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ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

POVERTY FOCUSED SOCIAL ACCOUNTING MATRICES (SAM) FOR ADDIS ABABA

"A thesis submitted to the School of Graduate Studies of Addis Ababa University in partial fulfilment of the requirements for the Degree of Masters of Science in Economics".

By:

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ABSTRACT

The purpose of this paper is to construct 2004 poverty focused social Accounting Matrix (SAM) for Addis Ababa, and based on some satellite tables to analyze the poverty situation of the city in the specified period as compared with its achievements in economic growth. In order to avoid some bias and to keep special features of the city as to balance the row and column total Manual estimation method is used.

Firstly, an input output table, which helps to balance the unbalanced macro SAM, was constructed.

Secondly, a 16 by 16 SAM table was constructed from the city's Gross domestic product estimate; an input output table derived from the city GDP estimate; and with other official secondary data collected.

Thirdly, with the help of CSA welfare monitoring, labor force survey, and other relevant additional official documents as well as with the findings of SAM for Addis Ababa, the social living condition of the city has been investigated. Finally, with the help of standard human poverty level measurement evaluation basic indicator achievements of the city taken into consideration in detail.

KEYWORDS: - Social Accounting Matrix, Macro SAM, poverty, economic growth, Satellite table, and, balancing methods.

CHAPTER ONE

I. Introduction

Economic growth is a necessary but not a sufficient condition for the well-being of a society unless it addresses the problem of severe poverty. The most important factor for development and challenging for policy makers are the sources of economic growth, how it is achieved and the question of sustainability in the long- run. An achievement of economic growth, first and foremost must address the problem of income distribution, accessibility of basic needs in the market with affordable prices, and confronting the out side world economic order in a competitive manner. As stated in the World Bank 2002[1]

> "Poverty defined as an unacceptable deprivation in human well-being that can comprise both physiological and social deprivation. Physiological deprivation involves the non-fulfillment of basic material or biological needs, including inadequate nutrition health, education, and shelter. Social deprivation widens the concept of deprivation to include risk, vulnerability, lack of autonomy powerlessness, and lack of self-respect".

[1] for the details see world bank publication on volume 1- core techniques and cross-cutting issues 2002

Secondly, to palatability test the fruit of economic growth, every economic order should established based on its own structure, common consensus with in the nation/society and tangible comparative advantage to combat external shocks and other unexpected economic disorder in the long run. As Yingyi Qian's Insightful explanation

> ---although building best–practice institution is a desirable goal, getting institutions right is a process involving incessant changes interacting with initial conditions. The difference between China and Russia is not at all that china has established best practice institutions and Russia has not. The difference lies in the institutions in transition.

The economic growth performance of Addis Ababa as compared to the sever poverty situation has different reasons. Firstly, the main source of economic growth of the city is the trade sector which has highest the share of value added and but also it is dominated by importation of consumer goods. While the Industrial sector contribution, however is lower than that of the service sector in terms GDP but have high share in export. It dependent on imported row material and is mostly producing consumer goods. When we come to the agricultural sector, it is the least one in terms of GDP and factor labor contribution.

Secondly, the level of unemployment rate is very high particularly in the economically active age groups and even worse there is child labor utilization. Thirdly, the other major problems of city are housing, water supply and sanitation. Finally, the performance of the city administration budget –expenditure is very weak to address its poverty alleviation /reduction strategy.

1.1. Background

Ethiopia is one of the poorest countries in the world. GDP per capita is around 115 USD, (Abbi M. Kefir and Andrew McKay, 2003) while life expectancies ranges between53-55, educational enrollment, & other well-being indicators are extremely low as compared with the rest of the world. Among the major economic activities agriculture remains, the dominant economic sector contributes more than 90% of export, 85% to employment, and 55% of GDP. (Seifulaziz Milas and Karim Gi Aynaoui)

Ethiopia ranks 168(out of 172 countries) in the Human Development index, an assessment combining life Expectancy, adult literacy, and primary school enrollment rate & per-capita income. Ethiopia has one of the highest illiteracy rates in Africa, including 52% of adult males & 68% of adult females. Infant mortality is 97/1000. Average food intake reported to be 1840 calories per day or about 17% below average for Sub-Sahara Africa. Child malnutrition wide spread with 475 of children under five significantly underweight. Some four to five million people, 5.7%-7.1% of the population are in chronic food insecure & require food aid from year to year on an ongoing basis. An additional six to seven million (8.5%-10%) more are transitionally food insecure, and require food aid, when the rains fail or under- produce. (Seifulaziz Milas and Karim Gi Aynaoui)

Despite Ethiopia's vast resources of land, water & labor, it remains among the poorest countries in the world. It has been unable to use its huge resources effectively to rapidly increasing population.

Ethiopia lacks energy & communication infrastructure with only 13% of the population having access to electricity and nine telephones per 1000

population, of which only six are operational. Over all density is 30.76Kms/1000kms.Most of the population lives more than a half day walk from the nearest road, and in many rural areas, the principal means of transporting goods is through human porter age or use of pack animals. Ethiopia covers some 1.13 million square kilometers of the Horn of Africa, with a population estimated at over 70 million (2003) and increasing by some 2.9% per annum.

The country comprises a high central plateau, the Highlands ranging from 1500 to 2500meters above sea level, with several peaks rising up as high as 4600masl.

The highlands cover some 43% of the total area divided by the Great Rift Valley, running from Southwest to northeast, & surrounding by lowlands on all sides. (Seifulaziz Milas and Karim Gi Aynaoui)

Urbanization is at its lowest level in Ethiopia compared to other African countries as only about 15% of Ethiopia's population lives in urban areas. Moreover, 40% of the urban population found in only one city i.e., Addis Ababa. (Central Statistical Authority, 1999)

Urban centers historically emerged as centers of dynamic economic activity and play great role in the social-economic development process of any country. Yet, they are also sources all types of modern societal problem including destitution, homelessness, unemployment, exclusion, crime and so on. In Ethiopia, urban poverty manifested in many different ways ranging from stark destitution observable along major roads and every corner of urban centers to somewhat hidden deprivations that are

not easily discernable to casual and frontline observers. (Ethiopian Economic Association/EEA vol. IV 2004/05)

The apparent poverty signs are everywhere-beggars, shanty homes, and slim and malnourished individuals with dirty and torn cloths, scattered garbage, and small item exchange sites, idle persons everywhere, and so on. These poverty symptoms are likely to aggravate with increased urbanization that the country is undergoing. The government's recent poverty estimate indicates that urban poverty has increased by more than 11% during 1995-2000(Ministry Of Finance and Economic Development, 2002).

A host of problems including unemployment, inadequate housing stock, insufficient solid waste collection and disposal, inadequate water sanitation facilities, inadequate public transportation, traffic congestion, poor health services and inadequate education services generally characterizes urban areas in Ethiopia, as in most parts of the world.

Therefore, Violence, crime and personal insecurity are also urban livelihood features although the extent of these problem is not as high as part of the world. (EEA vol. IV 2004/05)

Addis Ababa, the capital city of the federal Democratic Republic of Ethiopia, founded in 1886 at the time when emperor Menelilk II and his wife Empress Taitu Bitul made their principal town at Entoto. Addis Ababa, or "New Flower" named by the Empress Taitu in 1883 and the city started to follow the avenue of development after the victory of Adwa over Italy.

The city of Addis Ababa is located at 8°50' North to 9° 06' north and 38°05'eastern longitude lines. The city is located in the central highland of the country from 2000-2500 meters above sea level and encircled by Entoto hills in the north and by Farmlands in the west, South and East.

The total area of the Addis Ababa city is 540sq.km out of these 24238 hectares is rural Kebeles. According to the data issued by the central statistical agency in 2003/04, the total number of the population living in the city estimated to be around 2.805million .Out of this 98.8% live in the center of the city, and the remaining is living in the suburbs of the city. Its annual population growth rate is 3.8% .The gender structure of the city is the combination of 51.6% females and 48.4% male. (Addis Ababa Investment Authority, 2005)

Nowadays, Addis Ababa is a self –governed chartered city with its own council. The city divided into 10 sub-cities, 99 Urban Kebeles and 20 Rural Kebeles, which consists of peasant associations as per the new administrative structure. (Proclamation no 361/2003)
Besides, Addis Ababa is the capital city of the federal Democratic Republic of Ethiopia; it is the seat of Head offices of the African Union and the Economic Commission for Africa, other international organizations and more than 103 foreign Embassies and Diplomatic Missions Offices in it. In addition, it is the centre of all-domestic as well as international economic activity of the rest of the country.

1.1.1. Major macro economic Indicator

According to the Addis Ababa city Bureau of Finance and Economic Development computation (2005), the real gross value added of the city is, therefore increased from 7.4 billion in 1988 Ethiopian Fiscal Year (EFY) to Birr 13.2 billion in 1997EFY. Accordingly, the city's economy in the last ten years has been growing at annual average rate of about 7% in real terms.

The real per capita GRDP of Addis Ababa taking the high variant population projection into account, increased from Birr 3317 in 1988 EFY to Birr4691 in 1997 EFY. The real per capita GRDP has been growing at an average annual rate of 4%.

The per capita consumption of the city grew at annual average rate of 5% and increased from Birr 2414 in 1988 EFY to Birr 3872 in 1997EFY. Thus in the study period, saving grew at an average rate of about 9% .Its average share to GDP is about 21%.

The estimated consumption to GDP ratio indicated that the final consumption accounted on average for about 79% to city's GDP and (84% private and 16% government consumption) the remaining 21% of the total GDP is accounted as saving.

The gross domestic capital formation (investment) grew on the average annually by about 10%. The average share of the gross domestic capital formation to the GDP is about 44%. The average share of the private sector in capital formation is 69% and its share to the total GDCF declined from 74% in 1988EFY to 65% in 1997EFY.

1.2 The statement of the problem

The implementation of effective and sustainable economic policies to address poverty problem for Addis Ababa requires access to appropriate database. Among such databases is a Social Accounting Matrix (SAM) that details the structure of the whole economy, taking into account the pattern of production and demand and various institutional relationships.

Beyond its role as consistency-check, the objective of a SAM is to provide multi-sector economy wide database that facilitate policy-analysis.

Constructing SAM at Regional level in developing countries in particular is often very difficult by insufficient and scattered data sources, which is very unreliable. In addition, SAM construction should not be seen an end by itself. It should update and improved through time to capture the current economic conditions. Therefore, there is a need to use current and constitute multi-sartorial economic and social data to support policy analysis and the development of economy wide models to address poverty situation in the city.

Graham Pyatt and Jeffery I. Round stated that **there have been many** attempts **to identify, as well as to solve, the special problems of Social Accounting at regional level. To the extent that only a single region is involved, whether it is part of a nation (a sub national region) or a group of nations (a supranational region), the conceptual problems are not very different from those arising at the national level.**

This is not to under state the practical problems, which are often, sever and derive largely from the fact that regions do not enjoy the statistical advantages that are by-products of the existence of well-defined national boundaries, such as customs controls or currency areas.

Despite the fact that the city gross domestic production/ expenditure estimate compilation is important for policy makers, researchers, development practitioners etc, it does not show the relationship among the main sectors explicitly. The reason why GRDP statistics do not contain an integrated statement of living standards for different groups is that distributional aspects are not part of the conceptual framework, which it underlies with the regions growth aspect only. Correspondingly, separate statistics on income distribution imply a conceptual framework, which regards inequality as a separate issue and an equal distribution of income as a policy objective of poverty reduction in the city.

The concern of this study is to bring the two sets of data together in an integrated completely to reflect the fact that the inter-relationships are essential. The core of the problem facing many cities in developing counties is the conflicts of interest between policies to encourage growth and those, which will do something to address the problems of the poorest members of the society. To understand these conflicts of interest, we need a conceptual framework that embraces them simultaneously and focuses on the link between them, both actual and potential. A general data framework such as like SAM is then needed to serve the conceptual frameworks, and as not an end by itself.

In Addis Ababa context, the major problems of Housing, Sanitation, water supply and but not least, unemployment and dependency of the leading service sector upon imported row materials as well as low level of export trade impaired its real achievement in economic progress. In addition, with higher age dependency structure; the so called cheap labor[2] with low level of skill; lower level of performance in government budget; and insignificant private investment operational per license granted make little sense to talk about economic growth that can have dear impact on the poverty situation in the city.

To sum up, a broad planning framework and data system like SAM have to build in the city in order that the way in which the living standard of different groups of the society are properly addressed and the roles they play in the process of economic development may be supposed.

From this, we try to obtain a better appreciation of those forces, which create a lively condition for growth and those, which leave behind in poverty. To the extent that these forces identified, the analysis leads to policy proposal and some insights into the extent to which the city can make progress based on its own resources.

1.3. Purpose and objective

The main target of an economic growth of a nation is to reduce poverty through creating employment and productivity of the working force. The core purpose and objective of the study is, therefore, to construct poverty focused Social accounting matrix for Addis Ababa and with some

[2] The one that in the existing conditions even if employed cannot afford to fulfill its basic needs in decades.

explanatory satellite tables that can address the poverty situation of the city.

The specific objectives of the study are to:

- To construct an input out table as bases for balancing SAM in Addis
- to construct poverty focused Social accounting matrix for Addis Ababa
- To construct satellite tables in line with the SAM table in order to show economic performance of the city and the existing situation of poverty, as SAM is not a model by itself to analyze every detail rather than amenable to other models like CGE.
- To suggest some policy recommendations that enhances the poverty reduction strategy of the city.

1.4. The importance of the study

First and for most, the construction of Social Accounting Matrix for Addis Ababa focusing on poverty which emphasis the problem of the majority of the society's poor and thus not only concentrate on in terms of economic growth but rather on the distribution of income.

In addition, as Social Accounting Matrix provides a framework for data organization, multiplier analysis, macro models, and multicultural economy wide models such as computable general equilibrium (CGE) models as the research findings will be amenable to a further deep insight policy analysis for the city in the future. Moreover, to show the relationship among the main sectors as compared with the Regional Income Accounting in a clarified way.

Finally, the establishment of SAM for the city enables policy makers, and other concerned organs to formulate or design their own alternatives which is basis on concrete, consistent, and accurate database and to identify the problems of different data sources inconsistency.

1.5. Assumptions

The main assumptions of the study are:

- The combination of data in a SAM permits a better analysis of the occurrences of poverty and inequality condition among the society living in the city.
- A SAM typically built based on data, which are already available in the city.
- Distinguishing regions within a SAM may enhance both its realism (homogeneity) and its usefulness in the city.
- The SAM can be seen both as a database for a logical framework for economy wide economic models.
- The city considered as having regional identity to analyze in the framework of SAM.
- Disaggregating data within a SAM wills depends, firstly, on the objectives sought, secondly on the quantity and quality of the available information that exists in the city.

1.6. Hypothesis

Economic growth by itself is not a guarantee for an improvement in the living standards condition of all population groups in the city in the short run (not a sufficient condition for the eradication of poverty in Addis Ababa).

1.7. The criteria for Admissibility

Basically, the construction of SAM for Addis Ababa is mostly based on the regions Gross Domestic Production account (unpublicized document), which is compiled by BOFED of Addis Ababa, applied in accordance with the 1993 United Nations System of National Account (UN-SNA) and the 1990 International Standard industrial Classification. In addition, other secondary data gathered from different government institutions.

1.8. The delimitations

The delimitations of the study emanate from as the system assumption that, there is no supply constraint .To mean; it never considers the structural rigidity of the economy. That is to say, that SAM is a snapshot of the economy at a given year this implies that the structure of the economy will not change by external factors.

The other delimitation is no analysis made to the rest of Ethiopia due to the lack of data among inters- regional transaction of goods and services with Addis Ababa so far. Due to this, the study will be limited to the analysis of SAM with the rest of the world. Moreover, a detailed Micro – SAM balancing table is not compiled due to data gaps and requiring a lot of experienced expertise knowledgeable staff as well as finance that can be achieved only by at an institutional level. Finally there is no a well developed income distribution analysis due to lack of a recent household income –consumption survey.

1.9. Structure of the paper

This study outlines the procedure how to construct input- output table and poverty-focused social Accounting Matrices (SAM) due to unavailability for Addis Ababa so far. In addition, to reflect the specific structure of the Addis Ababa economy some parts of SAM's account will be disaggregated particularly the factor and sector accounts.

Firstly, the research is basis on constructing the input- output table and the basic structure of Social Accounting Matrix for Addis Ababa at Macro level. Secondly, based on this framework, different data was collected and compiled from different sources.

Thirdly, the reconciliation procedure will follows to make the initial MACRO SAM balanced based on manual methods.

Finally, to show whether or not the fulfillment of household's basic needs such as food, shelter, clothing, education, and health services; and the supplementary wants will be displayed in a special satellite table; and commodities that satisfy each need are going to be shown.

CHAPTER TWO

2.1. The Review of related Literature

2.1.1. Input -Out Matrix[3]

An input-output table shows the flows of goods and services from each branch (called sectors) of the economy over a specified period usually for a year. To produce an output in any branch of the economy, different types of raw material inputs and capital equipment along with labor are required. The outputs produced may be utilized both for intermediate and final use. The part of the total gross output used as input for further production of goods and services may be termed as intermediate use, and the remainder of gross output, which uses directly by final user, is termed as final expenditure/demand. These final users further classified into broader categories as consumption by private and government; investment and exports.

An input-output (I-O) table is a commonly applied matrix framework presenting detailed information on the flow of goods and services and on the structure of production costs. In its context, final consumption expenditure, capital formation and trade indicated by industry of origin, and while intermediate consumption indicated both by industry of origin and destination. I-O matrix, however, **does not show the interaction between value added and final expenditure.** Its techniques are crucial tools for analyzing the structure of production in an economy. The techniques rest on the relationship between inputs of raw materials and outputs of final products.

A set of m n quantities or values arranged in m rows and r columns in a rectangular or square form is a matrix. That is why an input –output

[3] It is also called the transactions table, inter –industry table and flow matrix

table often called input –output matrix. Column and row of an input-output table is 'period industrial breakdowns of the final expenditures and income payments that enter into the national accounts'.

An input-output analyses became an economic tool when Leontief introduced an assumption of fixed –coefficient linear production functions relating inputs used by an industry along each column to its output flow, i.e., for one unit of every industry's output, a fixed amount of input of each kind is required.

Table2.1. Basic Structure of input-output table

	Industry 1	**Industry 2**	**Industry 3**	**Final demand**
Industry 1	a_{11}	a_{12}	a_{13}	f_1
Industry 2	a_{21}	a_{22}	a_{23}	f_2
Industry 3	a_{31}	a_{32}	a_{33}	f_3
Value added	v_1	v_2	v_3	
Total output	X_1	X_2	X_3	

From the above table, a_{ij} represents the input-output coefficient, V is the value added, F_i represents final demand for the industries and X_i represents the output of each industries. Thus, the interrelationships represented by

$a_{11} X_1 + a_{12}X_2 + a_{13}X_3 + F_1 = X_1$

$a_{21}X_1 + a_{22}X_2 + a_{23}X_3 + F_2 = X_2$

$a_{31}X_1 + a_{32}X_2 + a_{33}X_3 + F_3 = X3$ 1

Then, the above simultaneous equation represented by matrix notation as

$$\begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} \begin{pmatrix} X_1 \\ X_2 \\ X_3 \end{pmatrix} + \begin{pmatrix} F_1 \\ F_2 \\ F_3 \end{pmatrix} = \begin{pmatrix} X_1 \\ X_2 \\ X_3 \end{pmatrix} \qquad 2$$

In a more general form with n industry and n products, where a_{ij} stands for input i (products of industry i) used in the production of one unit of output of industry j, systems of the above equations written as follows:

$$a_{11}X_1 + a_{12}X_2 + - - - + a_{1n}X_n + Y_1 = X_1$$

$$a_{21}X_1 + a_{21}X_2 + - - - + a_{2n}X_n + Y_2 = X_2$$

$$- \qquad - \qquad - \qquad -$$

$$a_{n1}X_1 + a_{n2}X_2 + - - - + a_{nn}X_n + Y_n = X_n, \qquad 3$$

And in matrix form

$$\begin{pmatrix} a_{11} & a_{12} & - - - & a_{1n} \\ a_{21} & a_{22} & - - - & a_{2n} \\ - & - & & \\ a_{n1} & a_{n2} & - - - & a_{nn} \end{pmatrix} \begin{pmatrix} X_1 \\ X_2 \\ - \\ X_n \end{pmatrix} + \begin{pmatrix} Y_1 \\ Y_2 \\ - \\ Y_n \end{pmatrix} = \begin{pmatrix} X_1 \\ X_2 \\ - \\ X_n \end{pmatrix} \qquad 4$$

The computation of the coefficient matrix described in the following mathematical form:

$a_{ij} = F_{ij}/X_j$ where F_{ij} stands for an element of the flow table as described in a square box of table 2. 1.

Equation 4 usually written in matrix form, as

$$AX + Y = X \qquad 5$$

Relationship like equation 5 is the basic input-output system of equations. Matrix A is called the input-output coefficient matrix,

vector X is the vector of output and vector Y is the vector of net final demand .The dimension (size) of matrix A is constrained only by the statistical information on inputs and outputs available to statisticians since some countries have constructed input-output tables of up to almost 500 industries.

2.1.2. The inverse matrix[4]

2.1.2.1. Solution of an input-output model

Equations in the form of equation 5 are much more suitable to model building or analysis. If the values of the coefficients and of net final demand are known, then it is possible to solve this set of simultaneous equations in order to find the level of output of various industries necessary to satisfy the specified level of net final demand.

Mathematically, the vector of output X in the system of equation five solved as follows:

$$AX + Y = X \quad (6)$$

$$X-AX=Y \quad (7)$$

$$(I-A)X=Y \quad (8)$$

$$X=(I-A)^{-1}Y \quad (9)$$

In equation (9), I stand for the identity matrix, which is a square matrix where all the diagonal elements are equal to 1 and all other elements are equal to zero. This equation is very important part in balancing the unbalanced input output table given with intermediate inputs; value

[4] For the detail, refer Handbook of Input-output table compilation & analysis.

added; import; taxes on goods and services as well as **factor demand**[5] of producing sectors of the economy.

2.1.3. Theoretical Review of Social Accounting Matrix (SAM)

SAM as a particular method of accounting for economic activity dates back to a number of different sources, beginning with F.Quesnay's[1] "tableau èconomique" (18th century). Sir Richard Stone initiated the development of the SAM framework with his 1954 article "Input-Output and the social Accounts," working on it for over roughly four decades.

To know more about Social Accounting Matrix (SAM) has mainly happened around three decades ago as it extensively used as a tool for policy analysis. As to mention the major once, Pyatt and Round (1977; 1979; 1985), Pyatt (1985, 1988, 1991a, 1991b), King (1985), Thorbeck (1985), James and Khan (1993), and Iqbal (1990) etc all delivered an interesting introduction to SAM and their applications.

Social Accounting Matrixes, which developed in the mid-1970s, tried to provide an information system that used to analyze employment opportunities and income distribution (Pyatt and Thorbecke, 19776). And also it was constructed to evaluate economic policies in developing countries initially but latter on are also used in developed countries as an instrument for analyzing fiscal, trade and other policies which is an extension of the input output model developed by Wassily Leontief in the 1930s to include to the structure of production, data on income distribution.

[5] It includes household consumption, government expenditure, investment and export.

According to Taylor (1985): SAM is **as a tabular presentation of the accounting identities; stating that incomings must be equal to outgoings or all sectors of the economy."**

Hayden and Round (1987) tried to justify the way to approach the construction of SAM as : " **SAMs ought not to be narrowly judged, or even viewed, in the context of a particular branch of methodology but rather than in the wider perspective of representing data in a more informative and useful way than statistical practices currently permit".**

The most famous scholars on SAM Pyatt and Round (1988) argued about its importance as "a SAM informs the economic policy debate and should not be seen as a **'once and for all effort.' This is because underlying each macro-economic model, there is by assumption a SAM. They suggest that the coefficients of its rows and columns, and consistency of the same are essential to testing the validity of macro-economic models."**

When we come to king (1988): He tries to stress the concern of a SAM as, "**SAM** has two main objectives: **First, organizing information about the economic and social structure of a country over a period of time. Second, providing statistical basis for the creation of a plausible model which capable of presenting a static image of the economy, and along with stimulating the effects of policy interventions in the economy."**

Huseyin SEN. (1990) pointed SAM as, "Social Accounting Matrix (SAM) is technique related to national income accounting providing a conceptual basis for examining both growth and distributional issues within a single analytical framework in an economy. It can be seen as a means of

presenting in a single matrix the interrelation ship between production, income, consumption and capital accumulation."

He defined SAM as "**Social Accounting Matrix is simply defined as a single entry accounting system where by each macroeconomic account is represented by a column for outgoings and a row for incoming. It must be, in a SAM, accounted for by total outgoing, the total of rows and columns must be equal for a given account.**"

SEN also explained how to compile SAM and the deference between it and input output table as "the data source for a SAM come from input-output tables, national income statistics, and household income and expenditure statistics. Therefore, a SAM is broader than an input-output table and typically national account, showing more detail about all kinds of transactions within an economy. However, an input output table records economic transactions alone irrespective of the social background of the transactors ".

Chowdhury and Kirkpatrick (1994) stated, "SAM, on the contrary to the national accounts attempts to classify various institutions to their socio-economic backgrounds instead of their economic or functional activities".

When we come to Jeffery I Round (2003), who elaborated SAM more extensively stated that SAM is a comprehensive, flexible, and disaggregated framework, which elaborates and articulates the generation of income by activities of production and the distribution and redistribution of income between social and institutional groups. A principal objective of compiling a SAM is, therefore, to reflect various interdependencies in the socioeconomic system as a whole by recording,

as comprehensively as is practicable, the actual and imputed transaction and transfers between various agents in the system.

The key distinguishing features of the SAM relative to alternative accounting systems are, first, the system represented by a set of single-entry accounts; secondly, it places relatively more importance on factor, household and institutional dimensions; thirdly, the framework is complete and comprehensive.

2.1.4. Definition of Terms

A SAM can be defined as a numerical representation of the economic cycle with emphasis on distributive aspects.

According to Round, "A Social Accounting Matrix is simply defined as single entry accounting systems were by a column for outgoings and a row for incomings". It represented in the form of a square matrix with rows and columns, which brings together data on production and income generated by different institutional groups and classes, on the one hand and data about expenditure of theses incomes by them on the other.

According to Elisabeth Sadoulet & De Janvry (1995): There are six types of accounts in a SAM: the activities, commodities, and factors (labor and capital); the current accounts of the domestic institutions; divided into households, firms, and the government; the capital; and the rest of the world.

- **Activities/production:** accounts used to buy raw materials and intermediate goods and hire factor services to produce commodities. In the activity row, goods and non-factor services (value at producer prices) produced for sale in the commodity

market and for home consumption. Thus, the supply of factors to productive activities (in the column) includes factors used in the production for home consumption.

- **Commodities:** supplied in the column (to the commodity market) by activities in the form of marketed production at producer's prices and from the rest of the world in the form of goods and non-factor services. Note that home consumption does not enter the commodities column /row. Thus, commodities only include goods that sold in the market.

- **Factors**: typically include labor, capital and land. Total payments to factors from productive activities (in the row) comprise value added at factor cost (including imputed payments to factors producing goods for home consumption), whereas the supplies of factor inputs enter in the activity column. Factor income is distributed (in the column) as gross profit, wages and factor taxes.

- **Enterprises:** formal enterprises earn profit and receive subsidies (in the row). This income is distributed (in the column) to households, withholds as retained earnings on paid as taxes. Formal enterprises may be public or private.

- **Households**: households attempt to capture the characteristics of different analytically useful socio-economic groups of the population. Households, differ principally in terms of factor endowments owned and consumption patterns. Total income (in the row) consists of wages, including income from informal enterprises, distributed profits from formal enterprises, social

security payments, and net transfers by workers from abroad. Income is allocated (in the column) to home consumption, consumption of marketed production, income taxes and household savings.

- **Recurrent government**: The row includes all receipts by government for recurrent uses and includes taxes levied on the various accounts in the economy such as indirect taxes, corporate taxes, income taxes and trade taxes as well as transfers from the rest of the world in the form of grants. These taxes spent on government expenditures on goods and services, transfers to households and enterprises, as well as government savings represented by the recurrent government column.

- **Government Investment**: All outlays paid for investment goods by government funds are located in the intersection between government investment and commodities.

- **Saving**: The column gives the total investment expenditure in the economy, comprising private sector investment in the intersection with commodities, and the government investment row.

- **Rest of world**: balance between foreign exchange receipts (in the column) and imports of goods and non-factor services from the rest of the world (in the row).

The net capital inflow captures in principle the sum of balance of payments entries not appearing elsewhere in the row or column.

Ferri and Uriel, 2000 stated, "A Social Accounting Matrix (SAM) is a data base that represents, consistently and in a matrix format, all flows of goods, services, and income among all agents in an economy during a given reference period".

In regional case, there have been many attempts to identify, as well as to solve the special problems of constructing Social Accounting Matrix. Among different scholars, Graham Pyatt and Jeffery I. Round (1977) tried to clarify the way to solve such problems of SAM as: "To the extent that only a single region is involved whether it is part of nations (a sub national region) or a group of nations (supranational region), the conceptual problems are not very different from those arising at the national level".

This is not to understate the practical problems are often severe and derive largely from the fact that regions do not enjoy the statistical advantages that are by –products of the existence of well-defined national boundaries, such as customs controls or currency areas. The point is rather that a multiregional system poses a different range of problems, and these extend beyond those normally encountered for a single regional system.

When we come to Steven J. and William A.DE (1988): They stated that distinguishing regions within a SAM might enhance both its realism ("homogeneity") and its usefulness (study of inequality between regions).

However, it will certainly mean a manifold increase of the workload as well. Particularly, interregional linkages are difficult to trace since statistical sources are usually absent. An intermediate solution is to

distinguish several regions were classifying the most important variable in a (nationwide) SAM.

According to Fannin (2000): SAMs as regional analysis tool developed over twenty years ago, which can provide both a descriptive and prescriptive analysis of regional economy.

And recently, Louise Killen (2003) try to see how regional SAM can be compiled "based on an econometric analyses of various sectors the economy through the construction of matrix, and they allow for the posing of specific policy questions about the economy through the development of "Policy Scenarios". They offer a useful tool to regional policy analysts but are limited in terms of the enormous data requirements and are most effective if integrated into a system of comprehensive regional Policy.

2.2. Empirical literature Review

Among the first SAMs constructed was that for Sri Lanka, which is a country with a low Average income per capital, but an unusually equitable distribution of income and high standards in meeting "basic need". Its need for more rapid growth of income and reduction of unemployment implied structural change; it also implied better understanding of the existing economic structure.

In the1st place, Sri Lanka SAM made a clear distinction between factor income and non-factor income that arises from the redistributive process within the economy. Secondly, the classification of factors was entirely divorced from national classifications.

The Sri Lanka exercise serve to show what has been achieved with relatively limited source data, intensive effort by a deducted team, and considerable local expertise on the economy in question.

The Sri Lanka SAM turned out to be a compromise between the desires to produce a matrix with sufficient detail to meet a range of analytical and modeling objectives while not stretching beyond what is credible given the relative paucity information available.

Access to some results from a household survey (Sri Lanka socio – economic survey, 1969 -1970) was crucial of course but in this study, it is interesting to note that no recent input-output table was available.

A much more ambitious SAM-at the time we thought it would be the definitive study was the Malaysian SAM, also compiled for the year a 1970 (Chandler et al, 1980). This also benefited from the availability of a major household survey (Malaysia household Expenditure survey 1993, supplemented by the Malaysia post –Enumeration survey 1970) but in this case, there was also a very detailed set of commodity balances. Amongst the most innovative features of this study was to work with quite detailed factorial and household classifications from which subsets chosen for eventual compilation of the SAM.

At around the same time Downey and Keuning et al (1982) were assembling a similarly detailed SAM for Indonesia again, based on very good household survey and commodity balance data.

A Social Accounting matrix for Pakistan (1989-90): With the input-output industry, classifications condensed into three main production accounts

namely agriculture, industry and other sectors. Also includes two factors of production (labor and capital), five economic institutions (households, non –financial firms, financial firms, government, rest of the world) and one aggregate capital accumulation account.

It presents in summarized but comprehensive picture of the whole economy by showing the interrelationship among different aspects of economic transactions in production, consumption, and investment.

This matrix does not provide a disaggregation of both households sector by types of income nor does it show disaggregated consumption patterns.

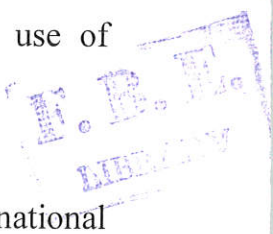
The SAM for Costa Rica in 1997 (SAM97) was based on information contained in the system of National Accounts.

The work of constructing the SAM for Costa Rica began with a Macro SAM, which reflects, panoramically in a matrix, aggregated data of the economy. It includes five types of accounts: production; supply and use of goods and services; income distribution; use of income; capital transaction with the rest of the world.

After the authors have constructed the Macro SAM for the base year for 1997, they created the expanded version of the SAM by disaggregating each module of the Macro SAM, maintaining the macro economic consistency and cross- tabulating every account. In this study's fully disaggregated SAM, goods and activities divided into 41 major activities. The matrix focuses on the major groups of traditional export sectors that have played a key role in Costa Rica's economic growth.

The SAM for Portugal study the effects of changes in the receipts and expenditure of the different government sub sectors on the economy as a whole, as well as on the government's budget balance in 1998.
In this SAM modeling with transposed SAMs, a test on the veracity of the results and an analysis of government flows, which never seen treated before in any SAM.

The 1994 and 1995 Mozambican SAM includes the aggregate Marco-SAM (called MACSAM), and the disaggregated version is MOZAM With 13 agricultural and two agricultural processing activities; 40 commodities; three factors of production, two households (urban and rural); government expenditure (recurrent and investment). MOZAM includes a number of innovative features, partly reflected in household demand, where a distinction is made between home consumption of own production and private consumption of marketed commodities. Procedures used to balance MACSAM and MOZAM are the use of maximum entropy methods to estimate the SAMs.



In the case of Tanzanian, SAM is complied to address reducing national poverty i.e., able to address questions related to poverty and inequality. An attempt to reflect the specific structure of the Tanzanian economy, the SAM's accounts disaggregated across various activities, commodities, production, factors and households. The project also developed a framework that would all the easy updating SAM's to alternative years. The process of constructing a SAM that begins with compilation a prior SAM represents the first attempt to place the available data into a SAM framework. A cross entropy approach to SAM estimation used for the balancing process leading from unbalanced prior to the balanced final SAM. The Micro SAM is a more detailed representation flows in the

Macro SAM where there are 43 production activities and pricing 43 commodities.

The 1994 SAM for the Catalan economy analyzed the process of income distribution among the agents in a regional economy. One important finding was there are significant differences in the way some agents affect the relative status of others.

In this research, the basic findings are that injections of income to activities mostly benefit the relative income of the richest active households. Where as, exogenous injection of income to government' mostly benefit the relative income of inactive households, which are mainly those of pensioners. The objective of the research is sets out the multiplier method and the context of relative income determination.

The first type of SAM construction for Africa is that of Botswana (1974/75 United Kingdom, Ministry of Overseas Development, 1977) which is based on the flow funds, i.e., how to introduce financial transaction into a SAM. It differs from that of Sri Lanka by not considering indirect taxes separately but included with the central government; and considering the financial account with one entry each in the column and the row. Institutions may buy or sell existing physical assets, particularly land and buildings. They also lend or borrow, there by creating financial assets or liabilities. Thus, the essence of financial account in Botswana SAM is to address theses facts.

Ethiopian experts from MEDAC 1994 and food studies group of the University of Oxford built in 1987 SAM as a basis of Computable for General Equilibrium modeling analysis of the grain marketing policy. The

Macro SAM designed with 61 by 61 matrixes, and comprised 25 production activities, 26 commodities, 4 factors, and 6 institutions. The main shortcomings of the study are no separate account given to coffee, as it is the main sources of foreign income to the country; and no separate account for enterprises was considered during that time as it mostly dominated by state ownership.

The other SAM that is more detail than the former one is in 1999/2000 under the World Bank supervision was a 40 by 40 matrix. And contains an account each for 15 production activities, 4 factors of production, 8 commodities, transactions costs 8 institutions, public investment, saving /investments of institutions other than the government, food aid, and the rest of the world (net of food aid). Based on this, it captures the diver's production activities and the interdependencies among the various sectors and institutions that characterize the Ethiopian economy.

The two main objectives of the study are to asses the reforms implemented so far have changed the economy and evaluate alternative government policy intervention to facilitate reasonable selections in the context of a medium to long –term development strategy.

The other empirical experience of a regional SAM is that of Border, Midland and Westerns (BMW) region of Ireland represents the first attempt to build a regional SAM in Ireland .The initial construction of the model focused on identification of a policy scenario, training and initial dissemination. It outlined the main features of SAM, their potential uses and limitations, the involvements of community actors and the development of policy scenarios. It is a partially conducted in the region

so it becomes more difficult to assess interregional trade flows and fully comprehend the BMW economy in relation to the rest of the country.

In the case of the 1970 aggregate regional accounts of Malaysia in a SAM framework comprises three principal blocks. One block related to East Malaysia, the second to West Malaysia, and the third to the Rest of the World. An important feature of the regional SAM is the distinction that made between functional flows and geographical (interregional) flows.

In case Somali Region SAM which is the first one for Ethiopia , basis on the outbreak of rift valley Fever in East Africa, which has led to an export ban by Saudi Arabia and the Gulf countries an evaluation of the case of Ethiopia. The first type the costs of the ban on Ethiopian's main exporting region (Somali) and their distribution among different types of households, producers and traders conducted using CGE model.

The complete SAM has 40 accounts: 11 activities, 7 commodities, and 3 transaction cost accounts, 2 factor accounts (labor and capital), 12 households, 2 tax accounts, government, ROW and Saving-Investment accounts. This SAM provided the database for the empirical implementation of a general equilibrium model to analyze the impact of the ban on export from the Somali region of Ethiopia.

Since the information collected from different sources does not comply with the SAM requirement of balanced rows and columns, the researchers balanced the SAM using non- linear programming developed by Zenios, Drud and Nulvey (1996).

In their findings, the authors showed how a difficult task is it to given the informal nature of the region's economy and in the absence of official

records. On the other hand, the authors had taken the advantage of the regions a very simple nature of agricultural economy, which allowed them to model its core structure, and approximately estimates of the costs of the ban on export. According to the research findings, GDP reduced by 36 percent and around 50 percent losses in value added among the poor and better off producers due to the ban as compared to the normal years.

The main drawback is that it never shows the ban on the illegal trade activities of the region during the same period among neighboring countries particularly importation of second hand wears, electronic materials and the exportation of agricultural products like live animals and specially the main cash crop Chat that are the main backbone of the region's economy.

CHAPTER THREE

3. Methodology

3.1. The data

The data collected for the research is based on secondary data. It collected from: different government institutions; official documents found in the city; different annual surveys and other statistical reports from CSA; Health bureau; Ethiopian Investment Agency; Revenue Agency; Commercial Nominees; Federal Pension Fund Authority ; Office of Urban Agriculture; ministry of Trade and industry; and Custom Authority.

3.2. Choice of the base Year

The year 2004, selected as a base year under this study. First, because it is the most recent year after the city under took revised charter of its own where a Mayor and City Council, which got the right through proclamation on July 2003, will govern the administrative city.

Secondly, 2004 can be certainly be considered as a normal year than any previous years as the city officially started its activity under the revised charter that gives the city a new arrangements of ten sub-cities and 99 Kebeles which governed by its own bounds. As the major objectives are maintaining good governance, enlarging the role o f the city, creating favorable conditions of living, making it a center of Ethiopian nations, bringing about the city's speedy of investment and research and making it a center of commerce and industry of the city.

Thirdly, the city has registered a remarkable performance in some aspect like education, health, initiation of good governance and "economic growth" as compared to the previous years. Finally, the city gross Domestic Production estimation (july1996-June2004) compiled in a well-structured manner for the first time in the aforementioned year.

There are two methodologies used to construct the Addis Ababa's SAM; viz. an input-out put table, which is the fundamental basis for balancing the SAM; and data collected from different sources.

3.3. Input -output table construction method[6]

In constructing the input-output table for Addis Ababa, the necessary information's being required are the inputs utilized by different sectors; the outputs for supply; and final demands for the output of different sectors in the economy.

An Input-output (I/O) analysis; as a theoretical framework and an applied economic tool in a market economy, was developed by Wassily Leontief with the construction of the 1st input-output tables for the United States for the years 1919 and 1929 which published in 1936.

The fundamental contribution of input-output in economics is the transformation of Francois Queensway's Tableau Economique descriptive way showing sales and purchase relationships between different producers and consumers in an economy into an analytical framework, which facilitates economic projections and analyses. It assumes that the inputs used in producing a product related to the industry output by a linear and

[6] See the theoretical details on methodology from Indian SAM and Input output table construction 1978-98.

fixed coefficient production function at least in the short run. It focuses on the interrelationships between industries in an economy with respect to the production and uses of their products and the products imported from abroad.

Since the input-output table presented in value terms, supply and demand for every sector are also balanced. Thus, there are three types of pricing systems to address the problem of balancing the supply and demand conditions of constructing the table in money values. These are

i. Basic Prices: the prices actually received by the producers of commodities and are inclusive of only the cost of material inputs and factor cost (i.e. labor and capital). The construction of the table at basic price needs a table of distributive margins i.e. trade, transport and indirect taxes. Under this pricing system, the marketing cost will vary only with the input structure of the sector, which is generally more stable than the output structure. Thus, coefficient most likely are stable than the remaining two pricing systems. In addition, the value of output is inline with the physical output as it excludes different components of margins.

ii. Producer's prices: the prices paid at the site of production / price of output fixed by producers. Its value is the sum of indirect taxes and basic prices.

iii. Purchasers' Prices: The prices that actually paid by the purchasers. Its value obtained by adding trade and transport margins to the producers' prices. As the data on input and various component of final demand are available at purchasers'

prices and as a result, it is suitable to construct the table at purchasers' prices.

The other important thing in the preparation of an input-output table is dividing the whole economy into number sectors. Thus, a sector can be either a commodity or a set of commodities altogether. The process of consolidating or arranging commodities into sectors Known as the aggregation of commodities.

In Addis Ababa context; the method of constructing an input-output table for the purpose of balancing the SAM is however; based on purchaser average retail prices of the sector wise value of outputs; commodities consumed as inputs; the estimation of trade, transport margins and the indirect taxes; and different parts of final demand are given in the following sub- section.[7]

3.3.1 Production sectors in the economy

3.3.1.1. Agriculture sub -sector

In this respect, the farm activities of the peasants require the inputs like seeds, fertilizers, herbicides, and in addition private enterprise need electricity and petroleum products. While the livestock sub-sector needs different inputs such as animal feeds, vaccination and so on. Regarding the poultry sub-sector poultry feeds, eggs for hatching and vaccination. In the case of beekeeping, no intermediate is considered.

[7] To derive the intermediate input consumption among agriculture, industry and service sector (i.e. linkages), and the proportional value of Ethiopian SAM input -output is taken indirectly by making indexed value of it.

3.3.1.2. Industry sub-sector

When we come to the manufacturing industry, the CSA's different surveys result give extensive data about inputs, outputs and revenues in the transaction process, which are very important to compile the input – output table.

3.3.1.3. Tertiary sub-sector

In this regard, the main parts of the sector includes transport, warehouses, communication, wholesale and retail trade[8], hotels, restaurant, bank, insurance, ownership of dwellings, education, health, other services and public administration for both at regional as well as at federal level. The value added for these sub-sectors are the same as those estimates for the RGDP.

3.3.2. Final Demand

The various parts of final demand for the input-output table derived are as follows:

I. The government consumption data's are taken directly from annual budget allocation-expenditure report documents of the regional and federal government.

II. Household final consumption expenditure estimate directly obtained from BOFED regional income account estimate. In Addis Ababa case, the column related to private final consumption expenditure including that of the non-profit institutions serving the households.

[8] Data taken from CSA and estimated based on the regions GRDP valuation of value added for the specified period.

III. Gross fixed capital formation for the city with respect to government, household and enterprise level directly taken from the regional income account estimation.

IV. The import and export, which include merchandise trade, and, export by resident industries, and agricultural goods. All the mentioned items dada obtained from Custom Authority based on trade and investment licenses of the business community registered in Addis Ababa.

The import, which include merchandise trade, transport and communication, insurance, import by resident industries, and investment capital goods. All the mentioned items dada obtained from Custom Authority based on trade and investment licenses of the business community registered in Addis Ababa.

The value of indirect taxes for each sub –sector is also compiled in the regional income account and directly taken for the compilation of the input-output table.

Table3.3.1.Structure of Input-output Matrix for Addis Ababa, 2004

Expenditures→ Receipts↓	Sectors			Sub-Total	Final demand				Total
	Ag.	Ind.	Services		Cons.	Inv.	Gov.Srvice	Export	
Agriculture									
Industry									
Service									
Sub-total.									
Value added labor									
Value added capital									
Indirect tax									
Imports									
Total									

Table 3.3.2. Input-output Matrix for Addis Ababa, 2004 (in millions of Birr)

Expenditures→ Receipts↓	Sectors			Sub-Total	Final demand				Total
	Agr.	Ind.	Service		Con.	Inv.	Gov.	Export	
Agriculture	4137	1725	7485	13347	82	7	0	3	13438
Industry	4643	7648	1055	13347	1187	2368	11	1726	18637
Service	4566	3974	4806	13347	6288	8965	550	1	29151
Sub-total	13347	13347	13347	40040	7557	11340	561	1730	61227
Value added labor	47	594	6459	7099					
Value added capital	35	3374	4681	8089					
Indirect taxes	0	46	192	238					
Imports	10	1,278	4,473	5761					
Total	13438	18637	29151	61227					

3.4. SAM Construction Method

In this section, we dealt with the methodology and the data sources used for division of gross value added into wage and non-wage income, Private Final Consumption Expenditure (PFCE) and personal income by economic categories of households and other relevant accounts for the SAM. Detailed micro data basis for Addis Ababa SAM given in the annex.

3.4.1 Division of production/ output, intermediate inputs and Gross value added into Wages and Non–wage income.

The division of the production/output and gross value added into wages and non-wage income done for six sectors of the economy for 2004. The sources of data and method of estimation used given below by broad sectors of the economy.

3.4.1.1 Agriculture and Allied Activities

The estimation of the output/product as well as value added is based on the data collected from UAO of Addis Ababa, and retail/consumer and producers the prices of CSA, combined for formal and informal components of agriculture sector. It includes crop production; forestry; beekeeping; livestock; and animal husbandry services with the breakdown of the net

value added (NVA) into compensation to employees (CE) and operating surplus / mixed income. Wage income due to family labor is based on the study made by MOFED conversion factor for Ethiopia (1998), accordingly the ratio of factor for labor assigned is 60% of the value of agriculture output. While the remaining value after deducting for intermediate inputs is assigned to capital particularly for the peasant farmers and thus added to the actual wage income to arrive at the total income generated from labor. For the case of Addis Ababa, land has nil value, as it is the property of the state. According to BOFED the production method is employed to estimate value added from the above-mentioned sub -sectors i.e., value of output less intermediate inputs.

According to the BOFED, detailed method of estimation for production in each sub-sector given below.

- When we come to the crop sub sector of its different component, the productions of different parts is obtained by the total area cultivated and yield per hectare. And the production method is employed to arrive at the value added, i.e. output less cost of intermediate inputs.(which includes fertilizer, pesticides, herbicides, and improved seeds).In this respect, production is imputed out of wastage and quantity of local seeds applied as an input in each harvesting period.

- In the case of livestock sub sector which comprises breading and rearing of cattle sheep, goat, equine; poultry and beekeeping; their outputs and by products like meat, milk (with its products); egg; skin/hides; and honey with wax.

The amount of raw milk produced both from indigenous and crossbreed was estimated by multiplying the number of cows in milk yield and average

lactation period for each breed separately. The gross value of meat, hides & skin (and only meat in the case of poultry) computed by multiplying the total number of animal is slathered by weighted average producer's price of live animals.

Valuation of gross value of dung cake obtained trough multiplying the estimated quantity of dung in each accounting period by the corresponding price of dung cake.

Valuation of egg produced both from indigenous and cross breeds estimated by multiplying the number of laying hens by average egg yield.

Gross value of output from changes in stock computed by multiplying the change in the number of livestock & poultry with their respective weight average producers' price of live animals.

Total amount of honey production for traditional and modern once is obtained through multiplying the average production of honey per hive.

Finally, the gross value outputs from honey & wax production computed by multiplying the estimated quantity with their respective producer's prices.

- Regarding the forestry sub-sector, type and number of carriers in the collection and supply of the different fuel wood into the city was compiled with their corresponding size of bundle they carry (in kilogram) to estimate total production around and within the surroundings of the city. In addition, to estimate the total production, per capita consumption for fuel wood 139kg/ annum and charcoal with per capita consumption of 76kg/annum is used together with the corresponding population size. Then, it has been multiplied by the proportion of fuel wood supply

generated within the boundary of the city i.e. 2/3 of the total supply. whereas, the cost of intermediate input has zero value as fuel wood is collected for free by individuals and thus only the cost of sacks for charcoal and roots has been assigned 25% of their prices .

3.4.1.2 Industrial sector

The output of industrial sub-sector comprises the output of Large and Medium scale[9], Small scale and Cottage/Handicraft manufacturing; Mining; Electricity and Water; construction of residential and non –residential activities of the informal (except for large and medium scale manufacturing industries) and formal sectors. For both formal and informal sectors, the gross value added is based on two-digit level of classification for 2002-2004 as given in the CSA classified into wage and non-wage income. For the informal industrial sector, the 2002 estimates of GVA, emoluments, number of hired and total workers are taken by estimating for 2004 based on the regional GDP estimation.

Electricity and Water Supply

The source of data for the electricity sub-sector is the BOFED regional GDP estimate of Addis Ababa. It covers the activities of generating, transmission of electric energy to households, industrial and for commercial purpose from either hydro, diesel, thermal or any other sources that mainly distributed by only EEPCO. In the case of Water supply also, the source of the data is the BOFED regional GDP estimate of Addis Ababa. It covers the collection,

[9] Based on CSA data it consists of both private and public enterprises that have formal/legal identity.

storage, purification and distribution of water to households, industries and commercial purposes as the only authorized institution AWSA.

Residential building

Residential building covers all urban dwellings constructed in the year. The detailed data and method of estimation directly taken form BOFED. Accordingly, the gross value of production from this sub-sector activity arrived at as product of the number of dwelling built in the year and the average construction cost per dwelling. The housing stocks available in the city classified into five major calcifications:

- Corrugated iron with mud and wood wall have replacement rate of 30years; housing stock of 23%; the repair & maintenance costs of 8.33% of the gross output.
- Corrugated iron with block/ Bricks wall has replacement rate of 40years, housing stock of 67%, and the repair & maintenance costs of 8.33% of the gross output.
- Corrugated iron with stone and cement /mud wall have replacement rate of 30years, housing stock of 10%, the repair & maintenance cost of 8.33% of the gross output.
- Corrugated iron with thatched/other walls has replacement rate of 25years, no housing stock, the repair & maintenance cost 5% of the gross output.
- Thatched roof with thatched and wood wall have replacement rate of 25years, no housing stock, the repair & maintenance cost of 5% of the gross output.

Since there is no detailed data available on quantity and types of intermediate inputs used for construction, the gross value added for this

sub-sector has been assigned by the CSA survey report 43% of the total gross output.

Non-residential building

The non-residential building includes all new building constructed for the purposes of offices, warehouses factory, farm hotels and restaurant, cultural and recreation purposes, garages, schools, clinics religions, etc. The detailed data and method of estimation of the gross output as well as value added directly taken form BOFED. The gross value added at current price obtained from the annual regional and federal capital budget implementation. Because all costs incurred, either for new construction or for maintenance purposes by the region & federal government regularly recorded, one cannot need to incorporate repair and maintenance work for in the public construction compiling the GRDP.

Finally value added ratio of 37% and 20% was applied for the private and government construction activities respectively.

Other construction activities

It includes activities such as new roads, airports, railways, streets, sewers, bridges, sub-ways, parking areas, canals, water wells, waterpower projects, dams, lakes, athletics fields, electricity transmission line, telecommunication lines etc. The detailed data and method of estimation output/value added directly taken form BOFED.

3.4.1.3 Service sector

Trade, Hotel and Restaurant

For Trade, Hotel and Restaurant the data source and method of estimation for output/value added are directly applied from BOFED, which is complied for RGDP estimate that includes wholesale retail trades regarding trade; lodging places, cafes and others, catering places for hotel and restaurant sub-sectors. Moreover, the intermediate input value is based on 2002 CSA survey and adjusted based on GRDP values.

Real Estate, Renting and business activities

It includes activities such as Real estate development, renting of machinery and equipment, and other business activities. The detailed data and method of estimation of the gross output as well as value added directly taken form BOFED for the purpose of RGDP estimation of the city.

Ownership Dwelling

This includes houses and buildings for dwelling or living purposes. The detailed data and method of estimation of the gross output as well as value added directly taken from BOFED for the purpose of RGDP estimation of the city. Thus, the number of mid-year housing stock multiplied by weighted average annual market rent gives the gross value of output for the year. It also shows that the intermediate input cost of this sub-sector (which is the cost of repair and maintenance only) is about 8% of the gross value of output

according to the 1995/96 household Income, Consumption and Expenditure survey.

Transport and Communication

In Addis Ababa context, transport sub sector divided into three categories: inland, Air transport, and water transport that takes ocean costal and inland water transport. The data source and method of estimation for output/value added indirectly applied from BOFED for the purpose of RGDP estimation of the city.

Communication

It consists of telecommunication services (i.e. telephone, telegram, and telex, internet services, installing and repairing) and postal services (i.e. sales of stamps, postage mail, box renting, money order as well as sending goods and services). The detailed data and method of estimation directly taken form BOFED for the purpose of RGDP estimation of the city.

Banks and Insurance[10]

Under these sub- sectors, the BOFED estimation of output/ value added is directly applied which includes banks, insurances, pension funds, micro finances and other traditional micro finance institutes (i.e. Equib[1] and Idir[2]).In this sub- sectors both private and public institutions were included.

[10] The estimation of intermediate inputs of the sub-sectors is taken from there respective annual reports and the share of Addis Ababa is derived through the proportional value added estimation of GRDP values. And particularly for insurance average values are taken for five out of nine due to unavailability of data.

Business Activities

This sub-sector includes recreation and other entertainment services; sport and other recreation services; and business services (i.e. consultancy services, legal services auditing, information and communication services, and Rental and lasting of machinery and equipment except operators). The detailed data and method of estimation of the gross output as well as value added directly taken form BOFED for the purpose of RGDP estimation of the city.

Government Taxes (Direct and Indirect)

Both Direct tax and Indirect tax income information obtained from BOFED annual income- expenditure performance report of the budget year. Direct tax consists of income from wages and salaries; rental; profit to individuals; profit to corporation; dividend and chance winnings; capital gains; agricultural; royalties; with holding tax on import; and Chat. In the case of Indirect tax, VAT, which imposed on locally manufactured goods and services sales; and turns over tax taxes imposed on non-VAT taxpayers, are included.

Capital Account

Capital account shows the macro balance of the region /city between saving (which consists of household, enterprise and government savings) and investments which comprises domestic private and public; government; and foreign.

3.5. The fundamental method of Balances in the Macro SAM

Table 1 presents a simple macro SAM-"macro" because it includes only macro aggregates and excludes intermediate inputs (the input-output table). The SAM is square, entries represent payments from column accounts to row accounts, and the corresponding row and column sums must balance since they represent the double –entry, receipt-expenditure accounts of the various economic actors. For the macro SAM, the row and column balances represent the various macro balances in the national income and product accounts.

Table. 3.5. Macro SAM

	Activities	Commodity	Factors	Households	Gov't	S-I	Rest of World
Activities		D					E
Commodity				C	G	I	
Factors	X						
Households			Y				
Government	T^X						
S-I				S^H	S^G		S^F
Rest of world		M					

Representation of symbols

D: domestic production for sale

E: exports

X: Gross domestic production (GDP at f actor cost)

T^X: indirect taxes

T^H: direct taxes on households

M: imports

Y: factors payments to households

C: consumption

G: government demand

I: investment demand

S^H : household savings

S^G: government savings

S^F: foreign savings

S-I: saving–investment account

3.6. The fundamental equation in the balances of the Macro SAM

This SAM is a condensed way of presenting the national/regional accounts, and exactly sorts out the circular flow from production activities to factor payments to incomes of "institutions", savings-investment and back to demand for commodities.

$GDP=X+T^X = D+E$ GDP at market prices equals the value of production +indirect tax.

$D+ M = C+ G +I$ the total supply/absorption in an economy equals to demand.

$GDP + (M- E) = C+ G+I$ gross national product equals total consumption expenditure.

$Y = X =$GDP (factor cost) value added/factor payment equals GDP at FC.

$Y = C + T^H +S^H$ value added/factor payment for household equals consumption, indirect tax and saving

$T^X + T^H = G + S^G$	indirect and direct tax equals gob's consumption and saving
$I = S^H + S^G + S^F$	investment equals savings of household, gev't and foreign
$M = E + SF$	import equals export and foreign savings.

3.7. Structure of Macro SAM for Addis Ababa 2004

As already defined, a Social Accounting Matrix (SAM) is a comprehensive, economy-wide data framework, typically representing the economy of a country. More technically, a SAM is a square matrix in which each account represented by a row and a column. Each cell shows the payment from the account of its column to the accounts of is row- the incomes of an account appear along its row, its expenditures along its column. The underlying principle of double –entry accounting requires that, for each account in the SAM, total revenue (row total) equals total expenditure (column).

Based on the above argument, the detail of the structure of Macro SAM for Addis Ababa presented below:

1. Activities

Activity column entries indicate expenditures incurred during the production process and include purchases of intermediate inputs and payments to the factors of production –including factors used in the production for home consumption (value added at factor cost).It is divided into agriculture ,industry and service sectors.

2. Commodities

Total supply of commodities valued at market prices is taken as domestic marketed production, imports of goods and non- factors services, indirect taxes which includes sales taxes, sure taxes, as well as export taxes and import duties shown in the commodity column. While in the commodity row, the total demand for marketed commodities and includes intermediate demand of activities, household and government consumption, investment demand of government and private sector, and export demand of goods and non-factor services. Here, the intersection between the commodity column and the recurrent row gives the indirect taxes paid.

The other column in this category is the rest of the world column that gives the total value of imports of goods and services at CIF values. In this case, the basic argument for the computation of import and export data is for Addis Ababa different from the national total and with the rest of the regions. It is arrived at the registration of import and export license given by the ministry of trade and industry with respect to residential address of the business activity as well as the person who engaged. In this case, also, it will divide into Agriculture, industry and service commodities.

3. Factors

In the context of Addis Ababa, factors include only labor and capital, as land is the property of the state, which has zero value. The total factor income i.e. RGDP at factor cost consisting compensation of employees (wages and salaries) and also operating surplus which takes the value of rent on capital as represented by the receipt of the factor row from the activity column. The

factor account pays rents on capital to enterprises and wages and salaries to households, which represented by the factor column. The factor account may also pay factor taxes to the government and factor payments to the rest of the world account.

4. Enterprises

Enterprises earn profit from capital and labor as well as may receive subsidies from the government in the row account. They will pay taxes to the government, pay wages and salaries to workers, distribute profits to households and the rest of the world, and retain some profits as savings. Enterprises also pay interest on loan on repayment and other transfers to the rest of the world.

5. Households

Household column shows the allocation of total household income among different purpose such as combined own account and marketed consumption, income taxes paid to the government and savings, pension contribution (i.e., pension contribution made by civil servants and public enterprise employees). While the row indicates, total income earned by households, which includes factor incomes from both regional and federal government employees in the city as it already being expended, transfers from government and net from the rest of the world like remittance.

6. Recurrent government

Row indicates all receipts by both regional government for recurrent uses and which includes taxes levied on the various accounts in the economy such as indirect taxes, corporate taxes, income taxes and trade taxes as well as

transfers from the rest of world in the form of grants. Government revenue generated spent on expenditure on goods and services, transfers to households and enterprises, salary and wage payments, pension contribution to permanent staff workers, as well as savings.

7. Government investment

The total outlays made for investment goods by both regional and federal government expenditure in the city where funds are located in the intersection between government investment and commodities.

8. Saving and Investment

Column shows the total investment expenditure, which comprise private sector investment in the intersection with commodities, and government investment in the intersection with the government row.

9. Rest of the world (ROW)

Along the column side, exports of goods and services, foreign loans, grants and other transfers are included. While in the case of row, purchases of imports and receipts of factor payments and net interest payments of enterprises are incorporated. Loans from the ROW on development account lay in the intersection between the ROW column and the savings-investment row.

Table 3.7.1: Structure of the 2004 Macro SAM for Addis Ababa

Expenditure→ Receipts↓		Activity			Commodity			Factors		Households	Enterprises	Recurrent Govt.	Govt Invest.	Investment	Rest of the world	Total
		A	I	S	A	I	A	L	C							
Activity	Agriculture				Marketed production					Home consumed outputs						Activity income (Gross output)
	Industry															
	Service															
Commodity	Agriculture	Intermediate inputs								Private consumption		Govt final recurrent consumption	Govert Ex. on investment	Private investment	Export	Domestic demand
	Industry															
	Service															
Factors	Labor	Value added													Factor income from ROW	Factor income/ VAD at factor cost
	Capital															
Institutions	Households							Factor income to households		Inter-household transfers	Surplus to household	Transfers to households			Transfers to households from ROW	Household income
	Enterprises							Factor income to enterprises				Transfers to enterprises			Transfers to enterprises from ROW	Enterprises income
	Recurrent Government				Sales,surtax import duties			Factor tax		Individual income tax	Corporate tax				Grants & transfers from ROW	Govt recurrent receipts
	Government Investment													Government investment		Govt investment
	Savings									Household saving	Enterprise saving	Gov saving			Foreign saving	Savings
	Rest of the world				Imports			Factor income to ROW		Surplus to ROW		Govt transfers to ROW				Foreign exchange inflow
Total		Activity output			Supply			Factor expenditures		Household expenditures	Enterprise expenditures	Govt expenditures	Govt. investment	Investment	Foreign exchange out flow	

Table 3.7.2: Unbalanced Macro SAM for Addis Ababa 2004(million Birr)

Expenditures→ Receipts↓		Activities			Commodities			Factors		Institutions						TOTAL
		Agri	Ind.	Ser.	Agri.	Industry	Service	Labor	Capital	Enterp.	HH	Recurrent Govt.	Gov.inv.	Saving / Invt.	ROW	
Activities	Agr.				4150.2	1725.0	7484.6				68.1					13,428.0
	Indus.				4643.3	11615.3	1055.5									17,314.0
	Services				4566.3	3973.8	16684.0									25,224.1
Commodities	Agr.	4136.9	1725.0	7484.6							14.0			6.7	2.7	13,369.9
	Indus.	4643.3	7647.8	1055.5							1186.7	7.5	3.0	2367.7	1725.8	18,637.3
	Services	4566.3	3973.8	4806.5							6288.3	737.6	550.1	8965.3	1.2	29,889.1
Factors	Labor	46.6	594.0	6452.7												7,093.3
	Capital	34.8	3373.5	4681.1												8089.5
Institutions	Enter.								8089.5			34.5				8,124.0
	HH							7087.4		195.5	166.4	394.5	88.5		3996.2	11,928.5
	Recurrent govt.			743.7	0.3	45.6	191.8			33.8	602.3				41.5	1,659.1
	Gov't. Invt.										58.7			586.6		645.2
	Saving/ In									4,010.4	3,562.6	484				8,057.1
	Rest of World				9.7	1,277.6	4,473.2	5.9				0.9				5,767.3
TOTAL		13,428.0	17,314.0	25,224.1	13,369.9	18,637.3	29,889.1	7093.3	8089.5	4239.7	8384.5	1659	641.6	11926.3	5767.4	

3.8. The Balancing Process

Data inaccessibility and inconsistency are common problems in most developing countries. And thus Addis is not also exception, the judgment approach method is preferred as a relevant tool than other methods like RAS, Stone-Byron, and cross-entropy methods so as to follow and not to miss special features of the city rather just only to reconcile the row and column some of starting from an unbalanced database. In addition, even if there are so money modern methods of balancing techniques ,they have there own side effects and the happenings of double task of seeing /revising the result with the existing data. The whole process of judgment approach applied based on Jeffery I Round [11]"data reconciliation methods " in balancing Social Accounting matrix for Addis Ababa as follows:

There are three essential steps involved in the judgment approach

Firstly, the initial data were set alongside each other in the accounting framework to take initial stock of the problem.

Secondly, qualitative judgment, which relays on expert local advice and related references, applied on the relative reliability of the alternative estimates.

Finally, after choosing the most reliable estimates, further scaling and adjustment made manually to achieve consistency. Gaps and missing entries usually handled differently form inconsistent estimates.

Sometimes missing entries estimated directly as residuals using the accounting constraints or they eliminated by an aggregation of accounts. The whole process of smoothing data sets into a consistent set of estimates using judgment involves some iteration between the stages.

[11] Refer for the details on Jeffery I Round 2003 discussion paper.

In addition, the proportional value of intermediate inputs among the agriculture, Industry, and service sectors is indirectly applied from " The Structure of the Ethiopian Economy –A SAM –based Characterization[12]", where the problem of data inconsistency exists and how to adjust some parameters estimation.

[12] . See the details on Alemayehu Seyum Taffesse and Tadele Ferede on Ethiopian SAM ,2004

CHAPTER FOUR

4. EMPIRICAL RESULTS

In this section, with the help of the outcome of balanced SAM for Addis Ababa and related satellite tables where the former is derived form, the results of the research finding was investigated accordingly.

4.1. Social Accounting Matrix for Addis Ababa

Table 4.1 below shows the Macro SAM constructed for Addis Ababa in the year 2004. Each of the entries in the SAM discussed in detail below. The notation for the SAM entries is row then column, and the values are in billions of current (2004) Ethiopian Birr.

i. [Factors, Activities]--- 15182.8

The value of gross regional domestic product (GRDP) at factor cost and is being taken from regional accounts with SAM adjustment.

ii. [Commodities, Activities] --- 40039.7

The value of intermediate inputs of each sectors demand, which was determined using the sect oral information in the IO table.

iii. [Taxes, Activities]--- 743.7

The figure refers to payments made by activities to the government (both from municipal and non-municipality non-tax revenue) for items such as administrative fees & charges; sales of public goods & services; government investment income; extraordinary and miscellaneous revenue; and capital revenue.

iv. [Activity, Households]---68.1

The payment from households to activities represents households' consumption of own production. This production measured at producer (or farm-gate) prices. Total household consumption value taken from SAM accounts.

v. [Activities, Commodities]--- 55898.0

Total marketed output is the difference between gross output and the value of own household consumption. Gross output is the sum of intermediate demand, GRDP at Factor cost and activity taxes.

vi. [Taxes, Commodities]--- 237.7

These include specific accounts for activity, income, sales and, factor taxes. The commodity tax entry therefore disaggregated into VAT and other indirect taxes.

vii. [Rest of the world, Commodities]--- 5760.5

Data on merchandise imports obtained from the Custom Authority. Since the merchandised data was measured inclusive of cost, insurance and freight (CIF),it was necessary to reduce the value of transportation and insurance services imported into the city in order to avoid double counting i.e., the importing of these services.

viii. [Commodities, Households]--- 7489.0

This represents the final household demand, i.e. total household consumption spending on marketed goods and services valued at market prices.

ix. [Commodities, Government]--- 1298.1

The value of government spending for a recurrent purpose is directly taken from regional annual expenditure. All of government spending is for the purchase of the government commodity. Thus, the government treated as both a sector producing government services, and a demander of these services.

x. [Commodities, Investment]--- 11339.7

The aggregate value of private investment spending is directly taken from regional accounts estimate and annual investment.

xi. [Commodities, Rest of the world]--- 1729.6

The aggregate value of export to the rest of the world is extracted from Customs authority.

xii. [Households, Factors]--- 7087.4

This value is the sum of all labor and capital value -added generated during production, less any factor taxes and factor payments abroad. Since land is state property, it has zero values.

xiii. [Enterprises, Factors]--- 8089.5

The sum of all non-agricultural capital value-added (or gross operating surplus) is paid to enterprises. It is therefore, assumed that all non-agriculture capital is subjected to direct taxation by the government.

xiv. [Taxes, Factors]---602.3

Factor taxes taken from the Addis Ababa Revenue Agency and include pay -roll levies and direct tax payments made for the government.

xv. [Rest of world, factors]---5.9

Factor remittance from abroad taken directly from regional accounts.

xvi. [households, Enterprises]--- 195.5

Enterprises payments to households treated as the sum of enterprises income less direct taxes and dividend payments to the government.

xvii. [Taxes , Enterprises]--- 33.8

Enterprises direct taxes taken from the Addis Ababa Revenue Agency. It includes items such as on limited companies and prostates, training levies, excess-profit taxes, and estate duties.

xviii. [Households , Government]---486.6

Government transfers to households taken from regional accounts and are decomposed to subsidy payment and pension contribution made by the government as here, considered as investment, which accounted as 92.1 million Birr.

xix. [Government investment , Household]---58.7

Household contribution of pension to the government in the form of future payment and taken from the federal and regional account.

xx. [Households , Rest of world]--- 3996.20

Aggregate household income from the rest of the world treated as a residual between household's income and expenditure. It is known as remittance.

xxi. [Savings , households]--- 3547.5

Household savings reported in the regional accounts.

xxii. [Savings , Government]--- 484

Government savings taken from regional accounts

xxiii. [Saving ,Enterprise] --- 7894.7

Enterprise saving is taken from regional accounts indirectly

xxiv. [Savings , Rest of world]---0.042

Foreign saving or borrowing treated as a residual in the SAM in order to balance total savings with total investment spending.

xxv. [Rest of world, government] --- 0.9

Debt payment account taken from regional accounts.

Table 4.1: A Balanced Macro SAM for Addis Ababa 2004(million Birr)

Expenditures→ Receipts↓		Activities			Commodities			Factors		Institutions						TOTAL
		Agri	Ind.	Ser.	Agri	Industry	Service	Labor	Capital	Enterprises	Households	Recurrent Govt.	Govt. Invt.	Saving/ Invt.	Rest of World	
Activities	Agri				4150	1725	7485				68.1					13,428
	Ind.				4643	11615	1055				0					17,314
	Services				4566	3974	16684				0					25,224
Commodities	Agri	4137	1725	7485							14.0	0	0	7	3	13,370
	Ind.	4643	7648	1055							1186.7	7.5	3.0	2368	1726	18,637
	Services	4566	3974	4806							6288.3	737.6	550.1	8965	1	29,889
Factors	Labor	47	594	6453												7,093
	Capital	35	3374	4681												8,089
Institutions	Enterprises								8089			34.5				8,124
	Households							7087		195	166	394	92		3,996	11,932
	Recurrent govt.			744	0	46	192			34	602				41	1,659
	Govt. Inv.										59			586.6		645
	Saving/Inv									7895	3548	484			0	11,926
	Rest of World				10	1,278	4,473	6	0	0		1				5,767
TOTAL		13,428	17,314	25,224	13,370	18,637	29,889	7,093	8,089	8,124	11,932	1,659	645	11,926	5,767	

4.2. The structure of production and trade

Addis Ababa is mainly a service sector economy with 45.1 % share of the gross output generated within it. The second one is the industrial sector with 30.9% share of the gross output. Finally, the agricultural sector with 24% share of the gross output.

In the case of GDP at factor cost, the lion share goes to again to service sector with 73.3%, for the industry sector 26.2% and for the agricultural sector only 0 .5%. This indicates that Addis Ababa as a capital city has greater advantage in service sector development relative to industrial and agricultural sector.

Turning to international trade, the service sector is the dominant one in consumption of imported goods with 77.6%, 22.2% for industry and 0.2 % is for Agriculture. Where as when it comes to export; the highest share is 99.7% for industry, 0.2% for agriculture and 0.1 % for only for the service sector.

This clearly indicates that the service sector has greater advantage over GDP and value added contribution in the city's economy. However, it lacks competitive advantage in external trade and it is most probably due to the problem of strong industrial local base. However, it rather characterized by small size and large number of petty trade as well as heavily dependent on import transaction trade.

Finally, the same result shows that the service sector has the highest return in the economy in terms of investment, consumption for private and government institutions.

4.3. Poverty analysis in Addis Ababa based on satellite tables.

In this section, the researcher tried to analyze the poverty situation in Addis Ababa with the help of some special tables, which are called satellite tables, as SAM is not actually a model. Thus, to make it consistent with the SAM table constructed in the previous chapter all the data's complied below are derived directly/ indirectly from survey results and official documents used in the construction of SAM for Addis Ababa.

According to Steven J.Keuning et al.[13], a SAM ideally ought to be complemented by satellite accounts, containing:

- A decomposition of most its values into prices (including wage rates, tax rates and so on) and volumes (consumption, employment, etc.),
- Other (non-monetary) socio-economic indicators such as household composition, other demographic data, intake of nutrients, housing situation, health conditions and access to education,
- Stocks underlying the SAM-flows like population (size and educational background),capital stock(land, livestock, industrial capacity and housing),foreign debt, equity ownership and durable goods possession, and
- A re-routing of some of the SAM-flows (e.g. for the study of the incidence of public expenditures these are, wherever possible, allocated to the beneficiaries).

The information in these supplementary tables should then be consistent with the SAM values.

4.3.1. Addis Ababa City Administration 2004 Revenue - expenditure balance in Birr

The city administration is mostly generated through its tax receipts. The most important of these are direct tax and municipality taxes, accounting 36.4% and 30.5% of the total revenue respectively. Government expenditure is relatively higher in recurrent with 46% but for capital budget it is only 42.1% and it only saved 11.9% of its income.

[13] see the details on " Guidelines to the construction of a Social Accounting Matrix"

Table 4.3.1. Revenue-Expenditure Balance in Birr 2004

Revenue	**1,639,508,478**	**Percentage share**
Direct tax	596,683,560	36.4
Indirect tax	106,816,233	6.5
Non-tax revenue	292,192,627	17.8
Capital gain	80,967,329	4.9
Municipality	500,193,870	30.5
Subsidy	20,569,196	1.3
Assistance	42,085,662	2.6
Recurrent Expenditure	**754,206,282**	**46.0**
General service	251,180,008	33.3
Economic service	20,035,702	2.7
Social service	249,297,583	33.1
Municipality	233,692,989	31.0
Capital Expenditure	**690,278,574**	**42.1**
General service	13,120,871	1.9
Economic service	95,208,374	13.8
Social service	25,576,962	3.7
Municipality	556,372,368	80.6
Total Expenditure		46.0
Saving	195,023,622	11.90
Balance	**1,639,508,478**	

Source: Authors' calculation using the annual report of BOFED 2005.

4.3.2. Income Sources across Households

Table 4.3.2. Percentage distribution of income Sources across Households

Income source	%age share
Agriculture labor	0.6
Industry labor	8.3
Service labor	91.0
Rest of world labor	0.1
Agricultural capital	0.4
Industry capital	41.7
Service capital	57.9

Source: Addis Ababa SAM 2004

From the above table, households generate there income from domestic sources mainly from the service with 91.0 %, from industrial sector with

8.3% and 0.6% from agricultural sector. In the case of capital, service accounts 57.9%, industry 41.7%, and the remaining 0.4% for agriculture sector.

4.3.3. Labor force Category

Table 4.3.3. Labor Force by Labor Category (2005)

Age and Gender Category	Educational Category	Number of Workers	% Share of Total Workers
Subsistence labor[14]		117561	14.7
Child labor (10 to 14)		15574	1.9
Female	No formal education	4679	0.6
	Not finished primary education	63857	8.0
	Not finished secondary education	101974	12.8
	Secondary education achieved	106797	13.4
	Preparatory	940	0.1
	Higher/Certificate & above education	21535	2.7
	Total adult female	315356	39.4
Male	No formal education	8460	1.1
	Not finished primary education	29406	3.7
	Not finished secondary education	145471	18.2
	Secondary education achieved	193256	24.2
	Preparatory	368	0.04
	Higher/Certificate & above education	50760	6.3
	Total adult male	427721	53.5
All labor categories		799565	100.0

Source: Authors manipulation based on labor force survey 2005

Labor disaggregated mainly into gender and education as reported in the Labor force survey of 2005. And additionally, considered the child labor category that consist of all working children within the age range of 10 and 14.Adult workers were categorized into female and male, and then further

[14] It consist of own household consumption i.e. peasant farm households and domestic workers working for the household.

breakdown was made based on their highest level of education achieved as stated above.

In this regard, subsistence factor contributed 14.7% of the labor force in the city's economy. When we come to the child labor, it consists of 1.9% of the labor force. Adult workers were also were classified into female and male with a share of 39.4% and 53.5 % labor force respectively. In the context of female and male adult labor force educational achievements, the highest share goes to those who only achieved secondary school. In addition, male workers have the highest share in terms of secondary education and female workers have the highest share in those who have not finished primary education.

4.3.4. Dependency Ratio in Age Structure

High age dependency structure has an effect on the socio –economic development of the city i.e. it increase the burden on the working population.

Table 4.3.4. Dependency ratio on broader age Structure

Age Structure	**Total number of people**	**%age share**
Below 15 yrs	709580	35.19
Above 65yrs	78878	3.91
working age / 15-64 age /	2016542	100

Source: computed based on the CSA population projection

From the above table, the young and old age dependency ratio, i.e. the ratio of those below age 15 and above 65 years of age are 35.2% and 3.9% respectively. This indicates that there are around 35 young and 4 old age dependents for every 100 working age population.

When we come to the existing condition in terms of employment and unemployment, the situation is more sever than the above result.

4.3.5. Employment and Unemployment

Table 4.3.5. Employment and Unemployment condition based on activity status and age category

Broad age category	Economically active population	Activity Status		Unemployment rate
		Employed	Unemployed	
15- 29	568917	357310	211607	37.2
30- 64	479280	375272	104008	21.7
65 +	21859	16345	5514	25.2
Total	1070056	748927	321129	30.0

Source: Extracted and computed from CSA labor force survey of 2005

As indicated above, the total unemployment rate of the city is 30.0 % and out of this, between the ages of 15-29 the unemployment rate of 37.2 % is the most sever one even some argued that at this age category most of the unemployed are students. In the case of age categories of 30-40 unemployment rates of 27%, it is also a great burden to the city's economy, as it already known that this age category is the most active part of any economy. While with respect to that of ages above 65 years, it is common phenomenon particularly in most developing world.

4.3.6. Total population by Employment and Sex

Table 4.3.6. Percentage share of total population by employment & sex

Employment status	% share	
	Male	Female
Government par state	22.6	18.9
Private enterprises.	6.1	4.4
Ngo	1.1	0.7
Domestic	12.2	6.3
Other paid	1.0	0.5
Member of co-operatives.	1.7	6.8
Self	0.4	0.1
Unpaid family workers	0.1	0.1
Employer	10.0	6.4
Apprentice & others	0.4	0.1
Total	55.6	44.3

Source: Authors' calculation from CSA labor force survey 2005

From the above table, the highest share of employment generated from government and its affiliates (i.e. public enterprises) which consist of 22.6% male and 18.9% female. In addition, the other source of employment of interest is domestic workers with 12.3 % male and 6.3% female. While the lowest share of employment generated are self, unpaid family workers and apprentice with 0.4%, 0.1% and 0.4% male, and 0.1%, 0.1% and 0.1% female workers respectively.

4.3.7. Households service facility condition and satisfaction

Table 4.3.7. Households service facility conditions and satisfaction in percentage age

Facility	Distance in km		Service quality change	
	≤ 1km	> 1km	Better	Same/worse
Health				
Hospital	19.6	80.4	46	54
Health Center	25.8	74.2	55	45
Health Post	13.1	86.9	35	65
clinics	41.9	58.7	47	53
Schools				
Primary	46.2	53.8	54	46
Secondary	27.3	72.7	51	49
Transport	64.1	35.9	54	46
Post office	25.3	74.7	44	56
Milling service	68.4	31.6	51	49
Drinking water	91.2	8.8	39	61
Micro-finance	33.2	66.8	41	59
Fire wood	59.8	40.2	-	-

Source: Extracted from CSA Ethiopian welfare monitoring survey 2004

Service facilities of households are very important measure of living conditions in terms of accessibility provided either by the state or by private. From the above table, for a distance greater than 1km households' service quality change are at least better only for health centers, primary and secondary schools, transport, and milling services. However, for the remaining services like hospital, health post, clinics, post office, and drinking water are the worst/Same in service quality change. Here also, the living condition of the society is still lagging behind.

4.3.8. Households dwelling conditions

Table 4.3.8. Households dwelling condition in terms of percentage as of construction material built

Construction material of roofs	**Percentage**	**construction material of walls**	**Percentage**
Corrugated iron sheet	92.1	Wood & mud	82.6
Thatch/grass	5.6	Wood & grass	0.3
Wood & mud	0.8	Reed & Bamboo	0.1
Reed & Bamboo	0.2	Mud & stone	1.6
Bricks/Tiles	0.1	Cement & stone	5.1
Others	1.3	Sand Blocks	7.3
Not stated	0.03	Bricks	1.1
Total	100	Others	1.9
		Total	100

Source: Extracted from CSA Ethiopian welfare monitoring survey 2004

In this part of discussion, the use of construction material for roof is a familiar tradition from earlier times and thus ignored as a good indicator at present. While the construction material of walls are characterized by 82.6 % constructed from wood & mud, with cement & stone 5.1%, sand blocks with 7.35% and only 1.1% with bricks. Thus, from the point of durability, conformability, modern facility and maintenance cost incurred houses made of wood & mud are unfit. In addition, it also revel the fact that, most households are still living in subsistence condition.

4.3.9. Households' status of change in living conditions

Table 4.3.9. Distribution of Households by the status of change in living condition of the Community over 12 Months time -2004

Living condition	Better	Same	Worse	Don't know	Not Stated	Total
General living Standard	106150	188100	142450	111100	2200	550000
Living Standard with respect to food	55000	97350	256300	139150	2200	550000

Source: Authors' Calculations based on CSA's Ethiopian welfare Monitoring survey 2004

As shown in the above table which is based on the welfare monitoring survey result of 2004, out of 550000 households only 106150 responded a better general living condition and 55000 in living standard with respect to food. In contrast, those households responded worth living condition in terms of general living standard and living standard with respect to food take the lion share of 142450 and 256300 respectively. From such result, it can be concluded that even if there is a growth rate of 13% registration in the city's economy, it is not able to address the poverty situation of the majority of the society. In addition, it is a good indicator of income distribution biases towards very few parts of already privileged ones than most of the society's poor. In addition, the result of households' response in terms of general living standard and living standard with respect to food of 188100 and 97350 respectively dose not at least reflect an improvement but rather just sustaining an earlier condition as it is.

4.3.10. Households waste disposal system and facility

Table 4.3.10. Household waste disposal system & facility

Type of Waste disposal facility	Total no of household	Percentage share
Vehicle/ Container	356939	64.9
Dugout	16836	3.1
Throwing away	58118	10.5
Use as Manure	7074	1.3
Burning	55341	10.1
Others	55158	10.0
Not Stated	534	0.1
Total	550000	100

Source: Authors' calculations applying the CSA Welfare monitoring survey 2004

The households waste disposal system, facility of the city, which is the safest, comprises 64.9 % through vehicle /container form, and the remaining 31.1 % is unsafe way of wastage disposal system.

4.3.11. The house holding rights in the city

Table 4.3.11.The city's dwellers house holding right structure in percentage age

Type of holding right	Percentage share
Owned	34.8
Rented	55.9
Free of charge	7.6
Others	1.7
Total	100

Source: extracted from CSA's Welfare Monitoring survey 2004

Based on the welfare monitoring survey result 55.9% of house holding right was allocated to renting by households, free of charge is 7.6%, 1.7% for other form of ownership. The only 34.8 % remaining parts owned in the form of private and are in better condition. In this respect, most of the rented

houses nationalized by the former regime and are in poor conditions for living.

4.4.1. Recurrent budget allocation & expenditure performance

Table 4.4.1. Recurrent budget allocation & Expenditure performance in Addis 2004

Description	Adjusted Budget in Birr	Expenditure in Birr	%
General Service	254,790,741	251,180,008	98.58
Economy	24,905,309	20,035,702	80.45
Social	305,814,437	249,297,583	81.52
Others[15]	135,807,096	0	0
Municipality	293,201,486	233,692,989	79.7
Total	1,014,519,069	754,206,282	74.34

Source: Authors calculation based on Annual Report of BOFED

The recurrent budget performance of the city is sounder with a total percentage share of 74.3% expenditure as compared to the total allocated budget. In this case however, no performance in others budget category, which is mostly assigned for the poor in the form of subsidy is questionable. Because it used for the city bus transport, credit for micro –enterprises and water supply facilitation.

[15] According to Finance and Economy Development Bureau the city, it refers to subsidy to Anbessa city bus, Water & Sewerage Authority and Addis credit Association.

4.4.2. Capital budget allocation & expenditure performance

Table 4.4.2. Capital Budget Allocation & Expenditure Performance in Addis 2004

Description	Adjusted Budget in Birr	Expenditure in Birr	%
General Service	52,093,661	13,120,871	25.2
Economy	167,186,942	95,208,374	56.9
* Environmental protection	8,638,300	2,240,739	25.9
* Environmental Development	109,700,071	87,131,442	79.4
*Micro& Small scale Enterprises	12,859,687	2,870,128	22.3
*Others	35,988,884	2,966,065	8.2
Social	123,626,190	25,576,962	20.7
*Education Bureau	39,207,296	7,817,394	19.9
* Health Bureau	28,533,101	4,789,101	16.8
*Others	55,885,793	12,970,467	23.2
Others/Subsidy	40,000,000	0	0
Municipality[16]	1,315,238,248	556,372,368	42.3
*Sanitation, Beatification &	63,606,576	4,280,116	6.7
*Road	405,087,959	320,779,422	79.2
*Water & Sewerage	234,081,894	75,664,431	32.3
*Others	299,878,007	131,670,827	43.9
Total	1,698,145,041	690,278,575	40.6

Source: Authors calculation based on Annual Report of BOFED

When we come to the capital budget performance, it is completely different with that of the recurrent. Except the economic sub sector, the remaining sectors budget performance is below 50% as indicated in the above table. Such low level of performances in the city, not only affect the moments economic progress but also have a great undesirable impact on future strategy to address multifaceted the problems of the city. It also shows that poverty alleviation not achieved only through allocation of the required budget but rather by the capacity to coordinate the human, financial and

[16] It is the main part of the city's structure in terms of economic, social and political decision up to lower level of administration known as Kebele.

material resources to the desired target. Thus, it is generally an indicator of lack of good governance and accountability.

4.4.3 Private investment approval, Implementation and operational activities

Table 4.4.3. Total number of Approved, Implemented, and Operational Investment activities since July 1992-july 2003 in Addis Ababa.

Level of Activity	SECTORS			Total	Sectoral percentage Share per Approved Projects total			
	Agri.	Ind.	Service		Agri.	Ind.	Ser.	Total
Approved	**143**	**1672**	**2307**	**4122**	-	-	-	
*Private	133	1542	2173	3848	-	-	-	
*Public	0	10	5	15	-	-	-	
* Foreign	10	120	129	259	-	-	-	
Implemented	**32**	**325**	**310**	**667**	**22.4**	**19.4**	**13.4**	**16.2**
*Private	30	293	274	597	21.0	17.5	11.9	14.5
*Public	0	2	3	5	0	0.1	0.1	0.1
* Foreign	2	30	33	65	1.4	1.8	1.4	1.6
Operational	**9**	**323**	**159**	**491**	**6.3**	**19.3**	**6.9**	**11.9**
*Private	9	293	139	441	6.2	17.5	6.0	10.7
*Public	0	0	0	0	0	0	0	0
* Foreign	0	30	20	50	0	1.8	0.9	1.2

Source: computed based on Statistical report of Ethiopian Investment Commission 2004.

As indicated in detail on the above table, out of the total approved projects the status of implemented and operational projects are 16.7 and 11.9 percent up to 2003 respectively. In terms of sector level, agriculture has the highest share of 22.4 % in implementation and lowest in being operational with 6.3%. When we come to the case of industry, it has the highest share of 19.4% and 19.3% in operational stage. Where as, the share of service sector is 13.4% in implementation stage and only 6.9% in operational stage.

The above whole fact will indicates that for the last eleven years with an average operational projects of 11.9%, it is very difficult to sustain economic growth and poverty reduction in strategy in terms of employment generation; export; and generating revenue to run the city's budget needs in a smooth manner.

4.4.4. The general picture of Human Poverty[17] level in Addis Ababa

Table 4.4.4. The level of Human Poverty in ADDIS ABABA 2004

Indicator	Level of human poverty (x = value of indicator)			Criteria
	Extreme	Medium	Low	
GDP per capita (PPP US$)	x < 3,500 x=2268	3,500 ≤x < 7,000	x ≥7,000	World bank
Undernourished	x > 25	10 < x ≤ 25 X=11.8	x ≤ 10	FAO
Net primary enrolment ratio (%)	x < 75	75 ≤ x < 90	x ≥90 X=92.7	UNESCO
Ratio of girls to boys in primary and secondary education (%)	x < 80	80 ≤ x < 90	x ≥ 90 X=115.3 & X=99.1	UNESCO
Under-five mortality rate(per 1,000 live births)	x > 100	30 < x ≤ 100 X=83	x ≤ 30	UNICEF
Population with sustainable access to an improved water source (%)	x < 75	75 ≤ x < 90	x ≥ 90 X=100	UNICEF & WHO
Population with sustainable access to improved sanitation (%)	x < 75	75 ≤ x < 90 X=75.5	x ≥ 90	UNICEF & WHO

Source: Ministry of Health; 'health and health related indicators'; Education Bureau of Addis Ababa; 'Education Statistics Annual Abstract'; and CSA ' welfare monitoring survey 2004'.

[17] Formats & standards extracted from" technical note on defining the level of Human Poverty in the Millennium Development goals" Human Development Report 2004.

As indicated in the above table the level of human poverty is lower in net primary enrolment, ratio of girls to boys in primary, secondary education and access to an improved water source; at medium level in under –five mortality and access to improved sanitation; and human poverty level is extreme in GDP per capita and undernourished indicators.

CHAPTER FIVE

5. Conclusion & Policy Implication

5.1. Conclusion

Despite the fact that Addis Ababa has registered higher economic of 13% on average in the year 2004, the poverty situation of the society with respect to housing, sanitation, unemployment, Private investment, water supply, service facilities, trade structure and low public expenditure performance are still the major problems. In addition, even if the service sector performance in terms of GDP at factor is higher than that of industry and agriculture it is highly dependent upon imported consumer goods and services.

In this paper, attempts were made to examine the key issues in the literatures on Social Accounting Matrix construction methods. This ding setting the structure of input-output table and social accounting matrix; defining the basic row and column account; setting the important micro variables of the city in the agricultural; industrial and service sectors; how to use different survey results; revising the regional GDP estimation. Input-output table as a source data is balancing technique to reconcile the row and column accounts, deriving some satellite tables to analyses poverty and a discussion of growth achievements with basic needs of the society. Based on the above methods, the economic growth of the city was investigated in terms of unemployment, housing condition, delivery of basic facilities, change in living condition, performance of public expenditure & private investment activities.

The findings of this study suggest that the economic of the city is largely dependent on service, followed by industry and finally by agriculture. In contrast, the industrial sector has the highest share in terms of export earnings then followed by agriculture and the least one for service sector. When it comes to labor income to the households, the major contributor is again the service sector and the followed by the industrial sector .While the agricultural sector contribution in this regard is very small as compared to the two sectors.

5.2. Policy Implication

The achievement of economic growth and poverty eradication strategy in the short run is a debating issue. The former is a necessary condition while later is determinant to economic development of a country/nation, particularly in addressing the problem of poverty among the mass of the society. The population age structure, unemployment, trade balance, private investment, and government budget affects an economic growth in any nation.

Structure

As shown in this paper, the trade structure of the city is highly import biased as compared with export, particularly towards service sector that has a comparative advantage in the domestic economy .But when we come to the industrial sector; it has a comparative advantage in terms of export trade in relative terms. Hence, there must be an appropriate policy, which allows the effective utilization of available resources in favor of the industrial sector than the service sector. This not only to create strong industrial base which

becomes more competitive in the external market but also in the long run it can feed the service sector s' input needs and able to shift the trade imbalance towards export.

Sanitation

The other poverty situation of the society is the sanitation problem. As indicated in the research findings, the allocation of budget by the city government and its performance are completely different. Thus, the city administration must design an appropriate policy measures to utilize the allocated budget in an efficient manner and special emphasis must given to private investment participation.

Housing

As also, indicate in this study, the living condition of the society in the case of housing condition, it is a very serious problem in terms of the construction material, which is below standard and accessibility. First; there should have to be housing policy that set a standard, secondly; there must be a restructuring program to upgrade most of the old houses, which are below standard. Finally; the state have to make certain intervention like special credit facilitation programs to encourage house construction by private households, relaxing the existing land holding rights and upgrading the system of service delivery like access to road ,market and recreation areas.

Unemployment

The other aspect of poverty is unemployment, which given here a due attention in this paper. The unemployment problem of the city, particularly among the youth is the most severe one. Thus, special policy designed

towards the youth like revision of the education system that can help creativity, creating special revolving fund with lower interest rate and directing the youth to participate in the export sector economic activities.

Private investment

As private investment is the backbone /engine of any economy, some special attention must be given to it. when we came to private investment activity in the city, it was tried to shown clearly in this paper that registration/ approval of private investment is not a big issue as compared with what is being achieved for the past ten years. Thus, a detailed investigation undertaken to identify the major bottlenecks that hampered its poor performance and a proper a policy designed accordingly.

Government expenditure performance

When we come to government expenditure performance, it is still inefficient as compared to the fiscal year budget allocation. This is specially stated clearly in the capital budget performance. Thus, here also special emphasis given to the achievement of its desired target particularly in the area of education, health, water and sewerage, housing and small and micro scale enterprises. In addition, special policy / strategy must be designed to avoid the autocratic procedure in the area of construction, raw material supply, and service delivery to costumers.

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Annex 1

Table 1. Input-output Matrix for Addis Ababa, 2004 (in millions of Birr)

Expenditures→ Receipts↓	Sectors			Sub-Total	Final demand				Total
	Agr.	Ind.	Services		Cons.	Inv.	Gov't.	Export	
Agriculture	4137	1725	7485	13347	82	7	0	3	13438
Industry	4643	7648	1055	13347	1187	2368	11	1726	18637
Service	4566	3974	4806	13347	6288	8965	550	1	29151
Sub-total	13347	13347	13347	40040	7557	11340	561	1730	61227
Value added labor	47	594	6459	7099					
Value added capital	35	3374	4681	8089					
Indirect taxes	0	46	192	238					
Imports	10	1,278	4,473	5761					
Total	13438	18637	29151	61227					

Annex 2

An aggregated Balanced Macro SAM for ADDIS ABABA 2004 in Million 0f Birr

Expenditures→ Reciepts↓	Activity	Commodity	Factors	Households	Enterprises	Recurrent vernment	Government Investment	Investment	Rest of World	Total
Activity		55,898.0		68.1						55,966.2
Commodity	40,039.7			7489.0		745	553.1	11,339.7	1,729.6	61,896.3
Factors	15,182.8									15,182.8
Households			7,087.4	166.4	195.5	394.5	92.1		3,996.20	11,932.1
Enterprises			8,089.5			34.5				8,124.0
Recurrent Government	743.7	237.7		602.3	33.8				41.5	1,659.1
Government Investment				58.7				586.6		645.2
Savings				3,547.5	7,894.7	484.0			0.04	11,926.3
Rest of the world		5,760.5	5.9			0.9				5,767.3
Total	55,966.2	61,896.3	15,182.8	11,932.1	8,124.0	1,659.1	645.2	11,926.3	5,767.3	

Annex.3

Cell entries for macro SAM

The following cells provide brief description of the macro SAM cell entries. The cell entries are referenced by their "row-column" location, i.e., intermediate inputs are in the cell "commodity –activity" to reflect that the activity account pays to the commodity account for the intermediate inputs.
Intermediate input ("Commodities –Activities"): total intermediate inputs demand is assume to inclusive of imports, import tariffs, and marketing and transport margins.

Value added (Factors-Activities): total value added is the sum of the value of the primary factors of production, namely labor, agriculture capital and non-agriculture capital.

Indirect taxes (Government-Activities): total indirect taxes include domestic taxes on goods and services and import tariffs. This cell entry is the domestic tax on production.

Domestic production (Activities-Commodities): domestic marketed product by all activities, which is subject to marketing and transport margins.
Import tariffs (Government-Commodities): taxes on international trade and transaction.

Import (ROW-Commodities): total imports of goods and services.

Capital income (Enterprise -Factors): factor income distributed to enterprises is the non-labor value added of GDP at F.C.

Labor income (Household-Factors): wages and salaries paid to households, exclusive of compensations to employees paid to the rest of the world and capital income paid to enterprise.

Government factor income (Government-Factors.): Wages paid to government employees.

Corporate tax and net interest payments (.government-enterprises.): Taxes paid by enterprises (public and private), which include corporate income tax and tax on property; and net interest payments or transfers from enterprises to government.

Corporate saving ("Capital-Enterprises") Gross savings of public corporations and private financial institutions.

Enterprise income to ROW (ROW-Enterprises): Net transfer from domestic enterprises to the rest of the world. These could include payments from domestic non-profit organizations to the rest of the world.

Private consumption (Commodities-Households): Consumption of marketed commodities by households, inclusive of imports.

Inter-household transfer (Enterprises-Households.): Transfer from households to enterprises. There is no documentation of these accounts; they could be interest payments and/or insurance installments.

Income tax ("Government-Households"): Individual income tax paid by households.

Household saving ("Capital-Households"): Total savings by households.

Government consumption (Commodities- Government): Total government expenditures on goods and services, inclusive of imports.

Government transfers to households ("Households- Government"): Total government transfers to households in the form of various social welfare programs.

Government saving ("Capital-Government"): Residual of government income after taking out government expenditures and transfers.

Investment expenditures (Commodities-capital): Sum of gross fixed capital formation and changes in stocks.

Net investment to ROW (Capital-ROW): Difference between foreign saving/investment at home and domestic saving/investment abroad. The figure indicates a net positive domestic investment abroad.

Exports (Commodities-ROW): Total exports of goods and services.

Remittances ("Households-ROW"): Difference between the net current transfers from the rest of the world less foreign grants received by the government.

Foreign grants ("Government-ROW"): Foreign grants received by the government.

Annex 4

The Micro SAM Account Description for data collection at macro level

Group	Account	Description
Agricultural sector (Activities)	ABARLEY	Growing of barley
	AWHEAT	Growing of wheat
	ASORGH	Growing of sorghum
	AMAIZE	Growing of maize
	ATEFF	Growing of Teff
	AOATS	Growing of Oats
	ACHIPEAS	Growing of chick peas
	AFPEAS	Growing of field peas
	AFENUG	Growing of fenugreek
	AHABEANS	Growing of haricot bean
	AHOBEANS	Growing of horse beans
	ALENTI	Growing of lentils
	AVETCH	Growing of vetch
	ALINSE	Growing of linseed
	ANIGSEED	Growing of Niger seed
	ARAPSEED	Growing of rape seed
	ASUNFLOW	Growing of sunflower
	ABEEROO	Growing of Beet root
	ACARRO	Growing of Carrot
	ACABBA	Growing of Cabbage (Head)
	AGARLIC	Growing of Garlic
	AGRPEPP	Growing of Green Pepper
	AKALE	Growing of kale
	ALETTU	Growing of lettuce
	AONION	Growing of onions
	APOTA	Growing of potato
	ASWCHA	Growing of Swiss chard
	ATOMA	Growing of Tomato
	APUPM	Growing of Pumpkin
	APEPPER	Growing of Pepper
	ACAUL	Growing of Cauliflower
	ASQUA	Growing of Squash
	AROFARM	Growing of Rose
	AFOR	Forestry
	ALIVESTO	Livestock
	APOLU	Poultry
	ABEE	Beekeeping

Group	Account	Description
Non-agricultural/ Industrial Sector (Activities)	AMININ	Mining and quarrying
	AFOODP	Manufacture of food products
	ABEVER	Manufacture of beverage products
	ATOBACO	Manufacture of tobacco products
	ATEXTI	Manufacture of textiles
	AWEARAPP	Manufacture of wearing apparel, except fur apparel
	ATANDRESS	Tanning and dressing of leather; footwear, luggage and handbags
	AWOODP	Manufacture of wood and wood products, and cork, except furniture
	APAPER	Manufacture of paper and, paper products and printing
	ACHEMI	Manufacture of chemicals and chemical products
	ARUBPLA	Manufacture of rubber and plastic products
	ANMETAL	Manufacture of other non –metallic mineral products
	ABISEEL	Manufacture of basic iron and steel
	AFABMETAL	Manufacture of fabricated metal products except machinery and equipment
	AMACHIN	Manufacture of machinery and equipment N.E.C
	AMOTOVEH	Manufacture of motor vehicles
	AFURNI	Manufacture of furniture; manufacturing N.E.C
	AGRAIN	Grain mill services
Services sector (Activities)	ARESB	Residential building
	ANRESB	Non –residential building
	AOTHCONST	Other construction
	AESTAT	Real estate
	AOWNDEW	Ownership of dwelling
	ABUSI	Business
	AHOTEL	Hotel and restaurant
	ATRADE	Wholesale and retail trade
	AELECT	Electricity
	AWATER	Water
	ACONST	Construction
	AAIRTRAN	Air transport
	AROADTRAN	Road transport
	ASHIPP	Shipping

Group	Account	Description
	ARAILTRAN	Rail transport
	ATELE	Telecommunication
	APOST	Postal services
	AAAAASUP	Allied and supporting services
	ABANK	Banks
	AINSU	Insurances
	AMICFIN	Micro finance institutions
	ASANCRE	Employee's saving and credit association
	APUBADM	Public administration
	AEDUC	Education
	AHEALTH	Health
	AOTHERSOSER	Other social services
	ADOMSER	Domestic services
Agricultural sector (commodities)	CBARLEY	Barley
	CWHEAT	Wheat
	CSORGH	Sorghum
	CMAIZE	Maize
	CTEFF	Teff
	COATS	Oats
	CCHIPEAS	Chick peas
	CFPEAS	Field peas
	CFENUG	Fenugreek
	CHABEANS	Haricot bean
	CHOBEANS	Horse beans
	CLENTI	Lentils
	CVETCH	Vetch
	CLINSE	Linseed
	CNIGSEED	Niger seed
	CRAPSEED	Rape seed
	CSUNFLOW	Sunflower
	CBEEROO	Beet root
	CCARRO	Carrot
	CCABBA	Cabbage (Head)
	CGARLIC	Garlic
	CGRPEPP	Green Pepper
	CKALE	Kale
	CLETTU	Lettuce
	CONION	Onions
	CPOTA	Potato
	CSWCHA	Swiss chard
	CTOMA	Tomato
	CPUPM	Pumpkin
	CPEPPER	Pepper
	CCAUL	Cauliflower

Group	Account	Description
	CSQUA	Squash
	CFOR	Forestry
	CLIVESTO	Livestock
	CPOLU	Poultry
	CBEE	Beekeeping
Non-agricultural / Industrial Sector (Commodities)	CMININ	Mining and quarrying
	CFOODP	Food products
	CBEVER	Beverage products
	CTOBACO	Tobacco products
	CTEXTI	Textiles
	CWEARAPP	Wearing apparel, except fur apparel
	CTANDRESS	Tanning and dressing of leather; footwear, luggage and handbags
	CWOODP	Wood and wood products, and cork, except furniture
	CPAPER	Paper and, paper products and printing
	CCHEMI	Chemicals and chemical products
	CRUBPLA	Rubber and plastic products
	CNMETAL	Manufacture of other non –metallic mineral products
	CBISEEL	Manufacture of basic iron and steel
	CFABMETAL	Manufacture of fabricated metal products except machinery and equipment
	CMACHIN	Machinery and equipment N.E.C
	CMOTOVEH	Manufacture of motor vehicles
	CFURNI	Manufacture of furniture; manufacturing N.E.C
	CGRAIN	Grain mill
Service sector (Commodities)	CRESB	Residential building
	CNRESB	Non –residential building
	COTHCONST	Other construction
	CESTAT	Real estate
	COWNDEW	Ownership of dwelling
	CBUSI	Business
	CHOTEL	Hotel and restaurant
	CTRADE	Wholesale and retail trade
	CELECT	Electricity
	CWATER	Water
	CONST	Construction
	CAIRTRAN	Air transport
	CROADTRAN	Road transport
	CSHIPP	Shipping
	CRAILTRAN	Rail transport
	CTELE	Telecommunication

Group	Account	Description
	CPOST	Postal services
	CAAAASUP	Allied and supporting services
	CBANK	Banks
	CINSU	Insurances
	CMICFIN	Micro finance institutions
	CSANCRE	Employee's saving and credit association
	CPUBADM	Public administration
	CEDUC	Education
	CHEALTH	Health
	COTHERSOSER	Other social services
	CDOMSER	Domestic services
FACTORS	FSUB	Subsistence factor
	LCHILD	Child labor (age10 to14)
	LNONF	Female labor (no formal education)
	LNFPF	Female (not finished primary education)
	LNFSF	Female (not finished secondary education)
	LSFCF	Female (not finished secondary or higher education)
	LNONM	Male (no formal education)
	LNFPM	Male (not finished primary education)
	LNFSM	Male (not finished secondary education)
	LSECM	Male (not finished secondary/ higher education)
	CAPAG	Agricultural capital
	CAPIND	Industrial capital
	CAPSER	Service sector capital
Taxes	DIRTAX	Direct taxes on domestic institutions
	IPMTAX	Import tariffs
	EXTAX	Export taxes
	ACTTAX	Vale added or activity taxes
	INDTAX	Indirect or sales taxes
	FACTAX	Factor taxes
Households		
Other	GOV	Government
Institution	ROW	Rest of world
Account	S-I	Savings and investment

From the 82 activity, sectors in the SAM are 37 in Agriculture; 1 in Mining; 17 in Industry; and the remaining in Service. The disaggregating procedure applies also similarly to commodities. In addition, value added divided into

labor and capital only among agriculture, industry, and service. As land is the property of the state, it has zero value

Declaration

"I, the undersigned; declare that this thesis is my own original work, and has not been presented for a degree in any other university and that all sources of materials used for the thesis have been duly acknowledged".

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