

A Social Accounting Matrix for India 2007-08

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IEG Working Paper No. 326

2013

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ACKNOWLEDGEMENTS

This paper was presented at a seminar at the Institute of Economic Growth on 7 September, 2012. It forms part of the '11th Five Year Plan and Beyond' programme supported by the Planning Commission and 'Inclusive Growth in India' project of the Norwegian Government through Chr. Michelsen Institute, Bergen, Norway.

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ABSTRACT

The present study attempts to build a SAM for India for 2007–08. This SAM consists of 78 sectors and nine categories of households which are based on occupation and location (i.e. rural and urban). The gross value added has been divided into three factors of production, i.e. labour, capital, and land. Further, labour has been divided into three types, i.e. unskilled, semi-skilled, and skilled. The main data sources used in the construction of this SAM are CSO's I-O table 2007-08, NSSO's 66th round survey on consumer expenditure, and NCAER's Income-Expenditure Survey 2004-05.

Keywords: Social Accounting Matrix, I-O table, India, 2007-08

JEL codes: D57, D59

1 INTRODUCTION

A Social Accounting Matrix (SAM) is a single entry accounting system that represents all transactions and transfers between different sectors of production, factors of production, and institutions of the economy in a single matrix format. The framework of a SAM is a square matrix, where each row represents the receipts and each column stands for the expenditure of the respective account. The SAM framework extends the input-output (I-O) model¹ by including information on income distribution and final demand. An I-O table has information on payment of incomes to factors of production by sectors, but not by institutions. Therefore, there is lack of information on the distribution of income among owners of these factors. A SAM contains information on the distribution of income among factor owners together with their payments from other sources, such as transfer payments from government and remittances from abroad. In addition, a SAM has information on direct taxes while an I-O table has information on indirect taxes only.

The construction and application of SAM attained popularity through the pioneering works of Sir Richard Stone² and his colleagues.³ Moreover, after publication of a book that described in detail the SAM for Sri Lanka by Pyatt and Roe in 1977, the SAM has been used to study many issues such as income distribution, regional development, growth strategies in developing economies, technological and environmental concerns pertaining to economic development, etc (Santos 2005:1).

¹ The I-O table, developed by Wassily Leontief, is a matrix representation of accounting for an economy, which depicts interdependencies between different sectors of the economy. An I-O table shows the flow of goods and services from each sector of an economy over a specific period. Its origin may be traced to Quesnay's *Tableau economique*.

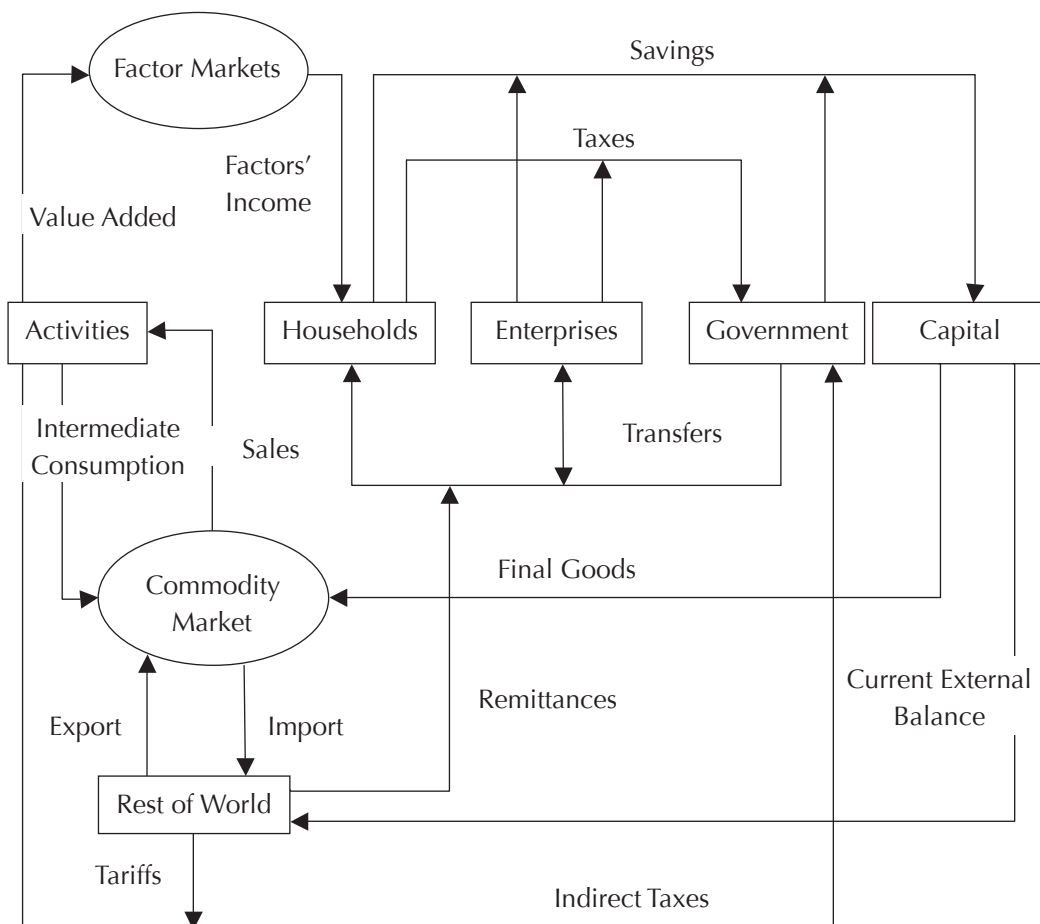
² For his contributions to the development of national and social accounts systems, Stone was awarded the Nobel Prize in Economic Sciences in 1984.

³ See Stone & Croft-Murray 1959; Stone & Brown 1962; Stone & Stone 1977; Stone 1978.

2 FRAMEWORK OF A SAM

A SAM is based on the circular flow of goods, services, and income in an economy (Figure 1).

Figure 1 Circular flow of income in an economy



Notes: The arrow in above diagram shows the direction of payments. Source: Chung-I Li (2002).

The production of goods and services requires intermediate inputs and factors of production, e.g. labour, capital and land. Intermediate goods are made available as inputs from different sectors. Institutions contribute factors of production and receive factor payments as value added. The other sources of income of institutions are transfer payments from the government, interest on public debt, and remittances from the rest of the world. The income is spent on goods and services and on taxes; the remaining is saved. The saving is

channelised through financial institutions and used as investment. The excess demand for savings are met from the rest of the world (ROW). The excess demand of goods, services, and factors of production is harmonised by imports and exports.

Figure 1 clearly indicates that the financial flows in an economy must be balanced for a given period. The SAM framework is ideally a matrix representation of this circular flow of income in an economy. According to Pyatt et al. (1977), the SAM framework serves to satisfy two basic rules: first, for every row there is a corresponding column; and second, every entry is a receipt in a row and an expenditure in a column (Pradhan et al. 2006: 71). Keeping these rules in view, a schematic structure of a SAM has been presented in Table 1.

Table 1 Schematic structure of a SAM

	Production Activities	Factors	Institutions	Capital Account	Rest of the World	Total
Production activities	I-o table		Institutions' consumption	Gross fixed capital formation	Exports	Aggregate demand
Factors	Value added				Net factor income from abroad	Factor income
Institutions	Taxes on intermediary goods		Taxes, transfer payments and interest on public debt	Taxes on investment goods	Net current & capital transfer from abroad, taxes on exports	Institutions' total income
Capital account		Depreciation	Institutions' savings	Foreign savings	Gross savings of the economy	
Rest of the world						Foreign exchange payments
Total	Total cost of production	Total factor endowments	Institutions' total expenditure	Aggregate investment	Foreign exchange receipts	

It has five major accounts: production, factors, institutions, capital, and rest of the world. The institutions are classified into households, private corporations, public enterprises, and government. The indirect tax account is separated from the government account to

simplify the presentation of the detailed structure of taxes (see Pradhan et al. (2006) for a detailed discussion on the schematic structure of a SAM).

The schematic structure portrays that a SAM is an important tool for creating a macroeconomic dataset for an economy from different sources in a consistent framework. It is used to bring together national income, social accounts, and input–output (I–O) accounts within a unified statistical framework (Robinson 1989) and to analyse inter-sectoral linkages and socio-economic aspects (Adelman 1975; Adelman & Robinson 1989; Pyatt & Round 1985; Thorbeck 2002).

Constructing a SAM involves gathering data from multiple sources; therefore, the inconsistency of data is an obvious problem. The other limitation in building a SAM is the unavailability of data on certain aspects, especially for developing countries.

3 SAM FOR INDIA

The construction of a SAM for India was initiated in the early 1980s. As per our knowledge, Sarkar and Subbarao (1981) constructed the first SAM for India. Since then, a number of researchers have constructed a SAM for India (for a comprehensive list of studies on SAMs for India, see Appendix I). Pradhan et al. (1999) prepared the first detailed SAM for India for 1994-95, in which production activities are disaggregated into 60 sectors, and households are grouped into 12 categories by their sources of income and residential status (i.e. rural and urban).

The present endeavour aims to construct a SAM for India for 2007-08 with nine household categories based on occupation.⁴ The gross value added (GVA) has been divided into three factors of production: labour, capital, and land. Further, labour has been divided into three categories based on skill. The main data sources for the construction of this SAM are the I-O table 2007-08, National Accounting Statistics (NAS) 2011, and the 66th round survey on consumer expenditure by National Sample Survey Organisation (NSSO). The income-to-expenditure ratio, taken from NCAER's Income-Expenditure Survey for 2004-05, has been used for the estimation of income of different households.

4 Construction of SAM for India for 2007-08

In the present study, the production account has been disaggregated into 78 sectors. The factors account has been classified into three types: labour, capital, and land. Labour has

⁴ The present work is a part of the construction of SAMs for 2005-06 and 2007-08.

been divided into unskilled, semi-skilled, and skilled categories while non-wage income has been divided into income from capital and land. The institutions are classified into households, private corporations, and government sectors. An attempt has been made to categorise households by occupation (i.e. principal source of income). Households have been decomposed into nine groups (i.e. five for rural and four for urban). The government sector has been further categorised into public enterprises, government and indirect taxes.

4.1 Methodology

4.1.1 Aggregation of Sectors

The Central Statistical Organisation (CSO) has constructed an input-output (I-O) table for the year 2007-08 for 130 sectors. The C X C matrix for 130 sectors has been aggregated into a matrix of 78 sectors (see Appendix II for concordance).

4.1.2 Final Demand

The CSO has provided private final consumption expenditure (PFCE) for 130 sectors for the year 2007-08. The PFCE for 130 sectors has been grouped into 78 sectors. The 66th round survey of NSSO provides consumption expenditure for the year 2009-10 at household level. A concordance table has been prepared for sectors in SAM 2007-08, sectors in I-O table 2007-08, and items in the schedule of NSSO for the 66th round survey (see Appendix II for concordance). The PFCE for each sector and each household category has been estimated by following method:

$$(HCE)_{ij} = \left(\frac{CE_{ij}}{TCE_i} \right) \times (PFCE)_i; i=1, 2, \dots, 78 \text{ and } j = 1, 2, \dots, 9$$

where, HCE, CE, TCE and PFCE represent household consumption expenditure, consumption expenditure, total consumption expenditure and private final consumption expenditure respectively. Subscripts i and j represent sector and household categories, respectively.

No concordance has been found for few sectors in SAM like other oil seeds, trade, banking and insurance, business services, and real estate activities. For calculating HCE for other oil seeds and trade, the ratios used for coconut and hotel and restaurant respectively have been applied. The ratio for ownership of dwelling has been applied for

calculating HCE for business services and real estate activities. However, for calculating HCE for banking and insurance, the ratio from MPCE_MRP⁵ has been applied.

Similar to PFCE, government final consumption expenditure (GFCE), gross fixed capital formation (GFCF), change in stocks (CIS), and exports are available for 130 sectors in the I-O table 2007-08. These have been aggregated into 78 sectors. GFCF and CIS have been added to construct capital account for SAM 2007-08.

4.1.3 Gross Value Added (GVA)

4.1.3.1 Division of GVA into Wage and Non-wage Income

The I-O table 2007-08 provides GVA for 130 sectors. These 130 sectors have been aggregated into 78 sectors for the SAM. For dividing GVA into wage and non-wage income following methods have been applied.

Agriculture, Allied Activities, and Mining

The NAS divides the net value added (NVA) into compensation to employees (CE) and operating surplus/mixed income separately for the organised and unorganised components of agriculture and animal husbandry. From 1980–81 to 1989–90, the NAS divided mixed income into the income of family labour and operating surplus (CSO 1994). By using the proportions of 1989-90, mixed income has been divided into wage and non-wage incomes. Wage income due to family labour has been added to the actual wage income from the organised and unorganised components to get the total income due to labour. The remaining part of the net domestic product is the operating surplus.

The same proportions have been used for the six sectors under agriculture. The NVAs for these sectors have been obtained from the corresponding GVAs by using the depreciation-to-GVA ratio for the entire agriculture sector, as available from the NAS 2011. For forestry, fishing, and all the four sectors of mining, the mixed income in the unorganised part is divided into wage income and operating surplus by using the same ratio as in agriculture. The total value-added in each of these sectors is divided into its components by applying the same method as used for agriculture. For mining, the NVA from the unorganised part is only about 7 per cent.

⁵ This is the measure of monthly per capita expenditure (MPCE) obtained by the Consumer Expenditure Survey (CES) when household consumer expenditure on items of clothing and bedding, footwear, education, institutional medical care, and durable goods is recorded for a reference period of 'last 365 days', and expenditure on all other items is recorded with a reference period of 'last 30 days'.

Manufacturing Industries

Manufacturing industries, which include organised and unorganised industries, have been grouped into 36 sectors. Each sector represents both types of industries. The ratio of wages and non-wages income for the organised manufacturing industries is taken from the Annual Survey of Industries (ASI) 2007–08. Wage income includes wages and other benefits from firms to employees. The ratio of wage and non-wage income for unorganised manufacturing industries has been taken from the NSSO 62nd round survey (year 2005-06).

Construction

The wage and non-wage incomes for the organised construction sector are separately available from the NAS. The whole of mixed income except the interest and rent charges under the unorganised construction sector is assumed as wage income.

Natural Gas, Electricity, and Water Supply

The Net Domestic Product (NDP) from electricity sector is divided between compensation to employees and operating surplus based on their ratios for the organised part of the combined sector (i.e. electricity, gas, and water supply) available from the NAS. The components for the unorganised sector of gas and water supply have been obtained by deducting the wage and non-wage components of the electricity sector from the corresponding components of the combined sector. Besides it, the entire mixed income under the unorganised sector of gas and water supply is assumed as wages because the mixed income is obtained mainly from 'gobar gas' and not much capital is involved.

Transport

The value-added of wage and non-wage for railways has been directly taken from the Railways Year Book 2009. For other transport sectors, value-added has been divided into wage and non-wage incomes based on the wage and non-wage incomes ratio in the SAM for 2003-04 constructed by Saluja and Yadav (2006).

Other Sectors

The value-added for these sectors has been divided into wage and non-wage in the same proportion as it is in the SAM for 2003-04 constructed by Saluja and Yadav (2006).

4.1.3.2 Division of Wage into Wage for Unskilled, Semi-Skilled and Skilled Labourers

Pradhan, Saluja, and Singh (see Ojha and Pradhan 2006) have constructed a 28-sector SAM for India for the year 2002-03. In this SAM, wage has been divided among wages for

unskilled, semi-skilled, and skilled labourers. A concordance table has been prepared for 78 sectors in SAM 2007-08 and 28 sectors in SAM 2002-03 (Table 5, Appendix III). The ratio of wages for unskilled, semi-skilled, and skilled labourers with total wage in the SAM for year 2002-03 has been applied for SAM for 2007-08 according to the concordance between the sectors.

4.1.3.3 Division of non-wage income into return to capital and land

The non-wage income has been divided into return to capital and land for agriculture sector only. The ratio of land to total non-wage income has been taken from Pradhan et al (2006: 173) for food crops⁶, cash crops,⁷ and other crops⁸ separately.

4.1.4 Division of Households based on Occupational Categories

The NSSO provides the expenditure for different occupational classes by commodities. The present study uses consumption expenditure data from the 66th round survey of the NSSO. The households have been classified into different occupational categories, by their principal source of income, for rural as well as urban areas (Table 2). The occupational category-wise distribution of expenditure, obtained from NSSO, is used to distribute the total sector-wise PFCE into occupational categories.

Table 2 Household Categories Based on Occupation

Rural		Urban	
RH1	Non-agricultural Self-Employed	UH1	Self-Employed
RH2	Agricultural Labour	UH2	Salaried Class
RH3	Non-agricultural Labour	UH3	Casual labour
RH4	Agricultural Self-Employed	UH4	Other households
RH5	Other households		

4.1.5 Distribution of Household Income by Source of Income

The distribution of income and expenditure by occupation category is available from the income and expenditure survey conducted by the NCAER for 2004-05. The income

⁶ Food crops are S1-S6, S16

⁷ Cash crops are S7, S8, S10-S12

⁸ Other crops are S9, S13-S15, S17-S19

-expenditure ratio, given by the NCAER, has been applied to calculate the income of the respective categories of households by following method:

$$(\text{Income})_j = \left(\frac{\text{Income}}{\text{Expenditure}} \right)_j \times (\text{HCE})_j; j=1, 2, \dots, 9$$

Where, HCE represents household consumption expenditure and j represents household category. The income of each household category is pro-rata adjusted to equate the total household income with total personal income for the year 2007-08, given in NAS 2011.

The household income for year 2007-08 from ROW and government (i.e. transfer payment and interest on public debt), as obtained from NAS 2011, has been divided in the same proportion as these are in the SAM for 2002-03 (Pradhan et al. 2006) for different household categories based on sources of income. After subtracting both above-mentioned components from the personal income of different household groups, the remaining income has been divided between labour (i.e. households' income as wage) and capital (i.e. households' income as rent and interest) in the same proportion as it has been divided in the SAM for 2002-03. The households' income as wage has been divided into income as wage from unskilled labour, semi-skilled labour and skilled labour in the same proportion as it has been divided in 28 sectors SAM for 2002-03 (see Ojha and Pradhan, 2006). For Agricultural Self-Employed (RH4), the income as rent has been divided into income as rent for capital and rent for land.

To balance the sum total of columns of unskilled labour, semi-skilled labour, skilled labour, capital and land with the respective row totals, the unbalanced amount has been pro-rata adjusted among different households. It has caused a small rise in the total personal income for the year 2007-08 as obtained from NAS 2011.

4.1.6 Taxes (Direct and Indirect)

The indirect taxes reported in the SAM are net of subsidies (indirect taxes). Net indirect taxes on households and government consumption are inclusive of sales taxes and excise duties for domestic production and custom duties on imported commodities used for consumption. These taxes on expenditures are based on the I-O table for 2007-08. Production activities pay similar indirect taxes because of inputs consumed. Net indirect taxes paid by households have been disaggregated among different categories of households in the same proportion as it has been disaggregated in SAM 2002-03 (Pradhan et al., 2006).

Total direct taxes as obtained from the NAS 2011 are distributed among different categories of households in the following manner. Only self-employed agricultural households pay land revenue. Other direct taxes are distributed among different categories of households in proportion to their personal income, assuming that no direct tax is paid by labour households, agricultural and non-agricultural both, and self-employed rural agricultural households.

4.1.7 Capital Account

The capital account corresponds to the overall balancing of savings and investment. Net savings include savings by the households, the private corporate sector, the public non-departmental enterprises, the government, and the ROW. Net saving plus depreciation equal gross domestic capital formation. The savings of different categories of households has been derived by subtracting their consumption and direct taxes from their total personal income. The retained earnings of the private corporate sector and the non-departmental public enterprises have been treated as their savings. For the government, the difference between its revenue and current expenditure has been taken as its saving. Foreign savings meet the difference between gross domestic capital formation and gross domestic saving.

5 CONCLUSION

The SAM for India for 2007-08 consists of many significant features like distribution of wage into wage for unskilled labour, for semi skilled labour and for skilled labour; distribution of non-wage into return to capital and rent for land. It has incorporated latest available data from I-O table 2007-08, NAS 2011, 66th round consumption expenditure survey by NSSO and 2004-05 income expenditure survey from NCAER. An aggregated and a complete SAM for India for 2007-08 have been displayed in Appendix IV and V, respectively.

References

- Adelman, I. and S. Robinson (1989), "Income distribution and development", in H. Chenery and T. N. Srinivasan (Eds), *Handbook of Development Economics*, Vol II, North-Holland, Amsterdam, pp. 949-1003.
- Adelman, I., (1975) "Growth, Income Distribution and Equity Oriented Development Strategies", *Development Strategies*, Vol. 3 (2-3), pp. 67-76.
- Bhide, S. and S. Pohit (1993), "Forecasting and Policy Analysis through a CGE Model for India", *Margin*, NCAER, New Delhi, 25, 271-285.
- Central Statistical Organisation (2008), "Annual Survey of Industry-2007-08", New Delhi: Ministry of Statistics and Programme Implementation, Government of India.
- Central Statistical Organisation (2011), "National Accounts Statistics – 2011", New Delhi: Ministry of Statistics and Programme Implementation, Government of India.
- Chung –Li, Jennifer (2002), " A Social Accounting Matrix (SAM) for Thailand" TMD Discussion Paper No: 95, Washington: Trade and Macro Economic Division, International Food Policy Research Institute.
- De Janvry, A. and K. Subbarao (1986), "Agricultural Price Policy and Income Distribution in India", New Delhi: Oxford University Press.
- Gedik, M.A. (2011), "A Comparative Analysis of Turkish Social Accounting Matrices for 1998 and 2002", *International Research Journal of Finance and Economics*, Vol. 75, pp. 39-54.
- Ojha, V.P., and B.K. Pradhan (2006), "The Macro Economic and Sectoral Impacts of HIV and AIDS in India: A CGE Analysis", (for NACO, UNDP and NCAER), New Delhi: UNDP
- Ojha, V.P., B.D. Pal, S. Pohit, and J. Roy (2009), "Social Accounting Matrix for India", <http://ssrn.com/abstract=1457628>
- Pal, B.D., S. Pohit and J. Roy (2012), "Social Accounting Matrix for India", *Economic Systems Research*, Vol. 24 (1), March, pp. 77-99
- Pieters, J. (2010), "Growth and Inequality in India: Analysis of an Extended Social Accounting Matrix", *World Development*, Vol. 38 (3), pp. 270-281.
- Pradhan, B. K, M.R. Saluja and S. K. Singh (2006), *Social Accounting Matrix for India, Concepts, Construction and Applications*, New Delhi/Thousand Oaks/ London: Sage Publications.

- Pradhan, B. K. and A. Sahoo (1996), "Social Accounting Matrix and Its Multipliers for India", *Margin*, Vol. 28 (2), Jan-May.
- Pradhan, B. K., A. Sahoo and M. R. Saluja (1999), "A Social Accounting Matrix for India 1994-95", *Economic and Political Weekly*, Vol. 34, No. 48 (Nov. 27 - Dec. 3), pp. 3378-3394
- Pradhan, B. K., M. R. Saluja and Y. Parida, "A Social Accounting Matrix for India 2005-06", (mimeo), Institute of Economic Growth, Delhi.
- Pradhan, B.K. and P.K. Roy (2003), "The Well Being of Indian Households: MIMAP –India Survey Report", New Delhi: Tata McGraw-Hill
- Pyatt, G. and A. Roe (with Lindley, R.M., Round, J.I. and others), (1977), "Social Accounting for Development Planning with Special Reference to Sri Lanka," Cambridge: Cambridge University Press.
- Pyatt, G. and A. Roe (with Lindley, R.M., Round, J.I. and others), (1977), "Social Accounting for Development Planning with Special Reference to Sri Lanka," Cambridge: Cambridge University Press.
- Pyatt, G. And E. Thorbecke (1976), "Planning Techniques for a Better Future: A Summary of a Research Project on Planning for Growth, Redistribution and Employment", Geneva: International Labour Office.
- Pyatt, G., and J.I. Round (1985), "Social Accounting Matrices: A Basis for Planning", Washington, D.C: The World Bank
- Robinson, S. (1989), "Multi-sectoral Models", in H.B. Chenery and T.N. Srinivasan (eds), "Handbook of Development Economics", Vol. 11, Amsterdam: North-Holland Publishing, pp. 885-947.
- Round, J. I. (2003), "Constructing SAMs for Development Policy Analysis: Lessons Learned and Challenges Ahead", *Economic Systems Research*, Vol. 15 (2), June, pp. 161-183.
- Saluja, M.R. and B. Yadav (2006), "Social Accounting Matrix for India 2003-04", http://planningcommission.nic.in/reports/sereport/ser/sr_sam.pdf
- Santos, S.M (2005), "Social Accounting Matrix and System of National Accounts: An Application", <http://pascal.iseg.utl.pt/~depeco/wp/wp142005.pdf>
- Sarkar, H. and M. Panda (1986), "Quantity-Price Money Interaction in a CGE Model", *Margin*, NCAER, New Delhi, 18, 31–47.
- Sarkar, H. and Subbarao (1981), "A Short Term Macroforecasting Model for India: Structure and Uses", *Indian Economic Review*, 16.

- Sinha, A., K.A. Siddiqui and P. Munjal (2007), "A SAM Framework for the Indian Informal Economy", in B. Harriss-White & A. Sinha (Eds), *Trade liberalization and India's informal economy* (pp. 233–306), New Delhi: Oxford University Press.
- Stone, J.R.N. (1978), "The Disaggregation of the Household Sector in the National Accounts", Paper presented at World Bank Conference on Social Accounting Methods in Development Planning, Cambridge, UK, 16-21, April.
- Stone, J.R.N. and A. Brown (1962), "A Computable Model of Economic Growth", Cambridge, M.A.: MIT Press.
- Stone, J.R.N. and G. Croft-Murray (1959), "Social Accounting and Economic Models", London: Bowes and Bowes.
- Stone, R. and G. Stone (1977), "National Income and Expenditure", Tenth Edition, London: Bowes and Bowes
- Thorbecke, E. (2002), "The Use of Social Accounting Matrices in Modelling" 26th General Conference on International Association for Research in Income and Wealth, Cracow, Poland.

Appendix I

Table 3 Studies on SAMs for India

S. No.	Study	Salient Features of SAM
1	Sarkar and Subbarao (1981)	Base year: 1979-80. Sectors (3 in all): agriculture, industry and services. Agents: non-agricultural wage income class, non-agricultural non-wage income class, agricultural income class and government.
2	Sarkar and Panda (1986)	Base year: 1983-84. Sectors (6 in all): agriculture (2), industry (2), infrastructure and services. Agents: non-agricultural wage income class, non-agricultural non-wage income class, agricultural income class, and government.
3	Bhide and Pohit (1993)	Base year: 1985-86. Sectors (6 in all): agriculture (2), livestock & forestry, industry (2), infrastructure and services. Agents: government, non-agricultural wage income earners, non-agricultural profit income earners and agricultural income earners.
4	Pradhan and Sahoo (1996)	Base year: 1989-90. Sectors (8 in all): agriculture (2), mining and quarrying, industry (2), construction, electricity combined with water and gas distribution, and services (3). Agents: government, agricultural self-employed, agricultural labour, and non-agricultural self-employed and other labour.
5	Pradhan et al. (1999)	Base year: 1994-95. Sectors (60 in all): agriculture (4), livestock products (2), forestry sector, mining (4), manufacturing (27), machinery and equipment (6), construction, electricity, transport (2), gas and water supply, other services (11).

		Agents: government, self employed in agriculture (rural & urban), self employment in non-agriculture (rural & urban), agricultural wage earners (rural & urban), other households (rural & urban), private corporate, and public non-departmental enterprises.
6	Pradhan et al. (2006)	<p>1. Base year: 1997-98. Sectors (57 in all): agriculture (4), livestock products (2), forestry, mining, manufacturing (27), machinery and equipment (6), construction, electricity, transport (2), gas and water supply, other services (11). Agents: government, self employed in agriculture (rural & urban), self employment in non-agriculture (rural & urban), agricultural wage earners (rural & urban), other households (rural & urban), private corporate, and public non-departmental enterprises.</p> <p>2. Base year: 2002-03 Sectors (45 in all): agriculture (4), livestock products (2), forestry, mining (4), manufacturing (15), machinery and equipment (3), construction, electricity, transport (2), gas and water supply, other services (11). Agents: Same as above.</p>
7	Sinha et al. (2007)	<p>Base year: 1999-2000. Sectors (13 in all): agriculture (informal), formal manufacturing (9), construction (informal), other services (formal & informal), and government service. Agents: casual labour (rural & urban), regular wage earner (rural & urban), own account worker (rural & urban), employer (rural & urban), and government.</p>
8	Saluja and Yadav (2006)	<p>Base year: 2003-04. Sectors (73 in all): agriculture (12), livestock products (4), forestry, mining (4), manufacturing (28), machinery and equipment (7), construction, energy, gas distribution, water supply, transport (2), other services (10). Agents: 5 rural households' expenditure classes, 5 urban households expenditure classes, private corporation, public enterprises and government.</p>

9	Ojha et al (2009)	<p>Base year: 2003-04.</p> <p>Sectors (36 in All): agriculture (4), livestock products (2), forestry and mining (5), manufacturing (11), machinery (1), energy (4), transport (5), construction and water supply (2), other services (2)</p> <p>Agents: 5 rural households' occupation classes, 4 urban households occupation classes, private corporation, public enterprises and government.</p>
10	Pieters (2010)	<p>Indian SAM for the years 2002–03 by Pradhan et al. (2006)</p>
11	Pal et al. (2012)	<p>Base year: 2003-04.</p> <p>Sectors (85 in All): agriculture (18), livestock products (2), forestry, mining (10), manufacturing (32), energy (4), transport (5), construction and water supply (2), other services (12)</p> <p>Agents: 5 rural households' occupation classes, 4 urban households occupation classes, private corporation, public enterprises and government.</p>
12	Pradhan et al. (mimeo)	<p>1. SAM 2005-06 with household categories based on occupation</p> <p>Base year: 2005-06.</p> <p>Sectors (43 in All): agriculture (4), livestock products (2), forestry, mining (5), manufacturing (17), energy (3), transport (5), construction and water supply (2), other services (5)</p> <p>Agents: 5 rural households' occupation classes, 4 urban households occupation classes, private corporation, public enterprises and government.</p> <p>2. SAM 2005-06 with household categories based on expenditure classes</p> <p>Base year: 2005-06.</p> <p>Sectors are same as above.</p> <p>Agents: 5 rural households' expenditure classes, 5 urban households expenditure classes, private corporation, public enterprises and government.</p>

Note: This table is an extension of table 1 from Pal et al. (2012).

Appendix II

Table 4 Concordance between Sectors of SAM 2007-08, I-O Table 2007-08 and NSSO 2009-10

Sectors	SAM 2007-08	I-O Tables 2007-08	NSSO 2009-10
S1	Paddy	1	101-106
S2	Wheat	2	107-114
S3	Jowar	3	115
S4	Bajara	4	116
S5	Maize	5	117
S6	Gram and Pulses	6, 7	140-152
S7	Sugarcane	8	172
S8	Groundnut	9	271
S9	Coconut	10	254, 255, 270
S10	Other Oil Seeds	11	
S11	Jute	12	
S12	Cotton	13	
S13	Tea	14	
S14	Coffee	15	293
S15	Rubber	16	
S16	Tobacco	17	322
S17	Fruits	18	250-253, 256-268, 272-277
S18	Vegetables	19	210-242
S19	Other Crops	20	118-122, 139, 280-288, 310-312 330, 471
S20	Animal Husbandry and Livestock	21,22,23,24	160, 163-165, 174, 200, 202-206 343, 352
S21	Forestry and Logging	25	341, 350
S22	Fishing	26	201
S23	Coal and Lignite	27	340, 347
S24	Natural Gas	28	511
S25	Crude Petroleum	29	
S26	Iron Ore	30	

S27	Manganese	31	
S28	Bauxite	32	
S29	Copper	33	
S30	Other Metallic Minerals	34	
S31	Non-Metallic Minerals	35,36,37	
S32	Sugar and Khandsari	38, 39	170, 171, 173
S33	Vanaspati and Edible Oil	40, 41	190-194
S34	Tea and Coffee Processing	42	290-292
S35	Processed Foods	43	161, 162, 166, 167, 189, 298-308
S36	Beverages	44	294- 297,331-335
S37	Tobacco Products	45	320, 321, 323-327
S38	Textile	46,47,48,49,50,51	372, 386, 443, 466, 554, 555
S39	Textile Products	52,53, 54	360-371, 373, 374, 380-385, 387
S40	Furniture and Fixture Wooden	55	550-552, 557
S41	Wood and Wooden Prod- ucts except Furniture	56	556
S42	Paper, paper products and newsprint	57	400-402
S43	Printing, publishing and allied activities	58	400-402
S44	Leather and Leather Prod- ucts	59,60	390-392, 395
S45	Rubber Products	61	393, 394, 603
S46	Plastic Products	62	465
S47	Petroleum Products	63	344, 345, 348, 353, 354, 508, 510
S48	Coal Tar Products	64	
S49	Chemicals	65, 66, 68, 69, 70, 71, 72, 73	346, 351, 410, 420, 450-453, 455- 457, 467, 468, 470, 472
S50	Fertilizers	67	
S51	Cement	75	
S52	Non Metallic Mineral Products	74, 76	463, 464
S53	Metals	77,78,79, 80	

S54	Metal Products	81,82	442, 454, 570-573, 586, 591
S55	Non Electrical Machinery	83, 84, 85, 86, 87	583-585, 588
S56	Electrical Machinery	88, 89, 90, 91, 92, 93, 94	460-462, 560-563, 580-582, 587, 590, 622, 623
S57	Transport Equipments	95, 96, 97, 98, 99, 100	600-602, 604
S58	Other Manufacturing	101-105	404, 432, 434, 440, 441, 444, 445, 473, 553, 564-566, 610, 611, 620, 621, 624, 625, 640-643
S59	Construction	106	630- 633
S60	Electricity	107	342
S61	Water Supply	108	540
S62	Railways	109	501
S63	Land Transport Including via Pipelines	110	502, 503, 505, 506, 512
S64	Water Transport	111	504
S65	Air Transport	112	500
S66	Supporting and Auxiliary Transport Services	113	507, 513
S67	Storage and Warehousing	114	
S68	Communication	115	487, 488, 490
S69	Trade	116	
S70	Hotel and Restaurants	117	521
S71	Banking and Insurance	118,119	
S72	Ownership of Dwellings	120	520, 522, 523, 539
S73	Education and Research	121	403, 405- 408
S74	Medical and Health Ser- vices	122	411-414, 421-424
S75	Business Services	123	
S76	Real Estate Activities	126	
S77	Other Services	124, 125, 127-129	430, 431, 433-438, 480-486, 491- 496
S78	Public Administration	130	

Appendix III

Table 5 Concordance between Sectors of SAM 2002-03 (see Ojha and Pradhan 2006) and SAM 2007-08

Sectors in SAM 2002-03	Sectors in SAM 2007-08
Agriculture	s1-s22
Mining and Quarrying	s23-s31
Food and Beverages	S32-S37
Textiles	S38-s39
Wood & Wood Products	S40-S41
Paper & Printings	S42-S43
Leather & Leather Products	S44-S46
Petroleum Products	S47-S48
Chemicals	S49-S50
Non-metallic Products	S51-S52
Basic Metals	S53
Metal Products	S54
Capital Goods	S55-S57
Other Manufacturing	S58
Construction	S59
Electricity	S60
Gas and Water Supply	S61
Rail Transport	S62
Other Transport	S63-S66
Storage	S67
Communications	S68
Trade	S69
Hotels and Restaurants + Tourism	S70
Finance and Real State	S71, S72, S75, S76
Education & Research	S73
Health	S74
Public Admin. & Other Services	S78

Appendix IV

Table 6 Aggregated Social Accounting Matrix for India for 2007-08 (Values in Billion Rs)

Sector	Agriculture	Manufacturing	Services	Unskilled Labourer	Semi-skilled Labourer	Skilled Labourer	Capital	Land	Rural	Urban	Pvt. Corp.	Pub. Enter.	Govt.	Ind. Taxes	Capital a/c	ROW	Total
Agriculture	2388	2397	1048	0	0	0	0	0	4388	2077	0	0	100	0	-6	280	12672
Manufacturing	724	17165	7783	0	0	0	0	0	3988	3145	0	0	538	0	8636	4634	46614
Services	1218	7307	9303	0	0	0	0	0	5099	8621	0	0	4378	0	9654	4668	50249
Unskilled Labourer	3373	844	4786	0	0	0	0	0	0	0	0	0	0	0	0	-10	8993
Semi-skilled Labourer	1002	733	4602	0	0	0	0	0	0	0	0	0	0	0	0	-7	6330
Skilled Labourer	345	660	6229	0	0	0	0	0	0	0	0	0	0	0	0	-8	7226
Capital	3229	6192	13299	0	0	0	0	0	0	0	0	0	0	0	0	-180	22541
Land	520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	520
Rural	0	0	0	3984	2804	3201	7513	520	0	0	0	0	2189	0	0	378	20588
Urban	0	0	0	5009	3526	4025	5125	0	0	0	0	0	1502	0	0	1297	20484
Pvt. Corp.	0	0	0	0	0	0	2928	0	0	0	0	0	1921	0	0	0	4850
Pub. Enter.	0	0	0	0	0	0	1142	0	0	0	0	0	0	0	0	0	1142
Govt.	0	0	0	0	0	0	987	0	820	982	1921	0	0	4050	0	0	8761
Ind. Taxes	-326	1176	1113	0	0	0	0	0	247	263	0	0	114	0	735	728	4050
Capital a/c	0	0	0	0	0	0	4846	0	6045	5396	2928	1142	-1982	0	0	644	19019
ROW	198	10140	2087	0	0	0	0	0	0	0	0	0	0	0	0	0	12425
Column Total	12672	46614	50249	8993	6330	7226	22541	520	20588	20484	4850	1142	8761	4050	19019	12425	

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14
s1	6155546	47408	84	4	162	164691	0	2547	0	1319	0	0	0	0
s2	213804	1924525	38	6	253	124224	0	32	0	438	0	0	0	0
s3	86	515	23915	0	17	193	0	0	0	0	0	0	0	0
s4	94	559	1	9022	18	210	0	0	0	0	0	0	0	0
s5	202	1202	3	1	27306	461	0	3	0	49	0	0	0	0
s6	62502	160209	31	3	125	1625443	0	33	0	650	0	2	0	0
s7	1011	11236	10	4	159	1936	239214	83	0	1413	0	12	0	0
s8	27	160	0	0	5	608	0	219544	60	16831	0	146	0	0
s9	6	36	0	1	1	49	0	66	5693	1105	0	10	0	0
s10	258	1540	3	1	50	2774	0	3987	131	396231	0	584	0	0
s11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s12	0	0	0	0	0	15	0	27	1	463	0	27452	0	0
s13	22	131	0	0	4	49	0	0	0	0	0	0	0	0
s14	17	103	0	0	3	39	0	0	0	0	0	0	0	0
s15	11	63	0	0	2	24	0	0	0	0	0	0	0	0
s16	0	0	0	0	0	0	0	0	0	1	0	0	0	0
s17	5794	34534	68	26	1124	12962	0	3	0	44	0	0	0	0
s18	101	602	1	0	20	228	0	3	0	51	0	0	0	0
s19	16805	44324	2939	1	69	94462	0	1321	5	36954	0	42	0	0
s20	978088	181406	237881	80885	221588	406641	107148	183170	94714	392389	35346	470227	48678	61736
s21	7	40	0	0	1	15	0	0	0	0	0	0	0	0
s22	1414	8430	17	6	274	3164	0	0	0	5	0	0	0	0
s23	18	106	0	0	3	46	0	12	0	211	0	2	0	0
s24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s27	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s28	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s31	3	18	0	0	1	7	0	0	0	0	0	0	0	0
s32	907	5409	11	4	176	2032	0	3	0	47	0	0	0	0
s33	779	4641	9	3	151	3566	0	3307	30	55942	0	485	0	0
s34	10	58	0	0	2	22	0	0	0	0	0	0	0	0
s35	40885	14167	28	11	459	5809	0	604	1	10167	0	88	0	0
s36	9	53	0	0	2	20	0	0	0	2	0	0	0	0
s37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s38	85726	41988	10	0	4	10456	0	18	0	239	0	1	0	0
s39	916	1048	60	60	119	273	204	75	0	409	0	234	0	0
s40	923	784	63	64	116	162	218	74	0	322	0	250	0	0
s41	134	801	2	1	26	431	0	237	1	4004	0	35	0	0
s42	1382	3650	68	65	206	1334	212	238	2	3129	0	267	0	0
s43	1569	1317	108	110	198	272	371	125	0	547	0	425	0	0
s44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s45	47	39	3	4	6	7	11	4	0	17	0	13	0	0
s46	166	992	2	1	32	402	0	54	1	917	0	8	0	0
s47	281805	116805	17545	25543	26700	94635	21284	23459	5951	41248	2406	33477	1908	1110

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28
s1	0	0	0	6091	689177	242409	0	0	0	0	0	0	0	0
s2	0	0	0	53604	411159	78594	0	0	0	0	0	0	0	0
s3	0	0	0	0	11248	109813	0	0	0	0	0	0	0	0
s4	0	0	0	0	2060	133853	0	0	0	0	0	0	0	0
s5	0	0	0	1	5131	140454	0	0	0	0	0	0	0	0
s6	0	0	0	1056	132453	333069	0	0	0	0	0	0	0	0
s7	0	0	0	20	14453	55808	0	0	0	5	0	0	0	0
s8	0	0	0	0	16345	0	0	0	0	0	0	0	0	28
s9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s11	0	0	0	0	1	0	0	0	0	0	0	0	0	0
s12	0	0	0	0	696	0	0	0	0	0	0	0	0	0
s13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s17	0	0	126140	0	0	0	0	0	0	0	0	0	0	0
s18	0	0	0	110695	0	6062	0	0	0	0	0	0	0	0
s19	0	0	0	14596	143065	4686290	2332	0	0	0	0	0	0	19
s20	35080	3819	91404	124587	607137	21556	0	0	0	0	0	0	0	0
s21	0	0	0	0	0	6905	91889	0	0	0	0	0	0	3
s22	0	0	0	0	0	0	0	120216	0	0	0	0	0	0
s23	0	0	0	0	0	0	0	0	105121	1	0	1799	0	129
s24	0	0	0	0	0	0	0	0	0	1242	0	0	0	31
s25	0	0	0	0	0	0	0	0	0	0	13023	0	0	0
s26	0	0	0	0	0	0	0	0	0	0	0	0	0	11
s27	0	0	0	0	0	0	0	0	0	0	0	0	0	1
s28	0	0	0	0	0	0	0	0	0	0	0	0	0	35
s29	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s30	0	0	0	0	0	0	0	0	0	0	0	0	0	11
s31	0	0	0	0	0	0	0	0	0	0	0	0	0	320
s32	0	0	0	0	0	0	0	0	0	0	0	0	0	4
s33	0	0	0	0	0	513038	0	0	0	0	0	0	0	0
s34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s35	0	0	0	7	2911	186980	0	23295	0	2	0	0	0	390
s36	0	0	0	0	0	0	0	0	0	0	0	0	0	1
s37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
s38	0	0	0	223	41120	166388	620	46306	0	0	0	0	0	6
s39	0	26	133	142	422	0	54780	121703	3600	1679	8202	3066	359	43
s40	0	28	142	152	451	0	2853	0	2912	1358	6634	2480	290	27
s41	0	0	0	0	0	0	0	2605	17972	1625	0	0	578	27
s42	0	32	137	148	438	0	36777	0	3768	338	1650	535	61	45
s43	0	52	242	258	769	0	7534	0	1695	241	1177	418	49	4
s44	0	0	0	0	0	0	0	0	0	0	0	0	0	5
s45	0	0	7	8	23	0	31473	0	15589	3567	17425	10825	170	32
s46	0	0	0	0	0	0	4495	0	0	0	0	0	0	38
s47	1779	2016	40540	58668	201216	0	139594	62362	117653	14625	101256	54964	876	1495

Contd...

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	s29	s30	s31	s32	s33	s34	s35	s36	s37	s38	s39	s40	s41
s1	0	0	0	995	83814	369	484930	7552	0	13	0	1	6
s2	0	0	0	4891	17427	580	702768	1746	0	35	140	0	2
s3	0	0	0	105	380	38	43262	13210	0	1	0	0	0
s4	0	0	0	120	413	42	47109	18329	0	1	0	0	0
s5	0	0	0	196	2708	89	99961	2384	0	23	15	0	0
s6	0	0	0	893	7414	286	360408	1205	3	12	3	0	1
s7	0	2	0	2529548	15889	364	427028	95428	45529	264	190	0	1
s8	0	0	0	26	1069807	12	26067	34	0	9	0	0	0
s9	0	0	0	6	198080	3	4280	11	7	3692	1477	1	1
s10	0	0	0	248	2621362	115	174005	522	0	111	67	0	1
s11	0	0	0	0	0	0	12	0	0	168777	24395	47	3
s12	0	0	0	0	16290	0	319	13	0	2741410	405648	3	1
s13	0	0	0	21	97	304534	32458	27	0	2	159	0	0
s14	0	0	0	17	76	190447	22073	18	0	0	99	0	0
s15	0	0	1	10	47	5	5290	13	0	7248	11860	197	639
s16	0	0	0	0	5	0	2823	0	125619	0	0	0	0
s17	0	0	0	9756	25889	0	2886620	280702	0	170	63	2	14
s18	0	0	0	299	2590	45	50453	2927	0	98	466	3	9
s19	0	4	6	1095	126335	109	135083	14617	4006	2788	14337	1416	2984
s20	0	1	2	3245	27180	1349	1535896	10220	2	61650	50160	12243	1046
s21	0	1	2	8	34	3	5301	1105	73823	3085	9751	763615	955996
s22	0	0	0	1358	6266	629	702884	1588	39	19	0	0	37
s23	0	25	69	770	6229	1310	9445	3179	1891	44054	12445	9027	14719
s24	0	7	24	15	9	0	7992	168	0	13470	63240	4	12
s25	0	0	0	0	0	0	0	0	0	170	0	0	0
s26	0	17	26	0	0	0	19	0	0	7	0	9	17
s27	0	8	13	0	0	0	2	1	0	3	1	0	0
s28	0	2	2	0	0	0	3	1	0	1	0	0	0
s29	0	0	0	0	0	0	0	0	0	0	0	0	0
s30	0	1	1	0	0	0	311	5	0	2	2	1	2
s31	0	94	153	7	14	1	2155	277	0	3806	1101	3745	440
s32	0	0	0	22199	5000	2135	461583	366863	471	213	152	0	50
s33	0	0	0	1084	951456	346	420842	2865	0	310	107	9	134
s34	0	0	0	11	43	16706	6046	790	291	0	9	0	0
s35	0	13	20	3252	117309	23111	1206367	551419	71985	50277	10556	866	2462
s36	0	0	1	495	58	5	7434	114193	0	996	84	7	117
s37	0	0	0	0	0	0	5700	2	253607	1	1	0	0
s38	0	9	15	611	3865	557	13798	5981	2913	2844340	3257755	22039	8161
s39	112	36	149	1157	4210	1524	28262	15875	4134	804873	990314	46656	1702
s40	91	23	90	4	23	1	1861	698	0	25595	10109	96068	14625
s41	0	287	1004	4377	45803	4444	71472	2305	25353	38727	41630	103319	34320
s42	18	21	323	10057	50368	7969	253834	55382	53910	123536	91773	29069	52496
s43	30	5	214	3	31	0	334	297	465	228	2092	218	1662
s44	0	0	1	0	0	0	320	133	0	30456	193968	6973	3133
s45	456	1666	4908	0	1	0	157	142	0	5438	24623	33794	1623
s46	0	12	142	5559	21678	5392	87580	58941	2966	187965	145949	66839	30702
s47	831	4768	31903	71042	34378	11733	140384	27648	8696	273456	126283	22190	14081

Contd...

s48	0	21	32	0	0	222	103	0	103	0	235	1	35
s49	1033	6634	75188	5430	105142	185138	131421	39966	1570570	823546	159806	83896	
s50	0	0	0	1178	14455	30082	771	0	170	194	3557	6900	
s51	0	59	96	0	0	274	1	0	24	0	0	0	
s52	0	158	256	254	293	33324	1879	258	2774	3145	3970	1261	
s53	0	61	112	0	2	1945	308	0	3262	11643	152586	9255	
s54	260	3186	1520	26	509	12738	1021	3464	13216	39691	47720	13122	
s55	289	7371	36708	16932	9238	45292	11837	6078	129656	321314	26024	11228	
s56	33	12	37	4043	22	92	9	0	7784	29693	8018	8741	
s57	26	802	1493	2253	50	134	1	0	300	4654	3896	5039	
s58	2	168	68	2100	42	4286	337	365	24760	76555	1566	7068	
s59	159	4853	23749	20512	10002	216805	8657	4244	156183	378462	15477	3444	
s60	928	10248	26177	43544	87016	353756	78182	9152	661680	190656	20899	19033	
s61	12	62	36	9	46	1727	1619	0	2849	602	0	19	
s62	67	354	14427	2023	12752	50746	6060	16312	27784	32715	10230	12056	
s63	652	2761	30909	39390	166861	681456	108239	75949	1621291	762978	160457	135713	
s64	11	60	321	823	23937	34386	12222	2307	5016	2143	6973	8617	
s65	1	79	227	1105	8111	7517	2992	5967	20397	13055	24128	9883	
s66	109	530	1079	3370	17197	49306	11886	4419	173019	78746	14165	13071	
s67	18	232	1	0	0	0	0	0	0	0	0	0	
s68	338	476	2775	15937	9748	77861	6580	7756	47389	105206	14957	7220	
s69	399	3323	13075	1125068	1051374	2675417	323198	210491	1971883	1771698	371855	281402	
s70	69	110	15962	3	34	72	1	0	3365	485	0	0	
s71	812	3435	34340	142015	233655	517983	113119	54647	505316	457758	178238	66833	
s72	0	0	0	0	0	0	0	0	0	0	0	0	
s73	206	87	67	1	7	14	0	0	0	0	0	0	
s74	0	0	0	0	0	0	0	0	0	0	0	0	
s75	342	6882	109	3231	5632	122436	8738	7207	155838	158886	9421	3718	
s76	0	0	0	0	2	4	0	0	0	0	0	0	
s77	3948	11958	46363	23260	29280	63868	9098	52150	687294	663415	22168	11453	
s78	0	0	0	0	0	0	0	0	0	0	0	0	
Unskilled Labourer	3941	33381	209810	119373	188866	432880	63361	97913	931370	1060305	350319	256202	
Semi-skilled Labourer	3729	31581	198496	56770	89819	205863	30132	46564	628226	715194	137245	100373	
Skilled Labourer	4229	35821	225149	35435	56064	128498	18808	29065	230958	262930	37871	27697	
Capital	25904	219386	1378925	421262	666498	1527608	638206	986231	2831481	2187636	1001523	732454	
Land													
RH1													
RH2													
RH3													
RH4													
RH5													
UH1													
UH2													
UH3													
UH4													
Pvt. Corp.													
Pub. Enter.													
Govt.													
Ind. Taxes	1040	4893	30345	-380024	-52183	-161029	54972	143318	-208999	195533	106270	36007	
Capital a/c													
ROW	617700	163222	4001300	760	1042599	143481	39830	4256	844535	419621	30557	97798	
Column Total	667796	559210	6408220	4379562	9239650	1311846	3342406	2483794	20486654	16259889	4138255	3110736	

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	s42	s43	s44	s45	s46	s47	s48	s49	s50	s51	s52	s53	s54
s1	385	30	0	0	13	0	0	6305	11	0	0	0	88
s2	46	245	0	2	11	0	0	11363	24	0	1	0	138
s3	0	0	0	0	3	5	0	1467	1	0	0	1	9
s4	0	0	0	35	0	0	0	2362	1883	0	0	0	10
s5	1	0	0	1	102	4	0	5961	2	0	14	0	22
s6	1	0	1	102	144	171	0	11087	5053	0	6	23	71
s7	6	0	0	15	384	28	0	90754	703	0	208	0	86
s8	0	0	0	0	0	0	11	2914	2	0	0	0	3
s9	0	0	22	19	15	5	82	5677	47	58	6583	210	98
s10	2	0	1	124	232	124	0	35566	6127	0	76	15	30
s11	187	16	2	72	192	11	1	258	0	1	211	3	2
s12	2	0	109	122	9400	1	0	9057	19	0	8	6	30
s13	0	0	0	3	0	0	0	1176	0	0	0	0	3
s14	0	0	0	0	0	0	0	432	0	0	0	0	2
s15	2131	138	66622	386567	159978	84	4	31996	2	2	825	671	1923
s16	0	0	0	0	89	0	0	526	0	0	0	0	0
s17	33	1	7	42	2013	1325	17	62650	407	1	13	4	627
s18	32	2	17	73	2380	433	4	5472	37	1	130	29	34
s19	22268	1780	94	519	3934	4441	307	121892	1825	68	11172	680	365
s20	215	71	641650	92055	59507	3953	26	132686	52735	10	2382	1408	1581
s21	545338	43499	108	4135	54297	369	620	70707	137	11	2042	2989	4222
s22	0	0	0	6	287	56	13	28266	97	0	24	11	157
s23	89585	7081	89	6823	9337	6302	168656	134084	25247	470739	141372	3631775	500345
s24	113	19	36	6929	17342	1098598	35675	315127	256822	193453	38040	791336	63704
s25	1	0	0	0	0	0	364326	649849	347026	0	456	135	15014
s26	0	0	0	645	1814	50	1199	2434	0	11017	36282	0	63215
s27	0	0	2	89	346	2	94	1068	1134	63	14978	166645	11287
s28	0	0	0	23	54	4	14	748	21	865	10448	17006	6151
s29	0	0	0	431	1047	23	0	1229	0	0	12884	426002	152527
s30	0	0	3	160	467	323	12	7632	358	29	7515	143375	42409
s31	2619	374	113	5446	2760	701	1577	88661	62382	328188	246473	55536	28437
s32	11	1	4	42	1078	811	92	111934	178	9	1234	14630	1577
s33	32	12	36	120	2838	371	46	87802	585	1	372	81	192
s34	0	0	0	1	1	0	0	185	0	42	3	1	2
s35	35710	8243	9255	6011	44859	15136	1638	587668	10820	3558	112634	50009	28081
s36	342	31	23	182	4116	3184	71	64103	720	5	1076	2065	454
s37	0	0	0	1	182	0	1	1300	42	1	120	1	1
s38	14702	10473	54684	57941	35692	1819	551	133207	1570	3332	17212	5416	9830
s39	37128	22999	30931	114156	78019	3403	761	106859	2650	15451	19699	11992	17499
s40	182	782	166	344	2307	765	16	25253	7	10	2508	4222	6606
s41	68107	45521	3860	5951	15122	5089	678	171143	5848	15874	19403	15426	14048
s42	1043337	881427	6668	9251	96102	13007	1214	198998	379	30254	32570	18082	27958
s43	112535	254545	62	182	12801	183	1	19637	18	0	169	547	1450
s44	623	2321	928007	98142	65291	368	17	29573	131	11	1974	3169	4143
s45	3297	1388	7834	103595	47220	1274	48	43941	131	142	3712	11757	16596
s46	54966	43393	20876	48147	1482232	14866	1098	610679	9765	506918	72562	60964	130605
s47	96190	29485	19625	54115	89229	2099595	61485	889973	454894	391223	720046	961102	176370

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s48	2	1	12	382	1065	7396	32446	26072	150	4711	39705	447777	44239
s49	379982	239750	91622	1003373	2429223	299918	133708	10614368	853960	7295	471775	463658	236648
s50	26	3	133	38069	854	487474	5861	532126	1477853	0	1121	97	610
s51	0	0	1	315	696	3149	712	12252	38	102649	202520	6394	2959
s52	6472	4578	502	2481	4775	890	1968	35761	546	223091	560276	45950	16653
s53	12739	6390	8373	128827	133659	3795	6783	147711	573	955	270462	12787194	4353657
s54	13963	19308	10963	59612	36810	903	279	29812	110	242	60458	865187	710956
s55	22402	11899	21843	44301	48301	20665	4381	183875	40512	3914	51705	292836	584316
s56	8388	37376	9555	58673	38736	320	37	79345	4093	141	23149	157282	335883
s57	46	70	3928	111844	11731	0	51	2011	1	33	9071	67487	116848
s58	7984	26984	17239	15342	33816	5072	208	114375	6045	826	114375	52462	68303
s59	37004	105457	12162	19694	25904	31826	5708	216694	8899	18420	532396	59540	89598
s60	133055	49619	31246	87463	155992	287650	18457	841712	83337	247557	259797	1082346	203746
s61	25	2	36	338	201	123	14	7687	757	4	733	202	244
s62	20820	8234	7457	11405	22778	248525	33151	142566	37405	124356	78669	758126	132911
s63	294568	221457	171003	183558	314049	278237	34189	1253968	277329	265367	535392	1252906	399822
s64	7514	1045	1028	1298	3062	22284	2833	29324	8495	16763	16045	56927	9318
s65	4532	8004	7342	10882	21914	121494	4093	113854	12664	23783	38736	199483	62056
s66	27840	19823	13622	17785	29940	25650	3716	103329	25711	22059	33493	113160	35173
s67	0	0	0	0	0	0	0	0	0	0	0	0	0
s68	18412	5998	8801	16748	12552	51355	3275	105467	8080	25445	23949	130296	45780
s69	372535	178348	473527	350409	522038	525048	117090	2124584	276346	542286	660874	4824169	879316
s70	0	0	0	0	12	0	0	9	0	0	0	0	0
s71	107029	89510	74072	111191	150152	522665	19056	840630	106487	123594	124970	826292	377368
s72	0	0	0	0	0	0	0	0	0	0	0	0	0
s73	0	0	0	0	0	0	0	0	0	0	0	0	0
s74	0	0	0	0	0	0	0	0	0	0	0	0	0
s75	1520	4799	5003	7497	15383	6441	260	77623	12214	205	26817	112849	92885
s76	0	0	0	0	0	0	0	0	0	0	0	0	0
s77	29181	64234	26422	35221	183852	57084	9704	373827	18078	3425	75351	233796	287903
s78	0	0	0	0	0	0	0	0	0	0	0	0	0
Unskilled Labourer	73279	57351	184920	196035	156510	33537	3282	359921	43916	271274	288909	244457	338794
Semi-skilled Labourer	124546	97474	176867	187498	149694	79383	7769	394750	48166	89951	95799	418719	361616
Skilled Labourer	157692	123416	83948	88994	71050	139651	13667	771421	94125	36431	38799	748602	257409
Capital	767268	600493	560754	1219781	973843	5662349	554136	5804255	475792	1313329	2289791	7469255	2101814
Land													
RH1													
RH2													
RH3													
RH4													
RH5													
UH1													
UH2													
UH3													
UH4													
Pvt. Enter.													
Pub. Enter.													
Govt.													
Ind. Taxes	185018	147646	55010	145103	421825	1700483	64434	1204012	-250437	209874	429334	2485463	708423
Capital a/c													
ROW	863908	279878	195598	312106	482651	4434680	541000	7684031	1843576	21816	448554	13939351	699965
Column Total	5807881	3763028	4043895	5518725	8752309	46476432	2262625	39149032	6764661	5671136	9252299	57551853	14883215

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	s55	s56	s57	s58	s59	s60	s61	s62	s63	s64	s65	s66	s67
s1	9	0	0	984	36	129	0	0	5	16	0	0	0
s2	14	1	0	1555	56	196	0	0	349	28	0	5	0
s3	1	0	0	102	5	13	0	0	0	0	0	0	0
s4	2	0	0	111	6	15	0	0	176	0	0	0	0
s5	3	0	0	267	10	33	0	0	0	0	0	0	0
s6	14	1	1	768	28	103	0	0	23343	0	0	0	0
s7	9	1	0	1459	787	7890	0	0	0	0	0	0	0
s8	0	0	0	779	240	1258	0	0	0	0	0	0	0
s9	12	20	17	222	72	221	0	0	0	0	0	0	0
s10	10	1	1	2092	549	3321	0	0	0	0	0	0	0
s11	6	5	14	22	2	8	0	0	0	0	0	0	0
s12	27	906	0	329	4	41	0	0	0	0	0	0	0
s13	0	0	0	29	11	22	0	0	0	0	0	0	0
s14	0	0	0	20	7	14	0	0	0	0	0	0	0
s15	5093	2890	9313	6660	485	20	0	0	0	0	0	0	0
s16	0	0	0	1	0	0	0	0	0	0	6	0	0
s17	91	16	3	7123	285	894	0	0	0	0	0	0	0
s18	56	29	225	160	12	19	0	0	0	0	0	0	0
s19	706	1035	1056	3758	266085	1979	113	0	1161463	2627	1	0	0
s20	16841	5921	2132	13305	35101	579	3	0	0	0	0	0	0
s21	14639	1690	6118	29747	2541310	6328	0	25	0	0	0	0	0
s22	15	23	3	1674	63	347	0	0	0	0	0	0	0
s23	41012	127959	26506	35518	4899	1445276	34	7133	0	6	0	0	0
s24	49923	13728	1630	3393	1379	377755	378	0	0	0	0	0	0
s25	767	0	0	0	0	16140	0	0	0	0	0	0	0
s26	5994	7210	5370	1903	1694	3314	0	0	0	0	0	0	0
s27	1209	2669	1269	774	274	567	0	0	0	0	0	0	0
s28	89	2301	165	616	32	57	0	0	0	0	0	0	0
s29	1350	56436	871	12133	67	1183	0	0	0	0	0	0	0
s30	1074	19922	1106	4480	85	720	0	0	0	0	0	0	0
s31	9269	26366	14744	860713	1543407	1556	0	0	0	0	0	0	0
s32	131	313	89	1607	123	448	0	0	0	0	0	0	0
s33	342	352	390	3243	181	1958	0	0	5527	420	0	0	0
s34	1	1	8	14	1	3	0	0	0	11	0	0	0
s35	9310	4618	17439	8533	755	5480	0	0	2805	616	0	0	216
s36	289	592	199	819	29	364	122	0	0	129	0	0	0
s37	2	3	8	8	0	0	0	0	0	0	0	0	0
s38	17064	40284	23855	48483	266827	4587	10	458	26801	0	0	739	4775
s39	40652	41405	10330	29667	73114	32741	1452	125	904862	8576	15290	131	9273
s40	12011	17150	7338	10180	34261	32649	2398	134	4324	10671	20842	222	297
s41	52097	36810	23164	48934	1282027	1617	34	26	625	0	0	575	4318
s42	42250	77490	24222	81249	145877	30570	2748	2268	217848	2062	3988	72372	6709
s43	1121	1465	52	6375	64113	22357	1916	4186	155260	1742	2147	87900	314
s44	18820	28624	83305	34482	616	625	0	0	7499	0	0	0	0
s45	102334	46948	274902	27336	9109	3204	271	37	1518850	4029	7601	6507	28
s46	179022	245248	134159	245465	24818	1844	239	32	331780	6634	142037	34020	2906
s47	117960	166347	104660	75493	1157745	1278579	3828	114722	12693943	33539	193067	53577	3908

Contd...

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	s68	s69	s70	s71	s72	s73	s74	s75	s76	s77	s78	Unskilled Labourer
s1	0	21649	480769	0	0	3115	8154	16	1	41	0	
s2	0	5731	306946	0	0	3414	3811	24	1	52	0	
s3	0	252	0	0	0	0	0	0	0	43	0	
s4	0	344	391	0	0	0	0	0	0	60	0	
s5	0	411	4	0	0	0	0	0	0	10	0	
s6	0	8422	705454	0	0	1755	11181	76	3	110	0	
s7	0	18962	121459	0	0	0	0	0	0	697	0	
s8	0	10881	0	0	0	0	0	0	0	11	0	
s9	0	2140	273	0	0	0	0	0	0	1	0	
s10	0	27092	0	0	0	0	0	0	0	51	0	
s11	0	298	0	0	0	0	0	0	0	0	0	
s12	0	489	0	0	0	0	0	0	0	0	0	
s13	0	10225	0	0	0	0	0	0	0	18	0	
s14	0	6392	0	0	0	0	0	0	0	11	0	
s15	0	8873	0	0	0	0	0	0	0	47	0	
s16	0	365	0	0	0	0	0	0	0	4	0	
s17	0	10631	109649	0	0	0	0	0	0	966	0	
s18	0	404	676060	0	0	0	0	0	0	11	0	
s19	0	8066	591046	0	0	15745	54931	4366	166	5707	0	
s20	0	50968	2923759	0	0	4530	19283	5785	219	7596	0	
s21	0	93492	0	0	0	0	0	0	0	220	0	
s22	0	1885	67318	0	0	0	0	0	0	23	0	
s23	0	19565	5003	0	0	0	0	437	13	602	0	
s24	0	18688	0	0	0	0	0	0	0	132	0	
s25	0	30702	0	0	0	0	0	0	0	1	0	
s26	0	4415	0	0	0	0	0	0	0	12	0	
s27	0	808	0	0	0	0	0	0	0	5	0	
s28	0	97	0	0	0	0	0	0	0	1	0	
s29	0	1349	0	0	0	0	0	0	0	0	0	
s30	0	982	0	0	0	0	0	0	0	1	0	
s31	0	14186	0	0	0	0	0	0	0	78	0	
s32	0	6996	423879	0	0	0	0	0	0	1177	0	
s33	0	10893	695396	0	0	0	0	0	0	58	0	
s34	0	581	202810	0	0	0	0	0	0	4	0	
s35	0	25127	1906617	7067	0	0	0	0	0	1894	0	
s36	0	1575	343018	4713	0	0	0	0	0	364	0	
s37	0	742	102	0	0	0	0	0	0	8	0	
s38	0	115078	0	3389	0	0	0	1859	39	2808	0	
s39	6194	32197	249633	22560	0	19108	95873	13819	525	39110	0	
s40	13894	19548	155204	52705	0	34981	134332	118722	4511	60054	0	
s41	0	80848	0	385	0	0	0	0	0	139	0	
s42	35379	278032	123400	117750	0	6152	15060	28181	1071	22626	0	
s43	24179	534964	20436	144048	0	43966	33609	6470	246	43208	0	
s44	0	55132	0	0	0	0	0	0	0	59	0	
s45	4803	38998	157	12297	0	673	1016	0	0	407	0	
s46	9450	124836	0	0	0	0	0	0	0	928	0	
s47	105646	1015261	153474	126781	0	25045	48119	2191	83	8174	0	

Contd...

Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	Semi-skilled Labourer	Skilled Labourer	Capital	Land	RH1	RH2	RH3	RH4	RH5	UH1
s1					1295160	1748809	924892	2380681	685912	1096442
s2					853411	863797	715964	2001316	468233	1076553
s3					41347	173281	43960	162162	23689	44655
s4					60879	98179	77347	223187	24291	29672
s5					58830	127108	134741	443697	50096	17700
s6					431258	604594	360276	1017087	278969	564350
s7					4751	6418	4082	15928	2848	5193
s8					73268	119517	55749	208950	56300	110118
s9					49508	70263	57532	87040	46742	68723
s10					112330	159422	130537	197487	106054	155926
s11										
s12										
s13										
s14					3155	4917	3546	6463	3457	10601
s15										
s16					6585	10646	5588	15695	2272	2660
s17					286809	241743	180996	586653	251821	678356
s18					892930	1243858	735663	1860225	542189	1070789
s19					325311	495774	295584	697359	198246	372459
s20					1688309	1701337	1312943	4770282	1217157	2749099
s21					604431	1089287	637019	1482687	302271	196347
s22					480454	478761	366257	598092	316338	352836
s23					7829	3904	6443	5467	3109	9948
s24										
s25					82	20	20	251	97	503
s26										
s27										
s28										
s29										
s30										
s31										
s32					243481	297952	214261	606258	156021	298754
s33					605491	830863	515086	1339248	362704	763926
s34					65706	82594	62661	120754	46812	93211
s35					897048	1163103	940987	1652782	1254903	1418793
s36					276262	390564	283615	455749	146944	397852
s37					228689	360450	268436	508590	103895	253082
s38					995008	845100	642206	2844287	747045	1360189
s39					642336	650284	440847	1397080	454547	942910
s40					82238	54672	55343	265813	84685	141595
s41					27427	57210	8900	58533	51797	126582
s42					55373	27938	23443	81148	79331	113348
s43					128936	65055	54588	188953	184722	263932
s44					152537	106138	86950	304757	133885	314140
s45					39326	43480	34837	91793	24458	40817
s46					191193	207483	114214	409208	133807	275460
s47					865386	406252	408182	1628578	763421	2447375

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Appendix V

Table 7 Social Accounting Matrix for India for 2007-08 (Value in lakhs)

Sector	UH2	UH3	UH4	Pvt. Corp.	Pub. Enter.	Govt.	Ind. Taxes	Capital a/c	ROW	Total
s1	1126246	353297	196016			174924		-246479	1133106	19277878
s2	944866	228800	144172			187487		-164699	5554	11193736
s3	37137	28239	5065			3459		-19137	2134	750681
s4	19124	17662	1574			0		-16562	5944	758528
s5	11820	7440	1797			0		-31040	206593	1315821
s6	576480	156136	94586			61901		-27298	43090	7615146
s7	4592	1128	600			0		21239	0	3749834
s8	129148	28422	17087			0		-35846	0	2128497
s9	80844	29283	16479			0		-20863	0	715895
s10	183429	66441	37389			0		36630	45503	4508552
s11						0		-330	0	194216
s12						0		-256721	0	2956167
s13						0		26854	0	375849
s14	13218	2190	2875			0		4209	0	274404
s15						0		43159	34070	786962
s16	2480	1036	325			0		2538	78568	258422
s17	748148	83047	158267			0		1221	222775	7023125
s18	1092291	278037	181381			0		669	134345	8892650
s19	381639	121986	67153			355992		-13222	242242	11174721
s20	2617208	509215	430405			220507		516095	134592	28027922
s21	84296	160611	24803			40		104041	130713	10150169
s22	430323	120771	108388			0		12420	383695	4594952
s23	6325	5111	1122			13860		24253	17960	7221342
s24	338	15	30			44103		6743	28889	3451503
s25						0		-4398	426262	30000977
s26						0		14340	1182506	2355788
s27						0		-23816	4208	183704
s28						0		-38009	78682	79406
s29						0		110	152	667796
s30						0		126823	201396	559210
s31						0		-422290	3524779	6408220
s32	272920	77658	44642			0		392230	341759	4379562
s33	748924	200029	115905			0		206877	780240	9239650
s34						0		219978	234507	1311846
s35	2080797	379395	926379			338053		652748	986587	17919115
s36	450705	124758	71966			27278		144978	19674	3342406
s37	229961	94138	25760			0		103398	45565	2483794
s38	1549809	152409	270554			1		1353891	2269526	20486654
s39	1102217	166695	226945			545143		600489	4885656	16259889
s40	678226	12796	15519			241675		1446121	100484	4138255
s41	66257	154082	3090			55		199689	37531	3110736
s42	131860	9878	39917			353920		260551	151386	5807881
s43	307036	23002	92948			627692		135709	65190	3763028
s44	362017	37284	66503			0		172171	709593	4043895
s45						11316		2059237	664547	5518725
s46	272388	53702	38352			22093		1428651	444438	8752309
s47	2656509	274770	375526			773135		3104986	6985819	46476432

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