.

A more comprehensive representation of foreign trade, where domestic production and imports of similar goods are substitutes in the CES function was offered by Armington (1969), which has become a standard assumption in CGE models. Armington's treatment of foreign trade implied imperfect substitutability between domestic and foreign goods. Before that trade was generally modelled as net or one way, that is, a country could either be exporting or importing a particular commodity. This treatment was based on the classical Heckscher-Ohlin model of competitive advantage based trade.

In most models all prices are relative and expressed in terms of one of the prices in the system called the numeraire. Depending on the macro closure, common choices for the numeraire are the GDP deflator, the nominal exchange rate or the price index.

Normally equations describing the behaviour of economic agents such as supply and demand functions are homogeneous of degree zero in prices. Doubling all prices in the model will have zero effect on the real variables and result in doubling of all nominal variables. Such money neutrality renders all nominal variables practically irrelevant for interpretation. In equilibrium the model satisfies Walras' law, that is, if supply equals demand in any $n-1$ markets, the same should hold true for the remaining n^{th} market.

CGE models are usually supply driven in the sense that the total supply of primary factors is fixed, and equilibrium is achieved by adjustments of factor prices (wage and rental rate). It has become common however to incorporate structuralist features such as unemployment and less than full capital utilization. With such adjustments the model becomes more reactive to the demand-side shocks. For example the government could affect growth using fiscal policy, something that would not have a real effect if there was full employment of production factors.

Households' consumption behaviour is derived from maximising utility function subject to income constraint. By and large the Stone-Geary utility function is used for households. It includes the Cobb-Douglas functional form as a special case, and has a subsistence consumption level which households have to obtain before any other spending. Various transfers are also often present in CGE models, but they are generally fixed in real terms and in most cases included to balance the accounts.

Government expenditure is typically fixed in real terms, while government savings is a residual item. To balance savings and investments neoclassical closure has been used extensively in CGE applications. It assumes that savings by the government, households, enterprises and rest of the world are equal to total investments. Investments in a static, one-period model play only a nominal role with no link between investment expenditure and capital accumulation.

The labour market is one of the macroeconomic components of a CGE model, and it is especially significant from the point of view of this study. Labour is assumed to be an input in a neoclassical production function. Usually labour supply is fixed exogenously, and according to the profit-maximizing behavior of the productive sector labour demand is determined. Since the fundamental property of a neoclassical general equilibrium model is the concept of flow equilibrium in product and factor markets, labour demand is derived endogenously as a function of the output price and the wage rate, and it is equalized to labour supply. The wage rate adjusts for market clearing in the labour market. In most CGE models the labour demand equation specifies the labour demand by sector, and perfect inter-sectoral labour mobility is assumed usually.

Modelling the labour market in the context of developing countries is a challenging task mainly because of the presence of a large informal sector. Several studies have attempted to capture the characteristics of labour markets in developing countries and some of these characteristics are discussed in the following paragraphs. It is important to note that the way the labour market is modelled has effects on macro variables like income, wage rate, employment etc, and therefore capturing some of the intricacies of labour markets assumes significance from the perspective of this study.

One of the most frequently used extensions of the labour market in a CGE model framework is to split up the whole labour force into specific labour categories. For example, labour can be disaggregated by skill category or educational level. Another possibility is to segment the labour market across several sectors (like agriculture, manufacturing etc.) which may result in differing wages among sectors. The segmentation over such broad categories can also comprise of a distinction between urban and rural labourforce. Moreover, such specifications of the labour market allow for further modifications of the model. For example, on the one hand there exist approaches assuming significant and persistent wage differentials across sectors for the same occupational

group (Katz and Summers, 1989). On the other hand in Maechler and Roland-Holst (1998), labour of a specific skill is considered perfectly mobile across sectors implying a single economy-wide average wage for each skill. In all these cases labour is modeled as a CES (constant elasticity of substitution) aggregate of the defined labour categories. These extensions provide a more detailed picture of the labour market and therefore allow for further conclusions when it comes to analyzing the impacts of specific policies on employment.

In case of developing countries, one of the most common labour policy instruments is a minimum wage policy. This is the case when the government fixes a certain wage rate employers are not allowed to undercut. Such a minimum wage policy can be modelled for either the whole economy or for some specific sectors by fixing the wage rate. In this study we fix the wage rate of rural labour as discussed later in the chapter.

4.3 Model description

The model used in this study is a multisectoral static CGE model, based on Lofgren et al. (2002). The model consists of 10 sectors - Agriculture, Mining, Manufacturing I (food and beverages, textiles, wood, minerals), Manufacturing II (plant and machinery), Electricity, Construction, Transport, Trade, Financial Services and Commercial Services. There are two factors of production, capital and labour. Further, labour is disaggregated into rural and urban labour. The disaggregation of labour into rural and urban is necessary to distinguish the effects of MGNREGA on the rural and urban labour markets.

Producers are assumed to maximize profits and to operate in perfectly competitive markets. Households maximize utility subject to income and prices, and the household demand for commodities is modelled through the linear expenditure system (LES). Household income

comprises of income derived from labour and capital and transfers from the government and the rest of the world. Households also save part of their income and pay taxes to the government. Further, households are classified into nine categories: five are rural (Self Employed in Non Agriculture, Agricultural Labour, Other Labour, Self Employed in Agriculture and Other Households) and four are urban (Self Employed, Regular Salaried, Casual Labour, and Other Households).

Government expenditure is on the consumption of goods and services, transfers to households and enterprises, and subsidies. Government income is from taxes (direct and indirect), capital, public and private enterprises, and rest of the world. Indirect taxes include excise duty (production tax), import and export tariffs, sales, stamp, service, and other indirect taxes. Government savings which is the difference between government expenditure and income is determined residually.

Imperfect substitution between domestic goods and foreign goods is allowed for in CGE models. In other words, producers/consumers are free to sell or consume goods from the domestic or foreign market based on relative prices. The Armington function is used to capture the substitution possibilities between domestic and imported goods. The import demand function, derived from the Armington function, specifies the value of imports based on the ratio of domestic and import prices. The CET function is used to capture substitution possibilities between domestic and foreign sales. The export supply function, derived from the CET function, specifies the value of exports based on the ratio of domestic prices to export prices. The elasticity of substitution determines the relative ease of substitution between domestic and foreign goods in response to changes in relative prices.

The model is Walrasian in character. Markets for all commodities clear through adjustment in prices. The consumer price index (CPI) is chosen as the numeraire and is therefore fixed. Macro closures play an important role in determining the results of CGE models. The model follows an

investment-driven closure (Keynesian type), that is, aggregate investment is fixed. The saving-investment balance is maintained through adjustment in aggregate savings (sum of household, government, corporate and foreign savings). The model assumes foreign savings to be fixed and the real exchange rate to be flexible. Government consumption expenditure is fixed within a period, and government savings is residually determined. Both direct and indirect tax rates are fixed. The household savings rate is also fixed. Two types of closures are assumed in case of capital. In the short run version of the model sectoral capital as well as the economy wide rental rate is fixed, but a sectoral distortion factor is used to capture differences in returns to sectoral capital. In the long run version of the model intersectoral mobility is assumed in case of capital, and the economy wide rental rate adjusts to clear the capital market. In case of the rural labour market the wage rate is held fixed in order to capture the elastic (perfectly elastic) nature of rural labour supply. However, in case of urban labour both the wage rate and supply are endogenous variables. Thus, the model incorporates structuralist features like unemployment, which is an important characteristic of the Indian labour market. The model is solved using the GAMS software (PATH solver).

4.4 Data

The main source of data for the analysis is a social accounting matrix (SAM) for 2002-03 constructed by Pradhan et al. (2006). The next section discusses the structure of a typical SAM, followed by the presentation of the SAM that is used in this study.

4.4.1 Structure of a SAM

A SAM is a square matrix that represents income and expenditure flows in an economy at a point in time. The different rows/columns of the SAM are called accounts. Each cell in the matrix represents, by convention, a flow of funds from a column account to a row account. Each account's

row/column totals are equal, implying that each account's income and expenditure match. A SAM is different from an input-output matrix because it not only traces the income and expenditure flows of different sectors of the economy, but it also contains complete information on different institutional accounts such as households and the government. The information needed to build a SAM comes from national accounts, household surveys, government budgets and the balance of payments accounts. Placing the data within the SAM framework almost always reveals inconsistencies between incomes and expenditures of the accounts, and therefore certain techniques are used to balance the row and column totals. The SAM, in addition to its use in the analysis of income distribution issues, is the main source of data for CGE models.

As mentioned above a SAM captures the different income and expenditure flows in an economy at a point in time. Production requires intermediate goods and primary factors of production (labour and capital). The primary factors are provided by different institutions (households, firms and government), and these institutions, in turn, receive returns from these factors in the form of wages and rents (value added). Apart from returns from labour and capital, institutions also receive payments from other sources such as transfers from the government, from rest of the world and from other institutions. The income is spent on the consumption of goods and services, for payment of taxes, for inter-institutional/rest of the world transfers, and for saving (investment). Total supply in the economy has to be matched by demand from the institutions and investment.

A schematic structure of a typical SAM is presented below (Table 4.1).The SAM has five major accounts - production, factors, institutions, capital, and rest of the world (ROW). The production account consists of activities (industries/sectors) and commodities. The activity account is the make matrix. Each row of this matrix gives the distribution of the outputs of different commodities produced by the industry. Each column of this matrix gives the value of output of the commodity of

that column produced by different industries (A1.2). On the other hand, industry purchases goods and services in the form of commodities (A2.1) and hires factor services in the form of labour and capital (A3.1) and pays indirect taxes towards the purchase of goods and services (A8.1). In totality this is called the absorption matrix.

Aggregate supply of the economy consists of imports in addition to commodities produced by industries (A10.2). This supply of commodities, in addition to meeting the intermediate demand of industries, meets the requirements of the components of the final demand. The components of final demand are households (A2.4), government (A2.7), gross fixed capital formation (A2.9) and exports (A2.10).

Factors receive value added (A3.1), as payment for their services, which is nothing but gross domestic product (GDP) at factor cost. They also receive net factor income from abroad, (A3.10). This total value added, that is, GDP plus net factor income from abroad, is gross national product (GNP) at factor cost. Since factor services are provided by institutions, factor income is either remitted abroad or accrues to domestic institutions. Hence, GNP at factor cost is distributed as – factor income to households (A4.3), operating profits of private enterprises (A5.3), operating surplus of public enterprises (A6.3), and income from entrepreneurship to government (A7.3).

In addition to income derived from factors, other sources of income for households are government transfers and interest on public debt (A4.7), and net current transfers from abroad (A4.10). In column 4, households spend their income on consumption, pay direct taxes (A7.4) and indirect taxes on purchases (A8.4), and keep the residual income as savings (A9.4). Apart from operating profit, source of income of private firms is interest on public debt from the government (A5.7). The private corporate sector pays corporate taxes (A7.5) out of its earnings and the residual is saved

(A9.5). Factor income is the only source of earning for public enterprises. The only entry in Column 6 is that of public sector saving (A9.6), which matches public sector earning.

Column 7 and row 7 represent the government account. Receipts of the government consist of income from entrepreneurship (A7.3), from direct taxes (A7.4) and (A7.5), and from indirect taxes (A7.8). Government expenditure includes expenditure on goods and services (A2.7), transfers to institutions (A4.7) and (A5.7), and indirect taxes on purchases (A8.7). The residual, which is the difference between government income and expenditure, is government saving (A9.7).

Capital account represents the aggregate capital account of all the institutions in the economy. It defines the savings and investment closure of the economy. Column 9 of the capital account shows the investment demand. It is the gross domestic capital formation inclusive of changes in stocks (A2.9), and indirect taxes on purchase of investment goods (A8.9). Row 9 indicates the sources of savings in the economy including aggregate capital depreciation, that is, consumption of fixed capital (A9.3). Households, private and public enterprises and the government contribute to domestic savings. These are net domestic savings. Foreign saving (A9.10) matches the difference between total investment, inclusive of indirect taxes, and gross domestic savings. The capital account can be disaggregated into the current account and the capital account in order to differentiate between the flow of goods and services (merchandise trade) and the flow of capital.

International transfers along with current account balance must finance the difference between imports and exports in the external closure. Transactions between the domestic economy and the rest of the world are represented by column and row 10. Foreign exchange inflows for the country come from exports (A2.10), net factor income (A3.10), net current transfers (A4.10) and net capital transfers (A7.10), from abroad. Imports (A10.2) represent foreign exchange outflows from the country to the rest of the world. The difference between foreign exchange receipts and outflows, after paying export taxes (A8.10), gives the net foreign exchange reserve as foreign savings (A9.10).

Table 4.1: Schematic structure of a SAM

	Activities	Commodities	Factors	Households	Private Enter.	Public Enter.	Govt.	Ind. Taxes	Capital A/C	ROW	Total	
	1	2	3	4	5	6	7	8	9	10		
1	Activities		Gross output A1.2								Output	
2	Commodities	Purchase of raw materials A2.1			Household consumption A2.4		Govt. consumption A2.7		Gross Fixed Capital Formation A2.9	Exports A2.10	Aggregate demand	
3	Factors	Value added A3.1								Net factor income A3.10	Factor Income	
4	Households			Endowment Of HH A4.3			Govt. transfers, interest on debt A4.7			Net transfers A4.10	Total Household income	
5	Private Enter.			Operating Profits A5.3			Interest on debt A5.7				Income of Private Enter.	
6	Public Enter.			Operating Surplus A6.3							Income of Public Enter.	
7	Govt.			Income from factors A7.3	Income tax by households A7.4	Corporate taxes A7.5			Total indirect taxes A7.8	Net transfers A7.10	Total govt. earnings	
8	Ind. Taxes	Taxes on intermediates A8.1			Taxes on purchases A8.4			Taxes on purchases A8.7		Taxes on investment goods A8.9	Taxes on exports A8.10	Total Indirect taxes
9	Capital A/C			Depreciation A9.3	Household savings A9.4	Corporate savings A9.5	Public sector savings A9.6	Govt. savings A9.7			Foreign savings A9.10	Aggregate saving
10	ROW		Imports A10.2								Foreign exchange payments	
	Total	Total cost of production	Aggregate supply	Total factor endowments	Total use of household income	Private Enter. expenditure	Public Enter. expenditure	Aggregate govt. expenditure	Total indirect taxes	Aggregate investment	Foreign exchange receipts	

4.4.2 Social Accounting Matrix for 2002-03

A social accounting matrix (SAM) of India for 2002-03, constructed by Pradhan et al (2006), is the main source of data for this study. The SAM consists of 27 rows and columns (accounts). The production account consists of 10 sectors - Agriculture, Mining, Manufacturing I (food and beverages, textiles, wood, minerals), Manufacturing II (plant and machinery), Electricity, Construction, Transport, Trade, Financial Services and Commercial Services. There are two factors of production – labour (rural and urban), and capital. The institutional accounts consist of nine types of households, public and private enterprises, and government. The last two accounts of the SAM are savings-investment (capital account) and rest of the world.

The main features of the SAM are presented in Table 4.2 and Table 4.3. The SAM (Table 4.4) is a snapshot of the economy in 2002-03. Agriculture accounts for about 24 percent, manufacturing (including mining) about 19 percent and services about 57, of the GDP, respectively. The value of GDP (at factor cost) is about 23,269 billion rupees. Manufacturing accounts for bulk of the exports (about 60 percent), followed by services (about 34 percent) and agriculture (about 6 percent). The manufacturing sector (including mining) accounts for about 77 percent of the imports. Since oil is a major import commodity, the share of mining in total imports is relatively high.

Table 4.2: Composition of output, exports and imports (percent)

Sector	Share of GDP (at factor cost)	Share of exports	Share of imports
Agriculture	23.76	5.79	2.37
Mining	2.60	1.03	25.57
Manufacturing 1	5.31	16.94	6.17
Manufacturing 2	11.04	41.99	51.02
Construction	6.39	0.00	0.00
Electricity	2.17	0.00	0.00
Transport	7.35	8.78	3.94
Trade	14.72	13.40	0.93
Financial services	11.02	0.45	0.91
Commercial services	15.64	11.62	9.08
TOTAL	100	100	100

Source: SAM (2002-03)

Table 4.3 presents the factor income shares of different institutions. As expected most of the rural labour income go to rural households while most of the urban labour income go to urban households. Among rural households most of the rural labour income goes to agricultural labour households (about 32 percent), while among urban households the major share of urban labour income goes to the salaried class (about 58 percent). Bulk of the capital income (about 29 percent) goes to the rural land owning group. Most of the rural population are engaged in agriculture (RH2 and RH4), while the urban population is dominated by the self employed (UH1) and salaried (UH2) classes.

Table 4.3: Factor income and population shares of domestic institutions

	Rural labour (percent)	Urban labour (percent)	Capital (percent)	Share of total population ** (percent)	Share of rural/urban poor population** (percent)
Rural non-agricultural self employed (RH1)	18.57	2.21	6.56	10	12
Rural agricultural labour (RH2)	31.96	5.61	0.08	23	48
Rural other labour (RH3)	2.95	0.52	0.80	5	7
Rural agricultural self employed (RH4)	20.59	7.89	29.39	27	28
Rural other households (RH5)	11.25	11.48	8.11	7	5
Urban self-employed (UH1)	2.86	9.67	12.71	11	45
Urban salaried (UH2)	6.80	57.60	2.61	11	20
Urban casual labour (UH3)	4.22	3.59	1.14	4	31
Urban other households (UH4)	0.35	1.43	4.08	2	5
Private enterprises	0.00	0.00	6.80		
Public enterprises	0.00	0.00	3.48		
Government	0.00	0.00	3.39		
TOTAL	100	100	79.16*	100	

Notes: Calculations based on SAM (2002-03); *Remaining capital income goes to rest of the world; ** Based on Sundaram and Tendulkar (2003)

Table 4.4: Social Accounting Matrix for 2002-03 (billion rupees)

	AGR	MIN	MANU1	MANU2	CONS	ELEC	TRNS	TRD	FINSERV	COMSERV	RLAB	ULAB	CAP	RH1	RH2	RH3	RH4	RH5	UH1	UH2	UH3	UH4	PVTENT	PUBENT	GOVT	SAVINV	ROW	TOT
AGR	828	2	1285	145	97	8	27	277	2	134				438	734	99	1189	453	483	583	101	92			18	-32	227	7189
MIN	2	9	35	1067	162	142	2	11		95				2	3	1	3	3	2	3	1	2			2	304	40	1892
MANU1	54	6	684	173	101	8	32	132	28	172				264	435	63	704	296	324	422	68	71			29	189	665	4921
MANU2	338	68	353	2674	796	104	782	168	28	873				74	91	19	216	116	131	257	23	35			154	1550	1648	10498
CONS	23	9	14	18	21	31	76	17	102	54															89	2890		3344
ELEC	20	22	114	255	50	286	209	51	27	64				21	34	5	49	23	27	32	10	7			46	2		1353
TRNS	100	21	256	358	224	110	163	209	65	178				130	159	29	412	150	224	394	38	62			78	99	345	3806
TRD	151	11	374	490	200	70	177	84	33	232				172	211	38	547	199	296	523	50	82			33	261	526	4764
FINSERV	43	10	198	350	139	54	122	163	130	169				95	148	33	297	225	242	534	44	137			27	2	18	3180
COMSERV	-3	13	101	170	68	37	334	187	159	585				180	287	46	602	358	345	756	67	153			1619	77	456	6594
RLAB	2776	87	347	289	700	40	314	394	2	315																		5264
ULAB	691	63	339	932	452	153	560	805	425	2211																		6631
CAP	2062	454	550	1347	334	312	836	2225	2138	1114																		11374
RH1											977	146	746												138		27	2035
RH2											1682	372	9												119		39	2221
RH3											155	34	91												61		8	350
RH4											1084	524	3342												402		24	5376
RH5											592	761	923												97		77	2450
UH1											150	641	1446												213		275	2726
UH2											358	3820	297												300		196	4971
UH3											222	238	130												26		15	631
UH4											19	95	464												51		194	822
PVTENT													774												80			854
PUBENT													396															396
GOVT													386	28			274	126		158	198	43	590				-25	1777
SAVINV													2262	631	120	16	1082	500	652	1308	31	139	264	396	-1804		-255	5341
ROW	104	1117	270	2230			172	41	40	397	23		108															4370
TOT	7189	1892	4921	10498	3344	1353	3806	4764	3180	6594	5264	6631	11374	2035	2221	350	5376	2450	2726	4971	631	822	854	396	1777	5341	4370	