

**AGGREGATED AND COMPACT DISAGGREGATED  
FINANCIAL SOCIAL ACCOUNTING MATRICES FOR  
PAKISTAN**

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This paper constructs the aggregated and compact disaggregated financial social accounting matrices for Pakistan for the year 1999/2000. The extension of the SAM on financial side and inclusion of information on flow of funds is an important contribution of this study to the existing literature on social accounting matrices. A number of key characteristics of the real and financial sides of the economy are derived from the direct inspection of the financial social accounting matrices for Pakistan. The estimates of the SAM show a high share of agriculture sector in capital income, which is a reflection of land ownership structure in Pakistan. Similarly, there is a low share of wages in total factor income, which reflect that most of the workers in Pakistan are self employed and their income is recorded as capital income. The estimates of goods for domestic and export markets show that bulk of the gross domestic product was consumed domestically and only 16 percent was exported to the world market in the year 1999/2000. Furthermore, 58 percent of the total physical investment was made by the government and the contribution of non-financial firms in total physical investment was only 13 percent. During the same period the non-financial firms reduced their borrowing from the banking system which reflect uncomfortable environment for business activities in the year 1999/2000. A low share of non-financial firms in total physical investment and reduced borrowing of private firms reflect weak investors' confidence, which requires special attention of the policy makers in Pakistan.

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## 1. Introduction

A social accounting matrix (SAM) can be viewed as a straightforward extension of input output tables in that they capture the distribution of income in addition to production and demand. A particular and most important variant is provided by the United Nations' System of National Accounts (see United Nations 1993) which has set down guidelines for deriving national income statistics as part of a more comprehensive social accounting matrix approach.

The SAM is relatively new tool of economic analysis compared to its input output counterpart. Its modern use as a conceptual framework for policy analysis and planning purposes started in 1970s. More recently SAMs were constructed and used to address many development issues such as poverty, income distribution, and structural adjustments. The data organized in a social accounting matrix are most convenient framework for keeping track of the circular flow of income and expenditure in an economy (see Pyatt and Round 1977, Hayden and Round 1982, and King 1985). However, the existing data framework in the literature mostly provides data for the real side of the economy. Considering the financial development in developing countries the need arises for data frameworks that would link together in a coherent and consistent manner data of real and financial sides of the economy. This paper has shown how a social accounting matrix can be used to provide a bridge between real and financial sides of the economy. The extension of the SAM on financial side is an important contribution of this study to the existing literature on social accounting matrices.

There are few social accounting matrices for Pakistan, but they are based on the input output table of 1990/91 or earlier (See, Government of Pakistan 1993, Siddiqui and Iqbal 1999, and Dorosh et al. 2004). For stable economies this may not be a serious problem, but for a rapidly growing or changing economy, such as Pakistan, this lag may be a significant limitation. Hence, there is a high need to update the social accounting matrix so that it should reflect the current structure of the economy. Furthermore, since there is significant financial development in the country during the last two decades, and also the official flow of funds data is now available, it will be more worthy to move from a real social accounting matrix to a financial social accounting matrix for

Pakistan's economy, containing the details of the financial institutions and flows of financial assets.

This paper uses the official supply and use table 1999/2000 and flow of funds data 1999/2000 of Pakistan to construct the aggregated and compact disaggregated financial social accounting matrices for Pakistan for the year 1999/2000.<sup>2</sup> This main purpose of building the financial social accounting matrix is to organize information about the economic, social and financial structure of Pakistan's economy and to provide statistical basis for creation of plausible model capable of presenting a static image of the economy along with simulating the effects of policy interventions in the economy.

This paper consists of six sections. Following brief introduction, section 2 describes the structure of the aggregated financial social accounting matrix. Section 3 describes the key characteristics of Pakistan's economy using aggregated financial social accounting matrix. Section 4 presents the structure of the compact disaggregated financial social accounting matrix. Section 5 discusses the financial side of Pakistan's economy using compact disaggregated financial social accounting matrix. The last section provides conclusion and discusses the uses of the matrix.

## **2. Structure of Aggregated Financial SAM**

A social accounting matrix is a square matrix of monetary flows that reflect all transactions between the various entities in an economy. The number of transactions, called accounts, constitutes the dimension of the square matrix. By convention, all column accounts represent expenditure or outlays, while the row accounts represent incomes or receipts. SAMs disaggregate the national accounts and link these with the economy's input output accounts.<sup>3</sup> The SAM is thus an extension of input output accounts incorporating more disaggregated details of factors and institutions in a fully consistent framework.

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<sup>2</sup> The flow of funds data utilized in this study is available in published form (see State Bank of Pakistan 2003), however, the supply and use table is not published yet, but available in unpublished preliminary shape.

<sup>3</sup> Input-Output accounts capture inter-industry relationships through flows of intermediate inputs between different sectors, as well as, value added according to each activity and structure of final demand.

Generally the real SAM comprises the accounts such as: production activities, commodities, factors, institutions (mainly households, firms, and government), rest of the world, and an aggregated capital account. In a financial SAM, each institution has two types of accounts: a current account as in a simple real SAM, and a capital account. In a real SAM, there is already an aggregated capital account but this account is single for the whole economy, as savings of each institution goes to the total investment, and there is no account for the participation of each one of them in the gross fixed capital formation. In addition, this capital account records only the flows of physical capital. The creation of a distinct capital account for each institution allows keeping details of the institutions' various assets (physical or financial). The financial account keeps the details of the nature and the structure of financial resources and uses of economic institutions. It can consist of the currencies, deposits, bonds, loans, to name a few.

The classification of accounts in a social accounting matrix can take various forms, depending on how the constituent accounts are defined and one's analytical interest and specific policy concern. Six major types of accounts are distinguished in the current aggregated financial social accounting matrix for Pakistan. These are: (i) production activities, (ii) commodities, (iii) factors of production, (iv) current accounts, (v) capital accounts, and (vi) financial account. The structure of the aggregated financial social accounting matrix is available in Waheed and Ezaki (2006:18). The discussion on each account is presented below.

The production activity accounts are used to buy raw materials and hire factor services to produce commodities. The receipt (row) of the activity account derives from sales in the domestic and foreign (exports) markets.<sup>4</sup> Their expenditures (column) include the purchase of intermediate commodities, value added (wage payments to labors and rent to fixed factors), and indirect taxes. The current aggregated financial social accounting matrix for Pakistan includes six activities<sup>5</sup>: (i) agriculture, (ii) mining and quarrying, (iii) manufacturing, (iv) electricity, gas and water, (v) construction, and (vi) other sectors.

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<sup>4</sup> The receipts may also include export subsidies received from government. Exports tax is recorded as negative export subsidies.

<sup>5</sup> These six activities are an aggregation of 157 industries of the supply table for Pakistan for the year 1999/2000.

The distinction between production activities and commodities is not a standard feature of all social accounting matrices. But this distinction can be useful as one production activity can produce several commodities or several production activities sometime contribute to only one commodity. Since in the supply table for Pakistan, one activity is producing more than one commodity, a distinction is made between activities and commodities in the current social accounting matrix. There are six commodities in the current aggregated financial social accounting matrix for Pakistan. In the commodity account which represents domestic product markets the column shows domestically produced commodities and imports and row shows the receipt proceed from sales in the domestic market of: intermediate products to activities; final goods to household; government for consumption<sup>6</sup>, and investment goods to the capital account. The intersection between the activity columns and the commodity rows gives the input-output relationships. The activity and commodity breakup also reflect the broad classification of sectors used in the national accounts of Pakistan in the Economic Survey (See, Government of Pakistan 2003/04:9).

Factor accounts show how value added is distributed to the factors of production, and how the factor income is transferred to various institutions. There are two factors of production (labor and capital) in the current financial social accounting matrix for Pakistan. The row entry in the labor account represents the compensation of employees (wages and salaries), which the labor receives from the sale of their services to the activities. Income payment received by the capital factor in the form of rent and profit is computed as a residual payment. In the column, the labor account pays wages and salaries to households, whereas the capital account pays capital income to household, non financial firms and banks.

Current account shows the sources and uses of income of the institutions. The sources of income mainly include labor and capital income. Among the uses, part of the income is consumed, part is redistributed among institutions themselves, and the remaining part is saved. The current account of the aggregated financial social accounting matrix for Pakistan comprises of: (i) households, (ii) non-financial firms,

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<sup>6</sup> Following standard national accounting practice, only households and government make consumption expenditure.

(ii) banking system, (iv) government, and (v) rest of the world (ROW). It is not customary to distinguish non financial firms to finance institutions (such as banks) in a real SAM. In the current aggregated financial SAM, such distinction is introduced between these two types of firms.<sup>7</sup>

In most of the SAMs, there is only one aggregated capital account of all institutions. An important factor behind this treatment of capital accounts is that lack of adequate data for disaggregation. In many cases the major bottleneck is the lack of consistent flow of funds accounts. However, there are many advantages if the capital account is disaggregated (see Vos 1991:165 for detail). In the current financial SAM, the capital account is disaggregated not only with respect to institutions but also between physical and financial capital.<sup>8</sup> The rows of capital account show here the resources available to institutions in the form of savings and financial liabilities. The columns show the use of the available resources by institutions in investment goods and on aggregated financial assets. Thus, the incurrence of liabilities together with gross savings yields the total finance available for investment. Total investment in turns is the sum of gross fixed capital formation (physical investment) and acquisition of financial assets (financial investment).<sup>9</sup>

The institutions incur financial liabilities to other institutions and also acquire financial assets from other institutions. This is recorded in the financial account. Because a liability automatically creates a corresponding asset, they must balance in aggregate (for more on flow of funds system, see Roe 1985, Greenfield 1985, and Waheed 2005). The financial account in the current aggregated financial social accounting matrix is only a single row and column. In the compact disaggregated financial SAM, this account will be extended to show the details of the nature and the structure of financial resources and uses of economic institutions.

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<sup>7</sup> There may be no good reason to distinguish banks from other business in the current account, but in the capital account financial institutions obviously have a distinct role to play.

<sup>8</sup> Financial capital account is labeled as financial account.

<sup>9</sup> In a SAM, where financial account is not present, total investment is identically equal to total savings (domestic and foreign).

### **3. Aggregated Financial SAM for Pakistan**

The year 1999/2000 is chosen as the base year for the construction of the financial social accounting matrix for Pakistan, since the most recent available official supply and use table and flow of funds data are for the year 1999/2000. Thus, the current financial SAM for Pakistan can be viewed as a combination of the flow of funds and supply and use table. It is comprehensive and provides the details of the real-financial transaction during the year 1999/2000. The linkages between the real and financial aspects of the economy are provided by the savings of the institutions. The other data sources used to construct the financial social accounting matrix include national accounts statistics and government budget data.<sup>10</sup> The data of aggregated financial social accounting matrix for Pakistan for the year 1999/2000 is reported in Waheed and Ezaki (2006:19). The discussion on this table is presented in the following sub sections.

#### **3.1. Structure of Production**

Table 1 shows the production structure of the economy. It gives breakdown of GDP estimates with income and expenditure approaches. Under the expenditure approach, final household consumption expenditure contributed in GDP by 76.41 percent, final government expenditure by 11.17 percent, total gross fixed capital formation by 16.01 percent, aggregate exports by 15.75 percent and aggregate imports by 19.35 in the year 1999/2000. Similarly, under the income approach, the share of wage payments to labor in GDP is 16.62 percent and capital income share was 75.28 percent. The share of net taxes on production and import duties in GDP was 5.55 percent and 2.55 percent respectively in the year 1999/2000. A low share of wages in total factor income shows that most of the workers in Pakistan are self employed and their income is recorded as capital income.

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<sup>10</sup> For more on data needs for constructing a SAM, see Hayden and Round (1982:459-459), and Keuning and DeRuijter (1988:81-85).

**Table 1: Gross Domestic Product (Expenditure and Income approaches)**

	(Rs. Million)	(% of GDP)
<b>Expenditure approach of GDP</b>		
Household consumption	2404837	76.41
Government consumption	351624	11.17
Gross investment	503980	16.01
Exports	495655	15.75
Imports	-608929	-19.35
Gross Domestic Product	3147167	100
<b>Income approach of GDP</b>		
Compensation of employees	523076	16.62
Gross operating surplus	2369276	75.28
Tax on production	174511	5.55
Tax on imports	80304	2.55
Gross Domestic Product	3147167	100

Source: Authors' calculations

Comparison between sectors can be made in terms of the share of value added in GDP, and gross investment in each sector. Table 2 shows the gross value added and investment during 1999/2000.<sup>11</sup> It reveals that agriculture sector contributed by 25.7 percent in GDP, mining and quarrying by 1.8 percent, manufacturing by 25.13, electricity, gas and water by 3.39 percent, construction by 1.47 percent and other sectors by 42.51 percent in the year 1999/2000. The gross investment as a share of total investment was 11.92 percent in agriculture, 17.83 percent in manufacturing, and 49.61 percent in other sectors during 1999/2000.

<sup>11</sup> Gross value added is estimated as sum of compensation of employees, gross operating surplus, tax on production and tax on imports.



**Table 2: Value Added and Investment during 1999/2000 (Rs. Million)**

<b>Production sectors</b>	<b>Gross Value added</b>	<b>% share in GDP</b>	<b>Gross Investment</b>	<b>% share in Total INV</b>
1. Agriculture	808943	25.7	60081	11.92
2. Mining & Quarrying	56772	1.8	14105	2.8
3. Manufacturing	790885	25.13	89845	17.83
4. Electricity, Gas & Water	106670	3.39	48591	9.64
5. Construction	46175	1.47	41344	8.2
6. Other sectors	1337722	42.51	250015	49.61
<b>Total</b>	<b>3147167</b>	<b>100</b>	<b>503980</b>	<b>100</b>

Source: Authors' calculations

Table 3 shows the estimate of goods for domestic and exports markets. It is clear that bulk of the agriculture production (98.44 percent) was consumed domestically, while only 1.56 percent was exported to the world market in the year 1999/2000. Similarly, 94.92 percent of the mining and quarrying production was consumed domestically and 5.08 percent was exported. Manufacturing sector's 80 percent production was used in the domestic market and 20 percent was exported to foreign market. For rest of the sectors all output produced was consumed domestically. On the other side, 95.15 percent exports were coming from manufacturing, 4.03 percent from agriculture and 0.82 percent from mining and quarrying, during the year 1999/2000.

**Table 3: Goods for Domestic and Exports markets during 1999/2000**  
(Rs. Million)

	Gross Output (GO)	Domestic supply (DS)	(DS) of % (GO)	Exports (EXP)	(EXP) % of (GO)	% Share In total (EXP)
1. Agriculture	1279078	1259112	98.44	19966	1.56	4.03
2. Mining & Quarrying	80163	76093	94.92	4070	5.08	0.82
3. Manufacturing	2357780	1886161	80	471619	20	95.15
4. Electricity, Gas & Water	356542	356542	100	0	0	0
5. Construction	256192	256192	100	0	0	0
6. Other sectors	5199103	5199103	100	0	0	0
TOTAL	9528858	9033203	94.8	495655	5.2	100

Source: Authors' calculations

Table 4 shows the sectoral shares in aggregate wage payments to labor and capital income. Agriculture's share in total wage payment was 20.21 percent, while manufacturing sector share was 16.33 percent in the year 1999/2000. Similarly, agriculture sector contributed in aggregate capital income by 28.32 percent, while manufacturing sector contributed by 24.95 percents. A high share of agriculture in capital income is a reflection of land ownership structure in that sector.

**Table 4: Sectoral shares in Wages and Capital Income during 1999/2000**  
(Rs. Million.)

Production sectors	Wages of Employees	% share in wages	Capital income	% share in Capital Income
1. Agriculture	105693	20.21	670952	28.32
2. Mining & Quarrying	0	0	42486	1.79
3. Manufacturing	85432	16.33	591192	24.95
4. Electricity, Gas & Water	7340	1.4	98891	4.17
5. Construction	39203	7.49	3509	0.15
6. Other sectors	285408	54.56	962246	40.61
Total	523076	100	2369276	100

Source: Authors' calculations

### 3.2. Assets and Liabilities

Table 5 shows the changes in physical and aggregate financial assets and liabilities of institutions. The sum of the savings and financial liabilities are the total funds available for the institutions, while on the assets side the institutions total assets are the sum of their physical and aggregate financial assets. It is clear that in total savings the greatest contribution was of households (75.29 percent), followed by the government (12.09 percent), and non-financial firms (7.02 percent). The banking systems and rest of the world contributions in total savings were 3.44 percent and 2.16 percent respectively during the year 1999/2000.

The lower part of Table 5 shows that most of the physical investment was made by the government (58.06 percent) followed by the households (23.13 percent). It is worth to note that contribution of non financial firms in total physical investment was only 13.3 percent, while banking system investment was 5.51 percent in the year 1999/2000. On the other hand, within total investment of institutions, the investment in financial assets was 69.67 by households, 18.77 by non financial firms, 90.28 by banking system and 31.16 percent by the government.

**Table 5: Changes in Assets and Liabilities of Institutions during 1999/2000 (Rs. Million)**

Institutions	Savings	% share of Total SAV	Liabilities	% share in Inst. Funds	Total Funds of Institution
Households	379449	75.29	4898	1.27	384347
Non-Financial Firms	35356	7.02	47161	57.15	82517
Banking system	17351	3.44	268267	93.93	285618
Government	60953	12.09	364108	85.66	425061
Rest of the World	10871	2.16	11921	52.3	22792
Total	503980	100	696355	58.01	1200335
Institutions	Physical Investment	% share in Total INV	Financial Investment	% share in Inst. Assets	Total Inst. Assets
Households	116582	23.13	267765	69.67	384347
Non-Financial Firms	67032	13.3	15485	18.77	82517
Banking system	27750	5.51	257868	90.28	285618
Government	292616	58.06	132445	31.16	425061
Rest of the World	0	0	22792	100	22792
Total	503980	100	696355	58.01	1200335

Source: Authors' calculations

#### 4. Structure of Disaggregated Financial SAM

For a better understanding of the economic system it is crucial to know the origin and destination of capital flows and how these are channeled through financial intermediaries and used for capital accumulation. Since both physical and financial investments imply changes in wealth, therefore, a SAM will be significantly richer with a detailed capital account. The detailed structure of the financial SAM also allows a further analysis of the structural characteristics of Pakistan economy and particularly intra and inter-industry sectoral linkages and flows of funds and resources across different institutions. Thus, the aggregated financial account is now disaggregated with the introduction of eighteen monetary and financial assets. In the disaggregated financial SAM the activities, commodities, and factor accounts are intact.<sup>12</sup> However, in the institutions accounts, the banks are now disaggregated into central bank and banking system. This distinction of financial institutions is useful for a meaningful analysis of monetary policy in the country. The structure of the compact disaggregated financial social accounting matrix for Pakistan is available in Waheed and Ezaki (2006:20-21).

The savings of different institutions and the contribution of each of them to the gross fixed capital formation are the buffer variable in this social accounting matrix. Basically, these are the most apparent variables linking the real side to the financial side of the current social accounting matrix.

The savings of households and liabilities in the form of loans from domestic institutions are spent on investment in different goods together with deposits, holding of currencies, bonds, and lending to other sectors. The non financial firms' issuance of bonds, loans from domestic and foreign sources together with their savings is used for domestic physical investment, currency holding and lending to other sectors. Non financial firms are also holding government securities and banking systems' bonds and making deposits with the banking systems.

The banking system liabilities are deposits in its accounts, issuance of bonds and credits from other sectors. Their assets include investment in physical capital, holding of domestic and foreign currencies, deposits in

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<sup>12</sup> These accounts can also be disaggregated depending upon the availability of data and the purpose of the study.

other sectors' accounts, holding of bonds and lending to all other institutions except central bank.

The government liabilities are issuance of currency, deposits in their accounts, and issuance of bonds and borrowing from domestic and foreign institutions. The government assets are investment in different goods, holding of central bank's currency, deposits in the central bank, banking system and foreign banks and lending to other sectors. Government is also holding bonds of banking systems, non financial firms and rest of the world.

The central bank liabilities are only issuance of currency and deposits in its accounts. On the asset side central bank is holding physical and financial assets. Their financial assets are holding of government currency, deposits in foreign banks, holding of government securities and lending to other sectors.

The rest of the world savings and other liabilities in the form of foreign currency, deposits in the foreign banks, issuance of foreign bonds and borrowing from domestic sectors are used for domestic financial assets. This includes deposits in the central bank and banking system, holding of government, banking system and non financial firms' bonds. The rest of the world are also lending to domestic institutions excepts households and central bank.

## **5. Disaggregated Financial SAM for Pakistan**

The data of the compact disaggregated financial social accounting matrix for Pakistan for the year 1999/2000 is available in Waheed and Ezaki (2006:22-24). The institutions savings and borrowing are financing their physical and financial investments. Table 6 shows that in 1999/2000, the households were holding most of their assets in the form of financial assets. In the total assets of Rs. 379449 million, households were holding Rs. 116582 in the form of physical assets. Within the financial assets of Rs. 267765 million, households' were holding Rs. 48600 million in the form of currencies, Rs. 59297 million in the form of deposits and Rs. 97617 million in the of bonds. Households were giving loans of only Rs.1847 million and Rs. 60404 million was in the form of other financial flows. The liabilities of the households were only loans from all other institutions except rest of the world.

**Table 6: Assets and Liability Flows of Institutions during 1999/2000 (Rs. Million)**

	Households		Firms		Banking System		Government		Central Bank		Rest of the World	
	A	L	A	L	A	L	A	L	A	L	A	L
<b>PHYSICAL INVESTMENT</b>												
Agriculture	13898		7991		3319		34883		-11			
Mining & Quarrying	3263		1876		779		8189		-3			
Manufacturing	20783		11950		4963		52165		-16			
Electricity, Gas & Water	11240		6463		2684		28212		-9			
Construction	9564		5499		2284		24005		-7			
Other sectors	57834		33253		13811		145161		-45			
Sub-total	116582		67032		27841		292616		-91			
<b>FINANCIAL INVESTMENT</b>												
Government Currency	125						41		-84			
Central Bank Currency	48475		36		20500		-578		68433			
Foreign Currency					-2681							-2681
Deposits in Government	15049				675		18858					
Deposits in Central Bank	197				70391		75550		142206		-6019	
Deposits in Banking System	44051		1192			29225	-9257				-6761	
Deposits in Foreign Banks					10000		672		-8327			2295
Government Bonds	85433		835		-	98681		148551	2E+05		19180	
Banking System Bonds	2926		1248			6588	530		172		1028	
Firms Bonds	9258			24916	8258		800				6600	
Foreign Bonds					-358		-47		-	10297		-
Government Loans		-100		-92		-1616	-1962					-154
Central Bank Loans		260				6186		16615	23061			
Banking System Loans		3852		-6775	57376		53716					6583
Firms Loans		886	16750			32	-1					15833
Household Loans	1847			1886		-39						
Foreign Sector Loans				2200		4081		26367			32648	
Other financial flows	60404		-4576	25026	-9325	30660	66737	99961	5729	-17489	-	96
Sub-total	267765	4898	15485	47161	56155	75117	132445	364108	2E+05	193150	22792	11921
Financial (Assets – Liabilities)	262867		-	31676	-	18962	-	231663	8563		10871	
Total Assets	379449		35356		8879		60953		8472		10871	

Note: A stands for asset and L stands for liability.

Source: Authors' calculations

In the asset portfolio of the non-financial firms, lending to other institutions (Rs. 16750 million) were the major item followed by holding of banking system's bonds (Rs. 1248 million) and deposits in the

banking system (Rs. 1192 million). On the liability side, out of total Rs. 47161 million liability flows, Rs. 24916 was issuance of bonds, Rs. 2200 million was loans from foreign sector and Rs. 1886 million was loans from the households. It is worth to note that non financial firms reduced their borrowing from the banking system by Rs. 6775 million and government by Rs. 92 million during the year 1999/2000.

The major asset flows of the banking system shows lending of Rs. 57376 million to other sectors, deposit of Rs. 70391 million in the central bank and Rs. 10000 million in the foreign banks during 1999/2000. The major liabilities were deposits in the banking systems (Rs. 29225 million) and bonds of the banking system (Rs. 6588 million). The borrowing of the banking system was Rs. 6186 million from the central bank and Rs. 4081 million from the foreign banks during the year 1999/2000.

The government was the major investor in physical assets during 1999/2000. In the financial assets of the government, the main items were deposits in the central bank (Rs. 75550 million) followed by other financial flows (Rs. 66737 million) during the year 1999/2000. Among government liabilities, the main items were government bonds (Rs. 148551 million) followed by borrowing from the banking system (Rs. 53716), foreign sector (Rs. 26367 million) and the central bank (Rs.16615 million). Government liability also included deposits in its account (Rs. 18858 million), and other financial flows (Rs. 99961 million) during the year 1999/2000.

The central bank major liability items were deposits in its account (Rs. 142206 million) and issuance of currency (Rs. 68433 million). On the asset side, central bank was holding government bonds (Rs. 191459 million), and giving loans to other institutions (Rs. 23061 million) besides holding of banking systems' bonds (Rs. 172 million) and other financial assets (Rs. 5729 million) during 1999/2000.

The rest of the world assets were mainly lending to the domestic economic institutions (Rs. 32648 million), holding of government's bonds (Rs. 19180 million), firms' bonds (Rs. 6600 million) and banking system's bonds (Rs. 1028 million) during the year 1999/2000. The rest of the world reduced their deposits in the banking system (Rs. 6761 million) and in the central bank (Rs. 6019 million) during the year

1999/2000. The liabilities of the rest of the world were mainly borrowing from the non financial firms (Rs. 15833 million) banking systems (Rs. 6583) and deposits in the foreign banks (Rs. 2295 million).

## **6. Conclusion and Implications**

The results of economic modeling would be more efficient if developed with an underlying database. In macroeconomic modeling, such a database needs to integrate the interrelated subsystems that exist with the economy. In case of general equilibrium modeling, the most suitable database is the social accounting matrix. This paper illustrates how SAM can be used to provide a bridge between real and financial sides of the economy. The extension of the SAM on financial side and inclusion of information on flow of funds is an important contribution of this study to the existing literature on social accounting matrix.

This paper utilized the supply and use table (1999/2000) and flow of funds data (1999/2000) to present two versions of the SAM for Pakistan: an aggregated SAM and a disaggregated SAM. The latter is a compact disaggregation of SAM designed to illustrate the details of the financial side of the economy. The realization of these SAMs constitutes an important contribution in organization and cross checking of statistics in Pakistan. In addition, glancing through financial SAM could allow an easier understanding of several interrelationships that exist among various categories of economic institutions and sectors considered.

A number of key characteristics of the real and financial sides of Pakistan economy are derived from the direct inspection of the financial social accounting matrices for Pakistan. The estimates of the SAM show a high share of agriculture sector in capital income, which is a reflection of land ownership structure in Pakistan. Similarly, there is a low share of wages in total factor income, which reflect that most of the workers in Pakistan are self employed and their income is recorded as capital income. Similarly, the estimates of goods for domestic and export markets show that bulk of the gross domestic product was consumed domestically and only 16 percent was exported to the world market in the year 1999/2000. Furthermore, 58 percent of the total physical investment was made by the government and the contribution of non-financial firms in total physical investment was only 13 percent. During the same period the non-financial firms reduced their borrowing from the



banking system which reflect uncomfortable environment for business activities in the year 1999/2000. A low share of non-financial firms in total physical investment and reduced borrowing of private firms reflect weak investors' confidence, which requires special attention of the policy makers in Pakistan.

Thus, the resultant financial SAMs seem to be a reasonable reflection of the underlying real and financial structure of Pakistan's economy and, therefore, applicable to any modeling analysis. The inclusion of an input output matrix into the SAM accounts means that we can invert this matrix and generate economic output multipliers. This is often a straightforward way to consider the economic impact of growth across different sectors. While the model has limitations in many aspects, its simplicity offers certain advantages. The model can be applied for understanding the nature of the backward and forward linkages in the economy. Furthermore this SAM can also be used as a database for the financial computable general equilibrium modeling analysis for Pakistan.

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