

የአዲስ አበባ ከተማ አስተዳደር ፕላንና ልማት ኮሚሽን

Addis Ababa City Administration Plan and Development Commission



Measures of Gross City Product by Production Approach for Addis Ababa City Administration

Production and Expenditures Approach

**Coverage and Definitions,
Sources of Data, Methods of Estimation
and
Estimation Results**

(For the 2008-2015 Ethiopian Fiscal Year)

Urban Research and Studies Directorate

June, 2023

Addis Ababa, Ethiopia.

Contents

Contents	i
List of Tables:	iv
List of Figures.....	v
PART-I: GCP BY PRODUCTION APPROACH (GCP-P)	vi
Foreword	vii
Acknowledgements.....	viii
List of abbreviations and acronyms.....	ix
Executive Summary	12
1. Introduction	13
2. Objectives of the study	14
3. Overview of Basic Concepts and Definitions	15
A. The SNA: Overview	15
B. Analytical framework of Supply Side Estimates	16
C. Universal national economic account models	17
D. Specification of Operational Economic Account Model	20
E. The Compilation System.....	22
F. Frame of References and Data Sources.....	29
G. Data Processing and level of Aggregation.....	33
H. Quality Assessment and Plausibility checks.....	34
I. The concept of Boundaries.....	35
J. Timing and Valuations of Expenditures	37
K. Standard Classifications of GCE components	38
4. COVERAGES, SOURCES OF DATA & METHODS OF ESTIMATION and RESULTS ..	39
1) EMPLOYMENT Performance of CITY Economy	39
2) The Size and Structure of the City Economy (2008-2015).....	40
3) Economic Growth Rate of City economy.....	50
4) Per capita Income Results.....	53
5) Coverage, Data Sources and Method of Estimation for Specific Sectors	54
5. Agriculture, forestry and fishing	54
6. INDUSTRY	60
6.1. Mining and quarrying	60

6.2.	Manufacturing.....	61
6.3.	Electricity, gas, steam and air conditioning.....	65
6.4.	Water supply; sewerage, waste management and remediation activities	65
6.5.	Construction.....	67
7.	SERVICE.....	72
6.6.	Wholesale and retail Trade, Repair of motor vehicle and motor cycle	72
6.7.	Accommodation and food service activities.....	74
6.8.	Transportation and storage	75
6.9.	Information and communication.....	79
6.10.	Financial and Insurance Activities	81
6.11.	Real estate Activities	84
6.12.	Professional, Scientific and Technical Activities	86
6.13.	Administrative and support service activities.....	88
6.14.	Public administration and compulsory social security	89
6.15.	Education.....	91
6.16.	Human Health and Social Work Activities.....	95
6.17.	Arts, Entertainment and Recreation	98
6.18.	Other services.....	99
6.19.	Private household with employed persons	101
8.	Concluding Remarks.....	102
	References.....	102
	PART-II: GCP BY EXPENDITURES APPROACH (GCP-E).....	104
I.	Introduction.....	105
II.	Executive Summary.....	106
III.	Overview of Basic Concepts and Definitions.....	107
A.	The SNA: Overview	107
B.	The concept of Boundaries in the SNA	108
C.	Timing and Valuations of Expenditures.....	109
D.	Standard Classifications of GCE components.....	110
IV.	COVERAGES, SOURCES OF DATA & METHODS OF ESTIMATION	110
1.	Final Consumption Expenditures.....	110
A.	Households Final Consumption Expenditure.....	111
a)	Coverage's and Definitions	111

b) Sources of Data	112
d) Remarks.....	113
B. NPISHs' Final Consumption Expenditure	113
a) Coverage's and Definitions	113
b) Sources of Data	114
c) Methods of Estimation	114
d) Remarks.....	115
C. Government Final Consumption Expenditure	115
a) Coverage's and Definitions	115
b) Sources of Data	115
c) Methods of Estimation	115
d) Remarks.....	118
2. Gross Capital Formation	118
a) Coverage's and Definitions	118
b) Sources of Data	119
c) Methods of Estimation	120
d) Remarks.....	122
3. Net Exports	122
Remarks.....	122
V. Details of Estimation Results	123
VI. Glossary	139
References: GCP (E).....	159

List of Tables:

Table 1: Universal Economic Account Model	17
Table 2: The Perspectives of Standard Economic Account Model	18
Table 3: Coverage and Industrial classification of Economic Activities	21
Table 4: Data sources for Gross City Product Compilation.....	31
Table 5: Employment Performance	39
Table 6: Growth Rates and Shares of Employment by Industry	40
Table 7: Size and percentage share of Gross City Product by Industry at 2008 base series	42
Table 8: Size and percentage share of Gross City Product by Industry at current basic prices	44
Table 9: Percentage share of GVA by Top Sectors (average 2013-2015) at constant price	45
Table 10: Addis Ababa Gross City Product, 2008-2015; at current prices (amount in Billion Birr)	46
Table 11: Addis Ababa Gross City Product, 2008-2015; at 2008 base prices (amount in Billion Birr) ..	47
Table 12: Informal Value Added (2008-2015)	49
Table 13: Growth Rates by sectors	52
Table 14: Result of real Per capita Income Estimation	53
Table 18- GCP by Expenditure Approach at Current Market Price. (2008 EFY=100% Series) (Billion Birr)	123
Table 19-Growth rate in Gross City Product by Expenditure Approach at CURRENT MARKET PRICE (2008 EFY =100% Series) (%)	124
Table 20-Decomposition of Gross City Product by Expenditure Approach at CURRENT MARKET PRICE (2008 EFY =100% Series) (%)	124
Table 21-Households Final Consumption Expenditure at CURRENT Market Price (2008 EFY =100% Series) (By COICOP; in Billion Birr)	125
Table 22-Growth rate of Households Final Consumption Expenditure at CURRENT Market Price (2008 EFY =100% Series) (By COICOP; %)	127
Table 23- Distribution of Households Final Consumption Expenditure at CURRENT Market Price (2008 EFY =100% Series) (By COICOP; %)	128
Table 24- Gross Capital Formation by Type of Asset at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)	129
Table 25-Percentage Change (Growth) in Gross Capital Formation by Type of Asset at Current MARKET PRICE for Addis Ababa City; (2008 EFY =100% Series) (%)	129
Table 26-Percentage Distribution of Gross Capital Formation by Type of Asset at Current MARKET PRICE for Addis Ababa City; (2008 EFY =100% Series) (%)	129
Table 27- Gross Capital Formation by Ownership at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)	130
Table 28- Percentage Change (Growth) in Gross Capital Formation by Ownership at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)	130
Table 29-Percentage Distribution of Gross Capital Formation by Ownership at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)	130
Table 30-Gross City Product by Expenditure Approach at CONSTANT MARKET PRICE (2008 EFY =100% Series) (in Billion Birr)	132
Table 31- Growth rate in Gross City Product by Expenditure Approach at CONSTANT MARKET PRICE (2008 EFY =100% Series) (%)	133

Table 32-Composition of Gross City Product by Expenditure Approach at CONSTANT MARKET PRICE (2008 EFY =100% Series) (%)	133
Table 33-Households Final Consumption Expenditure at CONSTANT Market Price (2008 EFY =100% Series) (By COICOP; in Billion Birr)	135
Table 34-Distribution of Households Final Consumption Expenditure at CONSTANT Market Price (2008 EFY =100% Series) (By COICOP; %)	135
Table 35-Growth rate of Households Final Consumption Expenditure at CONSTANT Market Price (2008	136
Table 36-Level of GCF by Asset type at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)	136
Table 37- Percentage Change (Growth) in GCF by Asset type at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%).....	137
Table 38-Percentage Distribution of GCF by Asset type at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%).....	137
Table 39-Level of GCF by Ownership at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)	137
Table 40-Percentage Change/Growth in GCF by Ownership at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%).....	138
Table 41-Percentage Distribution of GCF by Ownership at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%).....	138

List of Figures

Figure 1-Structural Decomposition of GCP by Expenditure Approach for Addis Ababa City (At Current Market Price) (2008- 2015 EFY Average) (%)	125
Figure 2-Average Percent Distribution of Household Final Consumption Expenditure in Addis Ababa City (by COICOP) (At Current Market Price) (2008-2015 EFY)	128
Figure 3-Percentage Distribution of GCF at Current Market Price in Addis Ababa City (by Broad Asset Category) (2008-2015 EFY Average)	131
Figure 4-Percentage Distribution of GCF at Current Market Price in Addis Ababa City (by Detailed Asset Category) (2008-2015 EFY Average)	131
Figure 5-Distribution of GCF at Current Market Price in Addis Ababa City (by Type of Ownership) (2008-2015 EFY Average)	132
Figure 6-Structural Decomposition of GCP by Expenditure Approach for Addis Ababa City (At Constant Market Price) (2008- 2013 EFY Average) (%)	134
Figure 7-Level (Bill. Birr) and Trend of GCF at Constant Market Price in Addis Ababa City (Detailed Asset Category) (2008-2015 EFY)	138

PART-I: GCP BY PRODUCTION APPROACH (GCP-P)

Foreword

The process of development planning and policy formulation at all tiers of public governance should principally be based on timely and research-based information regarding the underlying activities taking place in an economic territory. The more policy and planning decisions are knowledge based; the more chances would be for their successes. It is with this motive that the Addis Ababa City Planning and Development Commission is established as a core institution to centrally govern and monitor the overall socio-economic development plans and performances of the City Administration.

Among the different socio-economic indicators, the city economic accounts indicators like '**Gross City Product (GCP)**' play a fundamental role as policy tools as used by all institutional actors in the economy. The task of estimating GCP is considered to be difficult in situations of poor data quality and practicing at regional/city level, where; among others, accounting for cross border transactions becomes more complex, is almost impracticable. Despite such limitations, this document tries to address the envisaged gaps to the extent possible and presents these estimates to be used by all interested groups.

Worthy of note, the figures indicated are subject to change depending on the availability of new updates in source data and methods of estimation pertaining to the revision policy.

Finally, we hope and, are confident that the information contained in this document will help all interested stakeholders; and we welcome and appreciation any comments and feedbacks to further enrich this document and other similar future works.

Ato Getachew Haile

Deputy Commissioner

Information, Urban Research and Studies

June, 2023; Addis Ababa

Acknowledgements

This research report would have not been realized without the involvement of many institutions and people during the study processes. First, the allocation of budget for research by higher officials of the Commission Dadi Wodajo (PhD) (Commissioner) and Mr. Getachew Haile (Deputy Commissioner) and their devotion of time in following up the progress of the research and in addressing challenges such as shortage of researcher and accessing key data bases from different institutions as well as logistics during the process is highly acknowledged. Second, Special thanks goes to the efforts of more than four hundred institutions and their staffs who directly participated and provided data for this study.

Third, the commitment and consistent efforts of the Director, team leaders and members of research team of this research are highly acknowledged.

We also acknowledge and thank for the technical supports provided by the National Accounts Directorate of the Federal Minister of Planning and Development for the elaborations and training workshops provided to accord with the national accounts concepts and methods.

The comments and suggestions forwarded by workshop participants on earlier version of this study is highly acknowledged.

List of abbreviations and acronyms

AACPDCo	Addis Ababa Plan and Development Commission
AAU	Addis Ababa University
AAWSA	Addis Ababa Water and Sewerage Authority
ABoF	Addis Ababa Bureau of Finance
BoFED	Bureau of Finance and Economic Development.
BoTI	Bureau of Trade and Industry
CFC	Consumption of fixed capital
COFOG	Classification of the Functions of Government
COICOP	Classification of Individual Consumption According to Purpose
COPNI	Classification of the Purposes of Non-Profit Institutions Serving Households
COPP	Classification of the Outlays of Producers According to Purpose
CPC	Central Product Classification
CPI	Consumer Price Index
CSA	Central Statistics Agency
EEC	European Economic Community
EEU	Ethiopian Electric Utility
EFY	Ethiopian Fiscal Year
Ethio-telecom	Ethiopian Telecommunication Corporation
FCSA	Federal Charities and Societies Agency
GCP	Gross City Product
GDP	Gross Domestic Product

GDP (P)	Gross Domestic Product – Production Approach
GPI	General Price Index
GVA	Gross Value Added
GVO	Gross Value of Output
HCE	Households Consumption Expenditure
HICES	Household Income, Consumption and Expenditure Survey
IBEX	Integrated Budget and Expenditure
IC	Intermediate Consumption
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification of all Economic Activities
LFS	Labor Force Survey
MoFED	Ministry of Finance and Economic Development
MOT	Minister of Trade
MTEF	Medium Term Expenditure Framework
NGO	Non-Governmental Organizations
NGOCU	Non-Government Organization’s Coordination Unit
NPE	Number of Persons Engaged
NPISHs	Non-Profit Institutions Serving Households
ROW	Rest of the World
SNA	System of National Accounts
TVET	Technical Vocational Education & Training
UEUS	Urban Employment Unemployment Survey

UNDP	United Nation Development Program
UNECA	United Nation Economic Commission for Africa
UNFPA	United Nation for Population Activities
UNICEF	United Nation International Children’s Emergency Fund
USD	United States Dollar
VA	Value Added
VAPW	Value Added per Worker

Executive Summary

- The economic account compilation system in Addis Ababa city so far has mainly focused on estimating gross city product by industry based on production approach using administrative and statistical data sources.
- This study combined administrative, statistical and income statements of business enterprises from tax data/ ministry of revenue and mini sample survey data in compilation of city economic account and developed operational economic account model based on 2008 system of national economic account, ISIC revision IV industrial classification and 2005 Ethiopian standard industrial classification.
- The finding of study shows that the size of city economy reached 691.01 billion Birr in 2015 in real term and average grows at 8.74% from 2012-2015 EFY with per capita income of \$4,347.92 USD or 178,018.28 Birr. In nominal term the city economy reached 1,924.22 billion in 2015 EFY. The growth rate varies from sector to sector with average growth of urban agriculture 11.39%, industry 10.17% and service 8.46%. Negative growth rate registered in construction, water sectors, electricity, transport & storage, professional and administrative support for two years during the period.
- The finding also revealed that service sector accounted on average 84.09% of the economy while the industry sector accounted about 15.55% and urban agriculture 0.85% during the period. The study also shows that employment has increased from 1,444,212 in 2008 to 1,566,242 in 2014 with 1.9% growth rate per annum.

1. Introduction

The Addis Ababa City Administration Planning and Development Commission (AACPDCo) is one of the core and frontline institutions to produce development indicators for development plan preparation and policy related analysis – as mandated by the proclamation number 74/2014 E.C.

In line to the duties and responsibilities, and recognizing the significant roles of up-to-date and reliable city economic statistics that will evidently support the formulation, implementation and evaluation of development policies & strategies, Addis Ababa city administration has been engaged in the collection, compilation, analysis and dissemination of City economic statistics since 2004. One of these assessments is making economic valuation/estimation on the GCP which comprises valuation of important economic transactions related to the production, consumption, gross capital formation/investment and other related indicators including the generation and redistribution of incomes generated in such transactions.

This document tries to portray the GCP estimation of Addis Ababa City Administration for the 2008 - 2013 accounting years as part of the economic valuation research initiatives. It comprised estimates using the 2008 EFY as a base year for analysis in real terms and includes the levels, pace and structural compositions of the production and expenditure indicators together with the basic concepts underlying the whole estimation process, the sources and methods devised to generate the estimates both in nominal (at current prices) and in real (at constant price) terms.

2. Objectives of the study

The main objective of this study was to measure the progress of economic activities in Addis Ababa city Administration. More specifically, the objectives of this study are:

- To compile and analyze Gross City product (GCP) by industry and by Production approach for 2008-2015 EFY;
- To examine macroeconomic indicators (economic growth, structural composition, per capita income) for Addis Ababa city administration; and
- To investigate the contribution of different economic sectors in the city economy

The findings of this study provide relevant insights on aforementioned issues for policy maker and practitioners to support strategic planning, policy design and informed decision making by the city administration as well as other institutional units. Since the change in monetary value is not only the result of change in the volume of production but also of change in prices, the estimation has been made both in nominal and real terms. The computation of GCP in nominal terms is done using the prevailing current basic prices whereas the real term estimation is done using 2008 EFY as base year which is consistent with the national accounts.

3. Overview of Basic Concepts and Definitions¹

A. The SNA: Overview

The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity in accordance with strict accounting conventions based on economic principles. It is designed to be sufficiently comprehensive that individual countries/regions, whatever their economic structures, institutional arrangements or level of development, can select from within it those parts of the SNA that are considered to be most relevant and useful to implement in the light of their own needs and capabilities. Moreover, the SNA is designed for economic analysis, decision taking and policymaking, whatever the industrial structure or stage of economic development reached by a country/region. The basic concepts and definitions of the SNA depend upon economic reasoning and principles which should be universally valid and invariant to the particular economic circumstances in which they are applied. Similarly, the classifications and accounting rules are meant to be universally applicable.

The recommendations of SNA are expressed in terms of a set of concepts, definitions, classifications and accounting rules that comprise the internationally agreed standard for measuring such items as gross domestic product (GDP), the most frequently quoted indicator of economic performance. These standards provide a comprehensive and detailed record of the complex economic activities taking place within an economy and of the interaction between the different economic agents, and groups of agents, that take place on markets or elsewhere.

The SNA contains a number of conceptual elements that determine the accounting framework of the SNA and permit various aspects of the questions raised to be answered in terms of: a) Institutional units and sectors (who?); b) Transactions and other flows (what?); c) Assets and liabilities (what stocks?); d) Products and producing units (other aspects of who and what?); and, e) Purposes (why?).

¹ More elaborated definitions and explanations on selected concepts and terminologies are presented in the glossary section.

In summary, four cited reasons for measuring Gross city product and income are:

- i.* model for description and of analysis of the city economy such as progress of city per capita income, economic growth, job creation, labor productivity, employment rates, and disposable income of households etc.;
- ii.* the analysis of the specialization, diversification and the role of different industry in the city economy;
- iii.* tool for forecasting and devising development strategy such as Input-output table, Growth accounting, SAM, and
- iv.* tool for communication and decision-making in public and private sector (used by Universities, research institutions and other institutions for research activities and by enterprises for industrial investment project proposal studies)

B. Analytical framework of Supply Side Estimates

Concepts: Here we present the definition of core concepts only, but the definitions of most of the concepts used are listed in Glossary at the end of the document

- Gross value added at basic prices is defined as output valued at basic prices less intermediate consumption valued at purchasers' prices
- Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets consumption
- Compensation of employees is defined as the total remuneration, in cash or in kind, payable by an enterprise to an employee
- Gross City product (GCP) at market prices are equal to the sum of the gross value added of all resident enterprises plus those taxes, less subsidies, on products
- Per capita income is GCP divided by number of residents in Addis Ababa City

- An institutional unit is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities

C. Universal national economic account models

The international guidelines for economic account serve as universal conceptual model. There have been four generations of universal economic account models so far. These are indicated in Table 1.

Table 1: Universal Economic Account Model

Year	Universal national economic account model
1951-1953	UN guideline of 1953 (SNA53); very simple tables and accounts
1968-1970	UN guideline of 1968 (SNA68)
1993-1995	joint guideline of 1993
2008-2010	updates of the joint and European guidelines (SNA2008)

Universal national economic account model concepts and tools are used to define what is to be measured and how the national economy is measured. The conceptual framework in the international guidelines serves as the universal model of the national accounts. It indicates in general terms how national accounts statistics should describe the national economy.

The Universal economic account is a multi-purpose model that consists of at least eight perspectives. The general perspective of the city economic accounts is to describe the city economy as a whole. In addition to this general perspective, there are seven important specific perspectives incorporated in the standard economic accounts. The standard economic accounts describe the national/regional/city economy as a set of three interacting economic processes that includes production, distribution and use of income and accumulation and financing in which different roles are played by five main groups of institutional actors. An institutional unit is an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities

and in transactions with other entities. The resident institutional units that make up the total economy are grouped into five mutually exclusive institutional sectors. Corporation is an entity created by process of law whose existence is recognized independently of the other institutional units that may own shares in its equity. The roles played by these five groups of institutional actors are specific perspectives. The eight perspectives of standard economic account model are indicated in Table 2.

Table 2: The Perspectives of Standard Economic Account Model

S.N.	Perspectives	Definition(s)
1	The national/regional/city economy as a whole	The total economy is defined as the entire set of resident institutional units.
2	Non-financial corporations	Non-financial corporations are corporations whose principal activity is the production of market goods or non-financial services.
3	Financial corporations	The financial corporations sector includes all resident corporations whose principal activity is providing financial services including financial intermediation, insurance and pension fund services, and units that provide activities that facilitate financial intermediation.
4	Government	Government units are unique kinds of legal entities established by political processes that have legislative, judicial or executive authority over other institutional units within a given area. Viewed as institutional units, the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes, to redistribute income and wealth by means of transfers, and to engage in non-market production.

5	Household	A group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.
6	Non-profit institutions serving households (NPISHs)	Non-profit institutions (NPIs) are legal or social entities created for the purpose of producing goods and services. The non-profit institutions serving households sector consists of all resident NPIs, except those controlled by government, that provide non-market goods or services to households or to the community at large
7	Industries	An industry consists of a group of establishments engaged in the same, or similar, kinds of activity.
8	Other perspectives	These includes Satellite Account, capital and labour accounts, informal sector etc.

The universal national accounting model can be regarded as a mix of various types of applied economic theory including government finance, balance of payments, input-output analysis, index number-theory, monetary analysis and Keynesian macroeconomic income spending theory and analysis. Furthermore, the standard national accounts reflect a clear meso-economic approach to the national economy and in particular to the production process. It gives a concrete and specific meaning to concepts used in economic theory, such as taxes, economic growth, national income, capital formation, government and government deficit.

The universal economic accounts model is an empirical model that not only defines what the national or city economy is, but it also incorporates inherent features of current national/city economies. The size, development and composition of national or city economies can be observed by applying universal economic accounts model. First, the Universal economic account model can be influenced by economic theory, the data sources and administrative realities. Second, it focuses on part of national/city economy because it excludes some economic items such as unpaid household services,

volunteer services, leisure time and tax expenditure. The standard national accounts can be considered as accounting model that is based on systematically exploiting accounting identities and a mix of general principles that are essential for translating the complex economic reality and its many specific institutions, actors, flows and stocks into a comprehensive measurement model of the national economy.

D. Specification of Operational Economic Account Model

The universal model cannot be estimated directly. The economic accounts measurement process consists of a conceptual part, i.e. the formulation of the operational model, and the actual measurement, i.e. the compilation process. It should first be translated into an operational model for a specific country or state at a specific moment in time. The operational model is formulated on the basis of the universal model, the data sources available and the national skills, resources, policies and demands. The specification of the operational model involves selection of relevant international guideline, the parts of guideline covered in the compilation, specification of coverage and industrial classification and application of these to specific state or country at specific period of time.

Accordingly, this study applies basic approaches and concepts, definition and procedures in system of national account 2008 and ISIC revision IV as well as the Regional Account Handbook (RA final draft 9) developed by the FDRE National Planning and Development Minister (NAD) to Addis Ababa City Administration in compiling city economic Account for 2008 - 2015 EFY.

With respect to the specification of scope and details of operational Economic Account, the total economy can be defined as the entire set of resident institutional units. The resident institutional units that make up the total economy are grouped into five mutually exclusive institutional units. As to the scope and details is concerned, first this study extends its effort in compiling and analyzing of gross city product and income that includes the five institutional units of the economy.

Second, with regards to coverage and industrial classification, this study follows International Standard Industrial Classification (ISIC, Rev. 4). In order to contextualize

to city administration, this study uses the Ethiopian Standard Industrial classification² (ESIC, Rev.1, 2005 E.C) which is the basis for business license registers, taxation and revenue data in Ethiopia and Addis Ababa City. ESIC has identified and classified 982 different types of activities in Ethiopia. Accordingly, this study compiles gross city product for three principal sectors (agriculture, industry and Service) which further divided into 21 sub-sectors, minor division and each group of activity identified by ISIC rev. IV. Table 3 presents 20 sectors.

Table 3: Coverage and Industrial classification of Economic Activities

S. N	Main Division
I	Agriculture, forestry and fishing
II	Industry
1	Mining & Quarrying
2	Manufacturing
3	Electricity, gas, steam and air conditioning supply
4	Water supply; sewerage, waste management and remediation activities
5	Construction
III	Service
1	Wholesale and retail trade; repair of motor vehicles and motorcycles
2	Transportation and storage
3	Accommodation and food service activities
4	Information and communication
5	Financial and insurance activities
6	Real estate activities
7	Professional, scientific and technical activities
8	Administrative and support service activities
9	Public administration and defense; compulsory social security
10	Education
11	Human health and social work activities

² ESIC is developed and revised by Minister of Trade (2005 E.C)

12	Arts, entertainment and recreation
13	Other service activities
14	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
15	Extra-territorial organizations and bodies

Each of these major divisions is further classified into minor divisions, sector, sub sector and specific activities. The detail coverage, data source, and method of estimation for particular sector is discussed in chapter five.

Specification of the period covered

This study deals with compilation of annual estimates for 2008- 2015 Ethiopian Fiscal Year and uses 2008 EFY as base year which is consistent with base year of national Economic Accounts.

E. The Compilation System

a) Compilation Methods

In this study we obtained GCP at current price by using methods like quantity valuation by market price and Valuation non- market sector by expenditure while we used quantity revaluation, deflation and extrapolation of base year methods to obtain GCP at constant price

The compilation practices and methods can be categorized into three broad groups. These include production-expenditure-income approach, integrated economic account and commodity flow methods. We briefly describe each of these methods below.

i. The production-expenditure-income approaches

The production-expenditure-income approaches constitute the still frequently used, most basic way of compiling national/regional accounts. This is the simplest approaches to National Accounting that aimed at estimating GDP and its alternative breakdowns by (a) economic activity or industry, (b) expenditure, and (c) income or cost components of value added. They provide the minimum set of data that are required by the so-called

Harrod-Domar type of macro growth models developed in economic theory.

The preparation of regional accounts gives rise to a number of special conceptual and measurement problems, which make it difficult and perhaps impracticable to compile data, based on flow of goods and services. The main sources of problems in compiling regional account include:

1. Unrestricted inter-regional mobility of labour which is non-existent between countries at national level;
2. Free movement of capital between regions; and
3. Free movement of commodities between regions for which records are not kept.

Being aware of the importance of regional accounts in indicating the gaps in the socio-economic developments of various regions in a country, SNA 2008 identified three conceptual and measurement problems due to the existence of three different types of institutional units in a region. These are:

- Regional units whose center of economic interest and activities are in one region;
- Multi-regional units whose centers of interest are in more than one region; and
- Some national units, for which the center of interest cannot be simply located geographically, like multi-regional units.

Therefore, the estimation of value addition for individual industrial sectors at the regional level poses difficulties. European regional account manual suggests some important mechanisms to play down such complexities. Accordingly, it is recommended that some important indicators can be used to allocate transactions of multiregional or even national units among regions using denominators like population size, employment size, etc.... which allow working out proportions or shares.

Besides, since the feasibility of the compilation of GCP depends on the reliability of our data sources and the applicability of the methods of estimation, the GCP statistics of Addis Ababa City is compiled from a wide range of data sources. Our estimation method will be subject to revisions with securing more appropriate techniques and data sources over time.

There are three general methods for regionalization of gross value added of multi-regional enterprise. These includes bottom-up, Pseudo-bottom-up and top-down methods.

Bottom-up methods: The bottom-up or ascending method of estimating a regional aggregate involves collecting data at the local Kind of activity unit (KAU) or the residence of households and aggregating these values to get a regional total. In This method elements for compiling the aggregate are directly collected at the local KAU level or residence of the households. This method is used for uni-regional enterprises or KAUs and households if full information is available at city level.

A pseudo-bottom-up method can be followed where data for the local KAU or residence of households are not available. This method is used to allocate gross value added of multiregional enterprises using regional indicators. The multi-national establishments with registered local units in the jurisdiction of the city are recognized as units with economic interest within the boundary of the city of Addis Ababa. Accordingly, multi-national industries that have operating activities in the city (e.g. Banks, Insurance Co., TELECOM, EEPSCO, Airlines, and NGOs) are considered with their parts that operate in the city. Extra-territorial organizations (International & continental organizations, etc.), which obviously pay compensation of employees to the residents are also indirectly captured through number of persons engaged and the corresponding wage rate, which is treated as compensations of employees received from their respective international organizations.

Concerning the regional accounts time horizon, our estimates are prepared on the basis of accrual recordings in line with the Ethiopian Government Fiscal Year and of course adjustments have been made for some activities which have recordings based on Gregorian calendar (Banks, Insurance Co., Airlines, Electricity, ethio-telecom, and Non-governmental organization).

Top-down methods: The top-down method used to distribute national aggregates using appropriate regional indicators in situations where the data is only available for city and not for local units.

Compilation of gross city product can be estimated using production, income and

expenditure methods. The production approach, which is also called the output approach, measures GDP as the difference between value of output less intermediate consumption during an accounting period. The income approach measures GDP as the sum of the factor incomes generated to the economy while the expenditure approach measures the final uses of the produced output as the sum of final consumption, gross capital formation and exports less imports. The production method provides more comprehensive data by industries and used to measure relative contribution of different sectors to city economy. The advantages of income method include supporting to close monitoring of the progress of the corporate sector that guides economic policy for growing modernization of the economy, expansion of tax base from the growth of compensation of employees, operating surplus, mixed income of household unincorporated enterprises and help for the introduction or expansion of social policy with respect to health insurance, pension and contribution to social security.

$$\text{Production: } GVA_t = \sum_{j=1}^{20} (Q_{jt} * P_{jt} - IC_{jt}) \text{ ----- (1)}$$

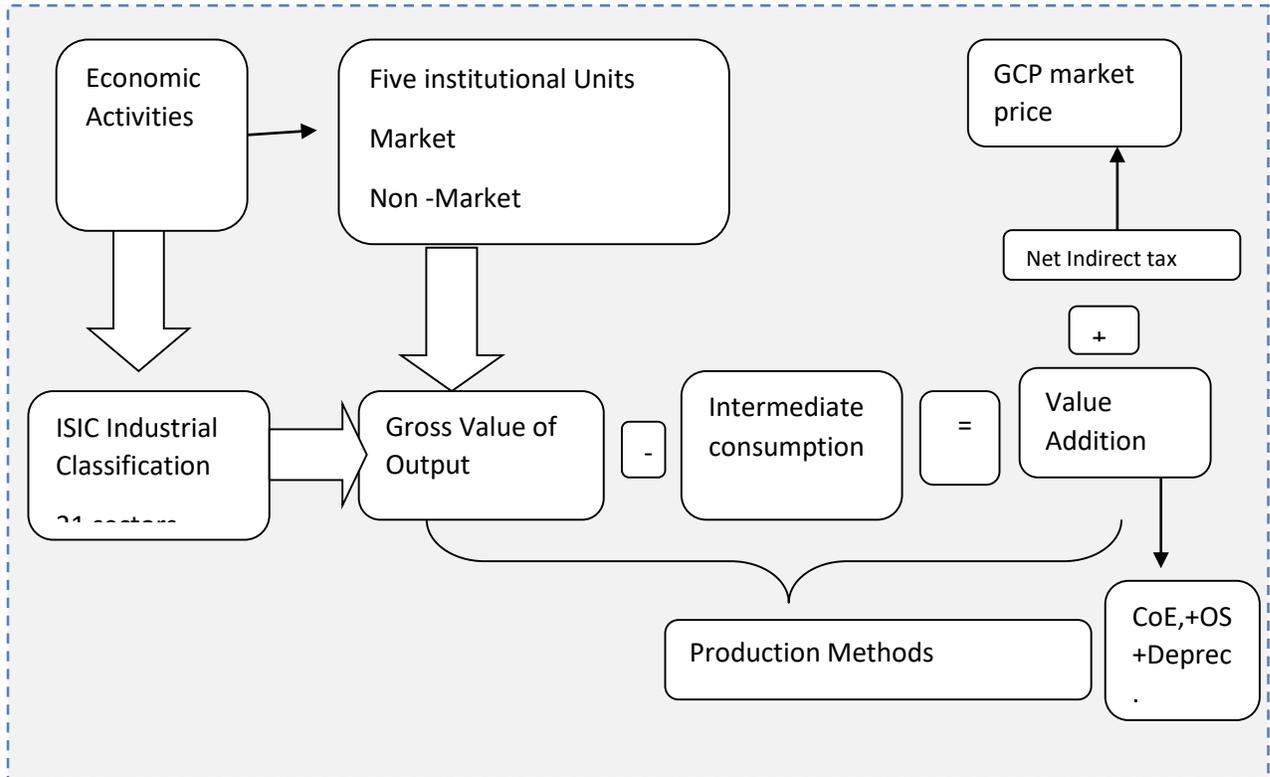
Where GVA represent gross value added and IC denotes Consumption of intermediate inputs, Q_{jt} refer to quantity of product, P_{jt} price of output, t refers to respective year $j=21$ sub-sectors.

Expenditure approach measures the final uses of the produced output as the sum of final consumption, gross capital formation and exports less imports. The expenditure side GDP is measured by:

$$Y = C + I + G + (X - M) \text{ where}$$

C= private Consumption, I= investment, G=government spending, X-M= net export

$$\text{Expenditure GDP: } Y = C + I + G + Nx \text{ ----- (2)}$$



Income approach measures GCP as the sum of the factor incomes generated in production of goods and services in the economy. GCP is the summation of Compensation of Employees (COE), Depreciation (Consumption of fixed capital) or (CFC), Operating Surplus (OS), taxes on production, less subsidies of the total city economy. If complete data based on audited account and reports of an enterprise are available, the final result of GCP estimates obtained by the production method or income method are expected to be equal.

$$\text{Therefore, } GVA = (COE + CFC + OS).$$

$$\text{Income: } Y = COE + CFC + OS \text{ ----- (3)}$$

The GCP is usually presented in nominal and real terms. The Nominal GCP measures

the value of the outputs of the economy at current prices. The movements in current prices are affected by changes in prices and changes in volumes. The Real GCP measures the value of an economy's output using the prices of a fixed base year. A base year is the year used for comparison in the measure of a business activity or economic index. For Base year the Nominal GCP equals Real GCP. The Criteria used for selection of base year are economically stable year, (no manmade or natural catastrophe adversely affecting the macro economy), availability of adequate and complete data and consistency with National Economic Account. Two methods used for constructing real GCP are using GDP deflator or extrapolating the base year GCP using Volume index. 2008 E.C is the base year for the estimation of Real GCP in this study.

$$\text{Real GCP} = \sum_{j=1}^{N=20} \frac{\text{current Valueadded}}{\text{CPI (2008)}}$$

or

$$= \sum_{j=1}^{21} \text{Volume Index} * \text{VAo}$$

Where VAo = Value addition of base year, j= sectors; n= number of sectors; CPI=consumer price index

This city GCP estimation demonstrates both activity level value addition and regional total value addition of the final goods and services produced by the resident units in Addis Ababa during the period between 2008 EFY to 2015 EFY. The activities included in the estimation have been screened based on the principle of the center of economic interest (SNA 2008) & ISIC-4 international industry classification as well as Eurostat Regional accounts and other relevant manual. To contextualize to national and city level, we used Ethiopian Standard Industrial classification (MOT³, 2005) to develop our operational model.

For the Gross City product estimation at current and constant basic price, the 20 major sector activities are considered. These are: Agriculture and Allied Activities; Mining and Quarrying; Manufacturing, Electricity, Water, Construction, Financial and Insurance Activities, Trade, Accommodation and Food Service Activities, Transportation &

³ Ministry of Trade and Industry

Storage, Information and Communication, Real Estate Activities, Public Administration, Education, Human health and social work activities, Other service activities, Private Households With Employed Person, Professional, Scientific and Technical Activities, Administrative and Support Service Activities, and Arts, Entertainment and Recreation Activities. Since the applicability, availability, accessibility, and timeliness of data determined the coverage, the selection of data sources, and estimation method and consequently the result of our GCP estimation, this estimation is made using this (Production) Approach.

ii. Integrated accounting approaches

This approach extends the production –expenditure-income approach to include the institutional sectors of SNA 2008 in the compilation processes. With the inclusion of the institutional sector dimension not only a more comprehensive picture of the economy can be provided, but in general also a more accurate one, as the number of data cross checks increases significantly. The extension of the previous compilation approaches to this more comprehensive approach requires that data not only be compiled on the basis of establishments that are grouped together by industries, but also for institutional units - corporations, households, government units - that together define the institutional sectors.

iii. Commodity flow approach

The commodity flow approach introduces a systematic breakdown of the supply and use rows by products or CPC categories, as well as by including data on labor inputs per industry. This approach is strongly influenced by the Leontief input-output models which are a further breakdown and extension of the Harrod-Domar growth models. The inclusion of additional detail on output, intermediate consumption and labor inputs serves more comprehensive analyses based on production functions. This method can potentially improve the reliability of the GCP data as compared to the estimates resulting from the production-expenditure-income approaches which often only reconcile data at the aggregate GDP level. Due to lack of data, the commodity flow method is not applied in this study.

F. Frame of References and Data Sources

The backbones for compiling national/city economic accounts statistics are the frames of reference. Frames of references provide a listing of all the existing enterprises, institutions, persons and households and their major economic characteristics. Frames of reference serve two major roles. Firstly, they are used to draw samples for surveys and to gross up surveys or administrative data for units missing, e.g. relatively small units or units exempted from registration. Secondly, they are used to combine different data sources and to transform the many partial estimates into a complete estimate about all producers, employees or consumers in the national/city economy. In compilation practice, we have combined different registers are used for different groups of producers. First, Business License registers from Trade and Industry Bureau is used as frame of reference. The Business registers enterprises data /information from 2008—2015 on Business licenses. Second, Business income statements data from 2008-2015 E.C with federal ministry of revenue is served as frame of reference and data source for those sectors that have no statistical survey at CSA. Third, charities and association register list and Budget code list with Addis Ababa Bureau of Finance has been used as frame of reference for Non-Governmental Organizations and government institutions, respectively. Fourth, Vehicle license register with Addis Ababa vehicle and driver license and control agency for passenger and Federal Transport Authority for freight transport is used as frame of reference and data source for transport sector. Fifth, national bank registration list is served as sample frame for financial sector. As to dry waste and sewerage service we used enterprises registration lists with Addis Ababa water and sewerage Authority, Addis Ababa Dry waste management agency and Sub city waste management office were used as frame of reference for collection of data for water and waste management sector. License Registration with Bureau of Education and Health were used as frame of reference for non- governmental education and non-government health sub sector data collection and compilation. In order to obtain a complete and up-to-date frame of reference, this study combined the data from statistical, administrative and mini-survey where data is not available from any other source.

For those sectors for which the data collection undertaken from sample, we used the following sampling technique formula to determine sample size.

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2 \cdot (N-1) + z^2 \cdot p \cdot q}$$

Where z= standard vitiate at given confidence level, n= size of sample, e= acceptable error (precision), N= size of population, p=sample proportion, q= 1-p

The data sources used for GCP compilation can be categorized into three main groups, namely administrative data, Census/ survey data and other sources such as research reports. The economic indicators have been collected both from primary and secondary data sources.

The primary data collection is made using mini-surveys for some business entities where sufficient official data is not available such as transport sector, education, health, etc. The secondary data source, which is largely utilized in this GCP estimation were collected from official statistical reports of CSA and administrative reports from sector bureau and ministries have been employed. Care has been taken to overcome shortcomings in the quality of data and reliability of sources. In cases where data quality is uncertain, triangulation techniques have been applied. In areas where data are not available for some years, extrapolation/interpolation techniques are applied to fill the data gaps through benchmark estimation. Accordingly, appropriate indicators such as growth in employment, price rates, price indices, and wage rates, which indirectly reflects production, growth are applied for extrapolation/interpolation of the value addition by economic activity.

Care has been taken to overcome shortcomings of the data source available. Fortunately, the city level statistics are published by CSA including manufacturing sector and urban employment unemployment survey. As can be inferred from Table 4, administrative data such as business tax data was used for those sectors that lack survey data. Poor availability and quality of data became areas of key challenges for GCP compilation. However, efforts were made to fill such gaps through conducting mini

surveys and some primary data collection efforts using questionnaires especially for relevant institutions opened the way to get enough data for our city economic account teams.

In order to follow as a guideline and minimize future challenges, we have mapped comprehensive sources and method document to serve as a guideline for the current and future compilation of economic account of the city. In addition, we combined efforts in data collection for production and expenditure approaches to minimize cost and time requirement for data collection by deploying fifteen data collectors for two months besides data collection by sector researchers.

Table 4: Data sources for Gross City Product Compilation

Sector	Source (s) of data	Type of indicator(s)/data
Agriculture, forestry and fishing	Central statistical Agency	Livestock data from Welfare monitoring Survey (2011,2016)
	Urban agriculture and Farmer Development Commission	Livestock and Crop statistics
	Agricultural Inputs supply Enterprise	Agricultural Inputs data
Mining and Quarrying	Environmental Protection Authority	Data on forestry, Data on Mining and quarry, royalty
Manufacturing	Central statistical Agency	small scale manufacturing industries survey (2008,2009), large & medium scale manufacturing industries survey (2008,2009;2010,2013), consumer price index, retail price bulletins, reports, Urban Employment Survey Unemployment (2016,2018,2020,2022)
Electricity, gas, steam and air conditioning supply	Ethiopian Electric Utility Services Ethiopian Electric power	Annual Income and loss statement and data on Electric Utility for Addis Ababa

Sector	Source (s) of data	Type of indicator(s)/data
Water supply; sewerage, waste management and remediation activities	Addis Ababa Water and sewerage service authority, Addis Ababa solid waste Cleansing agency, Private solid waste and sewerage service enterprises, Solid waste collection share enterprises	Data on Addis Ababa Solid waste management, data on income statement from water, solid waste and sewerage services, Sample survey on solid and sewerage service enterprises
Public administration and defense; compulsory social security	Addis Ababa Finance Bureau, Human resource development and Public Service Bureau	IBEX Expenditure and budget report for city, Employee statistics
Financial and Insurance Activities	Banks, Insurance and Micro finance Enterprises	Annual Financial reports of respective establishments
Information and Communication	Ethio-Telecom, Federal Revenue Authority, CSA, Addis Ababa Trade Bureau	Annual Income and profit statements, Urban Employment Unemployment Survey (2015/16-2019/20,2022), Enterprise registration data base
Accommodation and Food Service Activities, Other service activities, Professional, Scientific and Technical Activities, Administrative and Support Service Activities and Arts, Entertainment and Recreation; Wholesale and retail trade; repair of motor vehicles and motorcycles	Federal Revenue Authority, CSA, Addis Ababa Trade Bureau	Income and profit statements, Urban Employment Unemployment Survey (2016,2018,2020,2022), Enterprise registration data base
Construction	Central statistical Agency, Ethiopian Investment Commission, Addis Ababa Investment Agency, Housing Development and Administration Bureau, Government Development enterprises at city and Federal level residing in Addis Ababa	Number of house stock from Welfare monitoring Survey (2011,2016), Poverty Level assessment (2015), Manufacturing Surveys (2008,2009,2013 E.C), Distributive and trade Survey (2003,2006) Capital expenditure of respective public enterprises

Sector	Source (s) of data	Type of indicator(s)/data
Transportation & Storage	Federal Transport Authority, Addis Ababa vehicle driver licensing and controlling Authority, CSA, Trade Bureau, Federal Revenue Authority, Ethiopian Airline, Addis Ethiopian Airport enterprise, Sheger, Anbesa, Public Service Buses Transport Service, Ethiopian Railway Corporation	Number of vehicles by categories, fare per categories, performance parameters, Income and profit statements, Urban Employment Unemployment Survey
Human health and social work activities	Health Bureau, Minister of Health, finance Bureau, Private health enterprise from tax data	IBEX, Annual health and related indicators, mini survey on health fee per patient for non-government health activities income statement
Education	Education Bureau, Minister of Education, Finance Bureau,	IBEX, Annual education statistics, mini survey on health fee per student for non-government health activities
Private Households with Employed Persons	CSA	Urban Employment Unemployment Survey (2016,2018,2020,2022)
Real Estate Activities	Welfare Monitoring Survey, (Addis Ababa Poverty Level Assessment Study (2015), Addis Ababa City Investment Agency, Federal Investment Commission, CSA	Stock of housing, Real Estate operational investment projects, Housing rent data

G. Data Processing and level of Aggregation

We used two software- Excel 2016 and SPSS 20 for data processing purposes. SPSS-20 helped to obtain descriptive statistics and relevant index from income and profit statements of businesses. We used the Excel software to sort and filter each activity from huge business license registration data base. In addition, computation of each piece of components and consolidation from different files was done using Excel. Excel book was opened for each year. Each sheet assigned for a particular activity were recorded as row and components of value-added such as compensation of employee, operating surplus, gross output, depreciation and total number of enterprises recorded as column. Each piece of data from heterogeneous sources were encoded and checked to respective sector.

The compilation framework has been developed in an Excel spreadsheet, consisting of a number of data input sheets, with links to intermediate work sheets and final estimation sheets. The data for the GCP is entered onto a number of data input spreadsheets the interlinked series of excel spreadsheets allows for the compilation of GCP and value added by industry at current and constant prices using single deflation and, in some cases, double deflation method, through the production approach. The spreadsheets include number of enterprises, data from the financial statements of enterprises, physical performance parameters, price indices such as CPI, Wage index, government budget to estimate the production of government administration, health, education and social services, tax and subsidies data (details of all spread sheets used in the compilation. The determination of the level of aggregation is determined by the aim of city economic account compilation, availability of relevant data and skilled personnel. Efforts have been made to compile city economic account at different level of aggregation such as sector, and major industry for two years.

H. Quality Assessment and Plausibility checks

The available data are very heterogeneous in all respects, such as scope, concepts, detail, reliability, time of availability and frequency. As a consequence, many estimates cannot directly be based on the available data. Thus, we used the frame of references for completing and combining surveys and administrative data, in updating former estimates and in estimating parts of the economy on which hardly any information is available. The compilation process is based on three estimation tools, namely accounting identities; assumptions for completing and plausibility checks.

Accounting Identity: Compiling city economic accounts statistics amounts to exploiting as best as possible the many accounting identities such as supply is equal to demand (both in current and constant prices) and the three basic ways to estimate GDP. Accounting identities ensure consistency, can act as plausibility check and allow residual estimates. Assumptions are essential in combining and completing the basic set of data. Many types of assumptions are used, for example grossing up of a survey on the basis of a frame of reference; the use of fixed ratios, the use of specific conventions, assumptions based on fragmentary qualitative information, expert opinions, and historical trends.

Plausibility checks are very important for the reliability of city accounts statistics. We have used different types of plausibility checks in GCP compilation. These include:

- Comparison of different data/estimates;
- Investigation of all “strange” developments and ratios (numerically, conceptually) by looking for a plausible explanation;
- Investigation of the data on the presence of expected developments; in case of absence look for a plausible explanation.
- Before actually starting to estimate, various plausibility checks on the various potential input-data are made including check on the plausibility over time of one variable in one data source.
- Check on the plausibility of the level and development of ratio between different variables in one data source, e.g. between the volume of labour and the output.
- Check on the plausibility of values and volumes in one data source,
- Check on the plausibility by comparing different data sources, e.g. a detailed production statistic is compared with more general information on the developments in one industry,
- Comparing first estimates made from data sources and the reliable estimate made from mixed sources e.g. urban agriculture

I. The concept of Boundaries

a. Boundaries: Economic Territories and Resident Units

The accounts of the SNA are compiled for resident institutional units grouped into institutional sectors and subsectors. An institutional unit is said to be **resident** within the economic territory of a country/region when it maintains a center of predominant economic interest in that territory, that is, when it engages, or intends to engage, in economic activities or transactions on a significant scale either indefinitely or over a long period of time, usually interpreted as one year.

The **economic territory** includes the land area, airspace, territorial waters, including jurisdiction over fishing rights and rights to fuels or minerals. In a maritime territory, the economic territory includes islands that belong to the territory. The economic territory also includes territorial enclaves in the rest of the world.

Economic territory has the dimensions of physical location as well as legal jurisdiction. The concepts of economic territory and residence are designed to ensure that each institutional unit is a resident of a single economic territory.

Similarly, regional/city boundaries could be defined; generically, to refer to institutional units operating in the regional/city territory with a predominant economic interest in that particular region/city.

b. The production boundary

The activity of production is fundamental. In the SNA, production is understood to be a physical process, carried out under the responsibility, control and management of an institutional unit, in which labour and assets are used to transform inputs of goods and services into outputs of other goods and services. All goods and services produced as outputs must be such that they can be sold on markets or at least be capable of being provided by one unit to another, with or without charge. The SNA includes within the production boundary all production actually destined for the market, whether for sale or barter. It also includes all goods or services provided free to individual households or collectively to the community by government units or NPISHs.

c. Asset Boundary

Assets; as defined in the SNA, are entities that must be owned by some unit, or units, and from which economic benefits are derived by their owner(s) by holding or using them over a period of time.

All goods and services supplied to the economy by means of production, imports or the disposal of produced assets must be used for exports, consumption (intermediate or final) or as part of capital formation. The boundary line between those products that are retained in the economy and are used for consumption and those products that are used for capital formation is known as the **asset boundary**. Therefore, the asset boundary

for fixed assets consists of goods and services that are used in production for more than one year.

d. Final consumption, intermediate consumption and gross fixed capital formation

Consumption is an activity in which institutional units use up goods or services, but there are two quite different kinds of consumption. **Intermediate consumption** consists of goods and services used up in the course of production within the accounting period. **Final consumption** consists of goods and services used by individual households or the community to satisfy their individual or collective needs or wants. The activity of **gross fixed capital formation**, like intermediate consumption, is restricted to institutional units in their capacity as producers, being defined as the value of their acquisitions less disposals of fixed assets.

J. Timing and Valuations of Expenditures

Consumption Expenditure: In accordance with the general principles adopted in the SNA, expenditures should be recorded when the payables are created, that is, when the purchaser incurs a liability to the seller. This implies that expenditure on a good is to be recorded at the time its ownership changes while expenditure on a service is recorded when the delivery of the service is completed. Non-monetary transactions are recorded when the goods involved are made available to the household.

Household expenditure is recorded at the **purchasers' prices** paid by households including any taxes on products that may be payable at the **time of purchase**.

Gross Capital Formation: the general principle for the time of recording of acquisitions less disposals of fixed assets are when the ownership of the fixed assets is transferred to the institutional unit that intends to use them in production. Except in two special cases, this time is not generally the same as the time at which the fixed assets are produced. Nor is it necessarily the time at which they are put to use in the production of other goods or services.

K. Standard Classifications of GCE components

The accounts of the SNA are built around a small number of conceptual elements, in particular sectors, transactions and classifications of the items subject to transactions and other flows, especially assets and liabilities. For each of these elements, a hierarchical classification exists. Different international classification systems external to the SNA that are frequently used and referred to in the process and presentation of SNA related economic indicators. As relevant to this document, the appropriate classifications recommended to be used are based on the **classification of expenditure according to purpose**. These include: Classification of the functions of government (COFOG), Classification of individual consumption according to purpose (COICOP), Classification of the purposes of nonprofit institutions serving households (COPNI), Classification of the outlays of producers according to purpose (COPP). (N.B. among these, only the COICOP classification is used in this study).

4. COVERAGES, SOURCES OF DATA & METHODS OF ESTIMATION and RESULTS

1) EMPLOYMENT Performance of CITY Economy

Table 5: Employment Performance

Sector/EFY	2008	2009	2010	2011	2012	2013	2014
Agriculture	6775	7978	9182	12517	15852	14907	13,961
Mining & Quarrying	5462	6025	6589	4241	1893	3173	4,452
Manufacturing	207709	206399	205090	182750	160411	170789	181,166
Electricity	7293	7136	6980	6726	6472	7459	8,446
Water	9997	19011	28026	40043	52061	49991	47,920
Construction	94341	113567	132793	146995	161197	144486	127,775
Financial and Insurance Activities	60737	63186	65636	70187	74739	71777	68,815
Trade	289201	303255	317309	332014	271940	281660	291,380
Accommodation and Food Service Activities	82204	83746	85289	63246	41203	58366	75,528
Transportation & Storage	125979	123604	121229	110056	98883	104771	110,659
Information and Communication	32352	30396	28441	26988	25536	28841	32,146
Real Estate Activities	3689	3160	2631	1664	698	4249	7,800
Public Administration	46972	62912	78853	55433	32013	53298	74,583
Education	80825	77711	74597	88497	102398	95141	87,884
Human health and social work activities	47576	52624	57673	54962	52251	57176	62,100
Other service activities	133634	117059	100484	185592	270700	210689	150,677
Private Households With Employed Pers.	106813	130112	153412	170411	187410	173293	159,176
Professional, Scientific and Technical Activities	46822	47233	47645	36380	25115	20890	16,664
Administrative and Support Service Activities	50622	51941	53260	54083	54907	46002	37,096
Arts, Entertainment and Recreation	5209	9143	13077	9949	6822	7418	8,014
	1,444,212	1,516,204	1,588,196	1,615,349	1,642,501	1,604,372	1,566,242

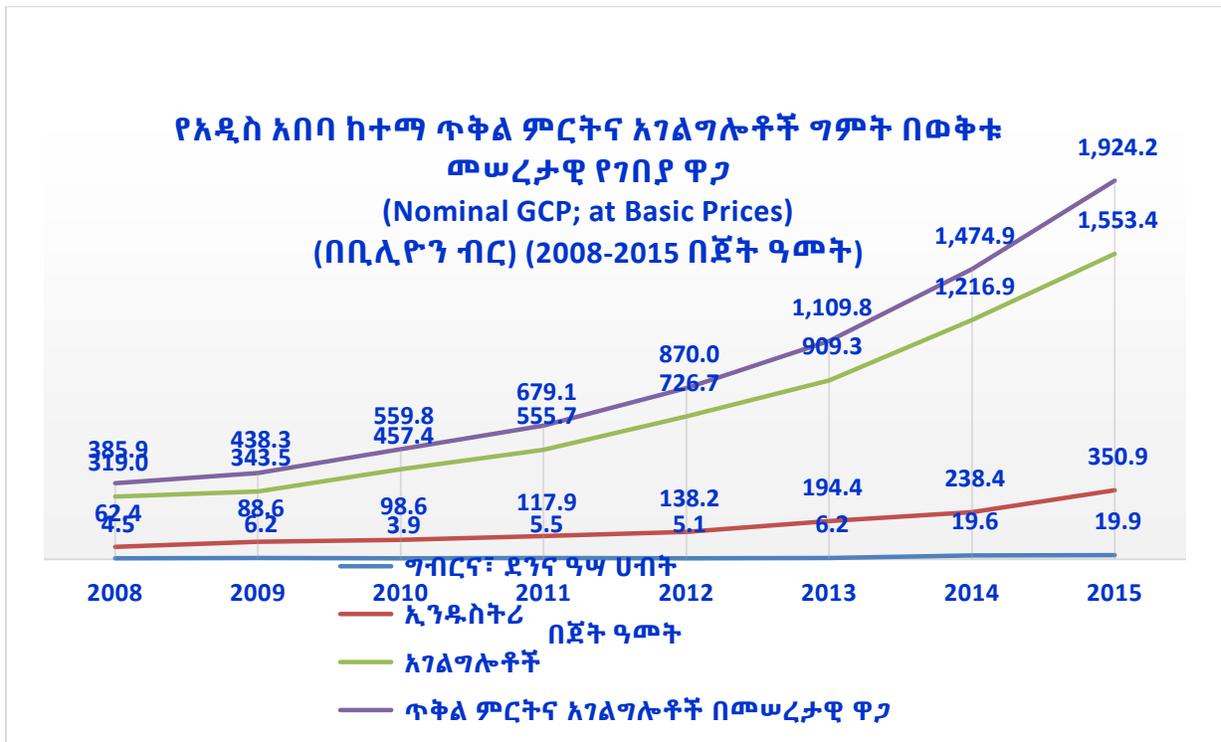
Table 6: Growth Rates and Shares of Employment by Industry

Sector	Growth rate		Share			Average share
	2012	2014	2010	2012	2014	
Agriculture	72.64	-11.93	0.58	0.97	0.89	0.81
Mining & Quarrying	-71.27	135.18	0.41	0.12	0.28	0.27
Manufacturing	-21.79	12.94	12.91	9.77	11.57	11.42
Electricity	-7.28	30.50	0.44	0.39	0.54	0.46
Water	85.76	-7.95	1.76	3.17	3.06	2.66
Construction	21.39	-20.73	8.36	9.81	8.16	8.78
Financial and Insurance Activities	13.87	-7.93	4.13	4.55	4.39	4.36
Trade	-14.30	7.15	19.98	16.56	18.60	18.38
Accommodation and Food Service Activities	-51.69	83.31	5.37	2.51	4.82	4.23
Transportation & Storage	-18.43	11.91	7.63	6.02	7.07	6.91
Information and Communication	-10.21	25.89	1.79	1.55	2.05	1.80
Real Estate Activities	-73.47	1017.48	0.17	0.04	0.50	0.24
Public Administration	-59.40	132.98	4.96	1.95	4.76	3.89
Education	37.27	-14.17	4.70	6.23	5.61	5.51
Human health and social work activities	-9.40	18.85	3.63	3.18	3.96	3.59
Other service activities	169.40	-44.34	6.33	16.48	9.62	10.81
Private Households With Employed Pers.	22.16	-15.07	9.66	11.41	10.16	10.41
Professional, Scientific and Technical Activities	-47.29	-33.65	3.00	1.53	1.06	1.86
Administrative and Support Service Activities	3.09	-32.44	3.35	3.34	2.37	3.02
Arts, Entertainment and Recreation	-47.83	17.47	0.82	0.42	0.51	0.59
Total	3.42	-4.64	100.00	100.00	100.00	100

2) The Size and Structure of the City Economy (2008-2015)

In this section we present the results of empirical research in measuring the size and structure of city economy. The most common measure of city economy is the Gross city product during particular period of time. The result of the study indicates that the size of city economy has increased from **385.93** billion Birr in 2008 to **686.08** billion Birr in 2015 in real term. In nominal term the city economy reached from 386.03 billion in 2008 to 718.35 billion in 2013 EFY.

Fig. 1: Gross City Product Current Market Price (Billion Birr)



The production structure of an economy is the fundamental determinant of its economic performance. When we look at the structure of city economy, the service sector has accounted over 84% share of Gross city product of the economy. The industry sector has registered on average about 15% share of Gross city product during period. The share of urban agriculture in Gross city product was about 1%.

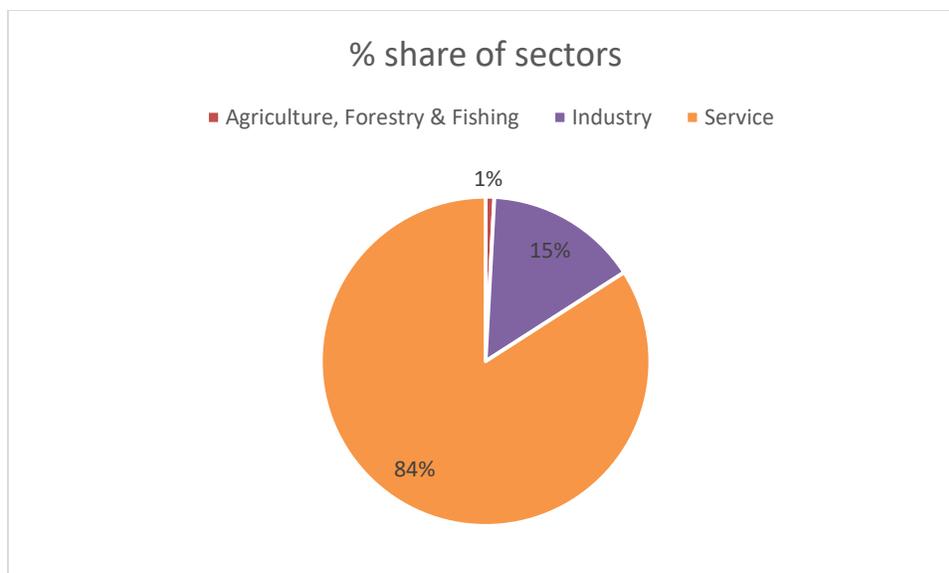


Table 7: Size and percentage share of Gross City Product by Industry at 2008 base series

Billion Birr								
Sectors	2008	2009	2010	2011	2012	2013	2014	2015
Agriculture, Forestry & Fishing	4.51	5.14	2.81	3.78	4.59	5.57	4.90	5.82
Industry	62.37	75.14	70.94	71.29	77.73	90.05	97.96	105.03
Service	319.05	342.37	378.85	415.65	468.80	493.25	527.58	575.24
GVA -Total	385.93	422.66	452.60	490.72	551.12	588.87	630.45	686.08
Taxes on Products	6.61	6.89	5.44	4.93	3.16	2.70	5.12	4.92
TOTAL GCP at Market Prices	392.54	429.56	458.05	495.65	554.28	591.57	635.56	691.01
<i>Annual growth rate</i>		9.52	7.08	8.42	12.31	6.85	7.06	8.82
	Percentage share							
Sector	2008	2009	2010	2011	2012	2013	2014	2015
Agriculture, Forestry & Fishing	1.15	1.20	0.61	0.76	0.83	0.94	0.77	0.84

Industry	15.89	17.49	15.49	14.38	14.02	15.22	15.41	15.20
Service	81.28	79.70	82.71	83.86	84.58	83.38	83.01	83.25

FIG.2: Real Gross City Product (Billion Birr)

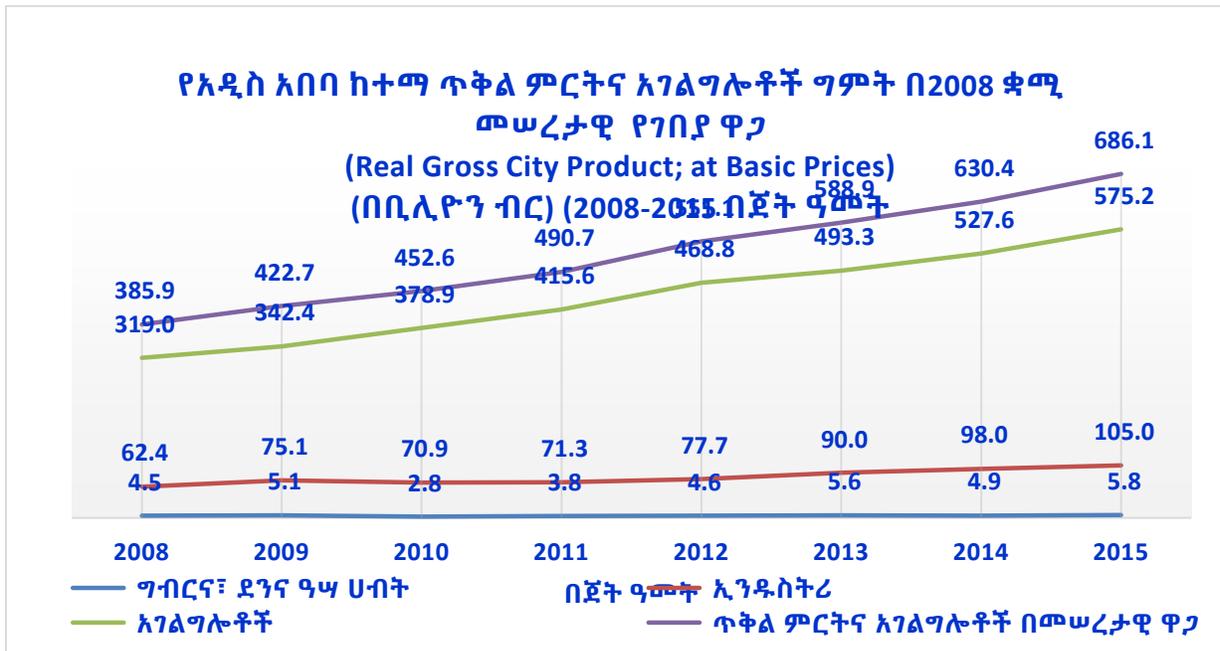


Table 8: Size and percentage share of Gross City Product by Industry at current basic prices

E. Activity	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C
Agriculture, Forestry & Fishing	4.51	6.19	3.85	5.48	5.08	6.17	19.55	19.91
Industry	62.37	88.63	98.56	117.89	138.24	194.35	231.94	350.95
Services	319.05	343.49	457.43	555.71	726.67	909.26	1,216.94	1,553.36
GVA -Total	385.93	438.31	559.84	679.08	869.98	1,109.79	1,468.43	1,924.22
Taxes on Products	6.61	7.16	7.60	9.03	8.16	9.97	12.53	13.87
Total GCP at Market Prices	392.54	445.47	567.44	688.11	878.14	1,119.75	1,480.96	1,938.09
		13.57	27.73	21.30	28.11	27.56	32.32	31.04
	Percentage share							
Sector	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C
Agriculture, Forestry & Fishing	1.17	1.41	0.69	0.81	0.58	0.56	1.33	1.03
Industry	16.16	20.22	17.60	17.36	15.89	17.51	15.79	18.24
Service	82.67	78.37	81.71	81.83	83.53	81.93	82.87	80.73

The result of the study indicated that manufacturing, construction, trade, Information and communication, and transport and storage are the dominate activities in the city economy. These sectors account about 81.18% during 2008-2015. This implies that the city economy needs to be diversified to wider sectors to for sustained economic growth and jobs.

Table 9: Percentage share of GVA by Top Sectors (average 2013-2015) at constant price

E. Activity	Average Share 2013-2015	Rank
Agriculture, Forestry & Fishing	0.85	10
Mining and Quarrying	0.07	19
Manufacturing Total	10.86	3
Electricity; gas, steam and Air Conditioning Supply	0.47	15
Water supply; sewerage, waste management and remediation activities	0.06	20
Construction	3.92	6
Wholesale and retail trade; repair of motor vehicles & Motorcycles	48.09	1
Transport and Storage	3.97	5
Accommodation and food services	0.96	8
Information & Communication	8.32	4
Financial and Insurance Activities	14.70	2
Real Estate Activities	3.60	7
Professional, scientific and technical activities	0.56	12
Administrative & support Service Activities	0.49	13
Public Administration & Defense; Compulsory social security	1.11	9
Education	0.76	11
Human Health & Social work activities	0.57	14
Arts, entertainment and recreation	0.10	18

E. Activity	Average Share 2013-2015	Rank
Other Service Activities	0.30	16
Private Households with Employed Persons	0.22	17

Table 10 presents the results of economic performance by sub-sectors. The results indicated that sectoral performances in the economy differ across time and sub-sectors of the economy.

Table 10: Addis Ababa Gross City Product, 2008-2015; at current prices (amount in Billion Birr)

E. Activity	Billions Birr							
	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C
Agriculture, Forestry & Fishing	4.51	6.19	3.85	5.48	5.08	6.17	19.55	19.91
Industry	62.37	88.63	98.56	117.89	138.24	194.35	238.44	350.95
Services	319.05	343.49	457.43	555.71	726.67	909.26	1,216.94	1,553.36
GVA -Total	385.93	438.31	559.84	679.08	869.98	1,109.79	1,474.94	1,924.22
Taxes on Products	6.61	7.16	7.60	9.03	8.16	9.97	12.53	13.87
Total GCP at Market Prices	392.54	445.47	567.44	688.11	878.14	1,119.76	1,487.47	1,938.09
		14.53	27.41	21.03	28.30	28.18	32.32	31.04
Average Annual growth		13.57	27.73	21.30	28.11	27.56	32.32	31.04
	Percentage share							
Sector	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C

E. Activity	Billions Birr							
	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C
Agriculture, Forestry & Fishing	1.17	1.41	0.69	0.81	0.58	0.56	1.33	1.03
Industry	16.16	20.22	17.60	17.36	15.89	17.51	15.79	18.24
Service	82.67	78.37	81.71	81.83	83.53	81.93	82.87	80.73

Table 11 presents result of Gross city product estimate at 2008 base prices. The results indicated that GCP from service economic activities has on average increased steadily during the period.

Table 11: Addis Ababa Gross City Product, 2008-2015; at 2008 base prices (amount in Billion Birr)

E. Activity	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C
Agriculture, Forestry & Fishing	4.51	5.14	2.81	3.78	4.59	5.57	4.90	5.82
Mining and Quarrying	0.01	0.01	0.38	0.27	0.16	0.00	0.93	0.42
Manufacturing Total	24.38	44.48	46.75	51.43	56.70	62.51	69.76	74.64
Electricity; gas, steam and Air Conditioning Supply	3.70	4.90	3.18	2.64	4.54	2.63	2.63	3.78
Water supply; sewerage, waste management and remediation activities	0.64	0.74	0.55	0.47	0.47	0.40	0.24	0.43

E. Activity	2008 E.C	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C
Construction	33.64	25.01	20.07	16.48	15.87	24.51	24.41	25.75
Wholesale and retail trade; repair of motor vehicles & Motorcycles	155.94	162.95	191.34	225.91	250.81	273.83	317.33	325.14
Transport and Storage	21.88	24.27	27.59	28.38	27.46	22.68	24.23	28.72
Accommodation and food services	8.86	9.38	5.96	2.38	7.21	5.86	5.39	7.13
Information & Communication	37.74	31.85	27.87	27.78	44.47	49.07	52.95	56.57
Financial and Insurance Activities	60.42	71.22	80.79	91.71	99.90	95.11	79.09	105.85
Real Estate Activities	14.88	15.40	16.92	19.73	18.14	20.86	23.60	24.17
Professional, scientific and technical activities	5.82	7.91	2.22	1.74	1.63	2.02	5.24	3.43
Administrative & support Service Activities	2.74	2.52	6.49	3.09	2.92	3.32	2.57	3.41
Public Administration & Defence; Compulsory social security	3.12	5.42	6.22	6.28	7.04	7.13	6.22	7.87
Education	2.62	2.75	6.40	3.98	3.28	5.30	4.23	4.95
Human Health & Social work activities	2.98	4.53	2.40	2.24	2.61	3.20	3.95	3.77
Arts, entertainment and recreation	0.32	1.00	0.50	0.17	0.20	0.23	1.14	0.61
Other Service Activities	1.56	3.00	4.04	2.21	2.60	2.93	0.43	2.30
Private Households with Employed Persons	0.17	0.18	0.12	0.06	0.54	1.70	1.21	1.33
GVA -Total	385.93	422.66	452.60	490.72	551.12	588.87	630.45	686.08
Taxes on Products	6.61	6.89	5.44	4.93	3.16	2.70	5.12	4.92
TOTAL GCP at Market Prices	392.54	429.56	458.05	495.65	554.28	591.57	635.56	691.01

Table 12: Informal Value Added (2008-2015)

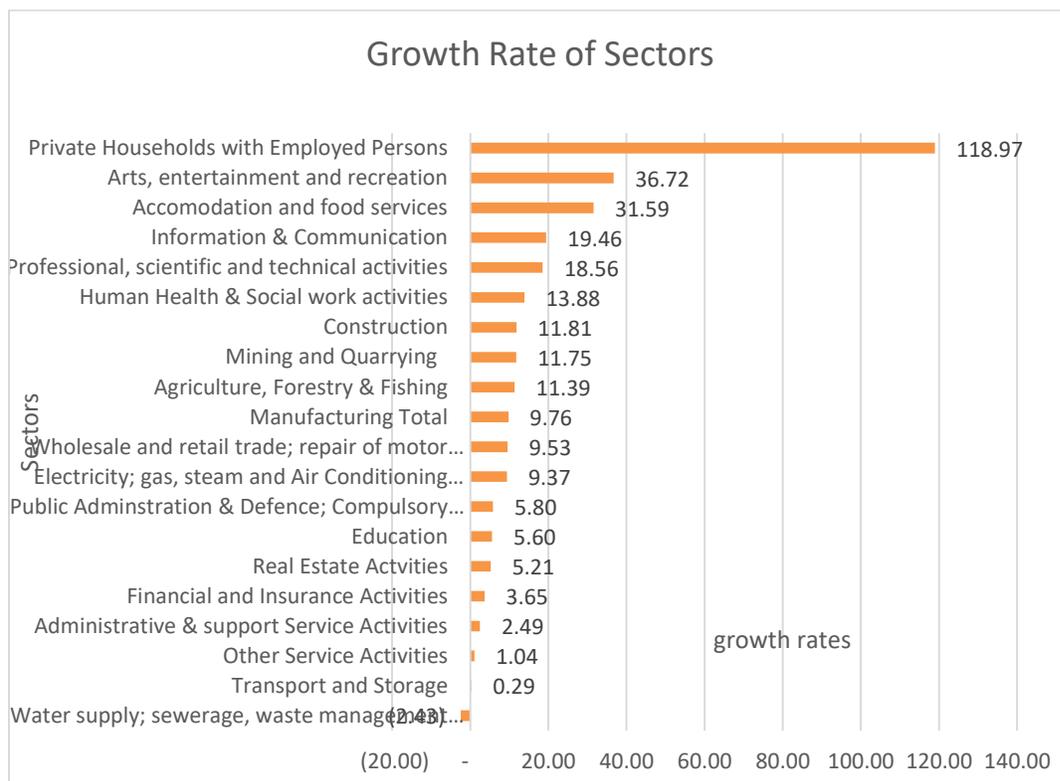
Informal Value Added , Million Birr								
	2008	2009	2010	2011	2012	2013	2014	2015
Current Price								
Agriculture	246.47	449.31	336.43	381.97	300.31	309.35	702.04	1,593.20
Mining	2.38	1.83	52.78	45.62	36.85	0.81	-	-
Manufacturing	3,009.19	4,669.65	4,619.47	4,798.45	3,981.90	5,563.89	4,338.62	3,383.17
construction	5,753.81	3,971.96	2,605.67	1,724.53	1,008.07	1,410.52	1,195.32	1,012.96
Trade	18,892.42	7,948.13	17,155.79	15,461.67	14,793.63	22,599.20	19,926.48	17,569.84
Transport	149.17	144.85	171.76	223.16	312.4	326.39	310.83	296.02
accom	3,845.93	2,985.49	2,430.68	1,653.90	8,998.55	6,588.29	6,274.30	5,975.27
others	16.82	28.22	50.57	18.56	87.72	29.48	28.07	26.73
Total	31,916.20	20,199.44	27,423.14	24,307.86	29,519.43	36,827.94	32,775.66	29,857.19
Informal Value Added at constant, Million Birr								
Sector	2008	2009	2010	2011	2012	2013	2014	2015
Agriculture	246.47	441.31	305.14	301.3	188.94	153.53	259.63	465.30
Mining	2.38	1.8	42.46	32.11	22.74	0.44	-	-
Manufacturing	3,009.19	4,581.82	3,909.03	3,543.69	2,477.85	2,893.85	2,166.06	1,059.56
construction	5,753.81	4,644.58	2,240.86	1,263.83	662.24	832.23	429.97	341.06
Trade	18,892.42	7,798.65	14,517.37	11,418.58	9,205.75	11,754.13	8,136.58	6,002.68
Transport	149.17	137.58	155.97	186.02	216.71	196.95	181.03	116.63
Accommodation	3,845.93	3,738.75	2,108.35	1,216.64	6,109.59	4,045.92	2,221.78	2,077.63
others	16.82	33.52	47.23	15.09	63.59	18.26	11.18	8.73
Total	31,916.20	21,378.01	23,326.42	17,977.25	18,947.40	19,895.31	13,406.23	10,071.60
% Share from GCP current	8.3	4.6	4.9	3.6	3.4	3.3	2.2	1.6

Table 12 presents result of Gross city product estimate from informal sectors. According to the results the share of informal sector in Gross city product is 8.27% in 2008 and 1.6 % in 2015 EFY. The results also indicated that GCP from informal economic activities has decreased during the period.

3) Economic Growth Rate of City economy

Economic growth is defined as the percentage output increase in an economy, e.g. a nation, a region or a municipality. The most used measure for national economic growth is the change in Gross Domestic Product (GDP). GDP measures the value added of all goods and services produced in the economy.

Growth in real gross city indicates the economic expansion of city economy. When we look at the city economy, it has been growing at annual average growth rate of 8.74 percent during 2012-2015. The result shows that growth rates vary from sector to sector.



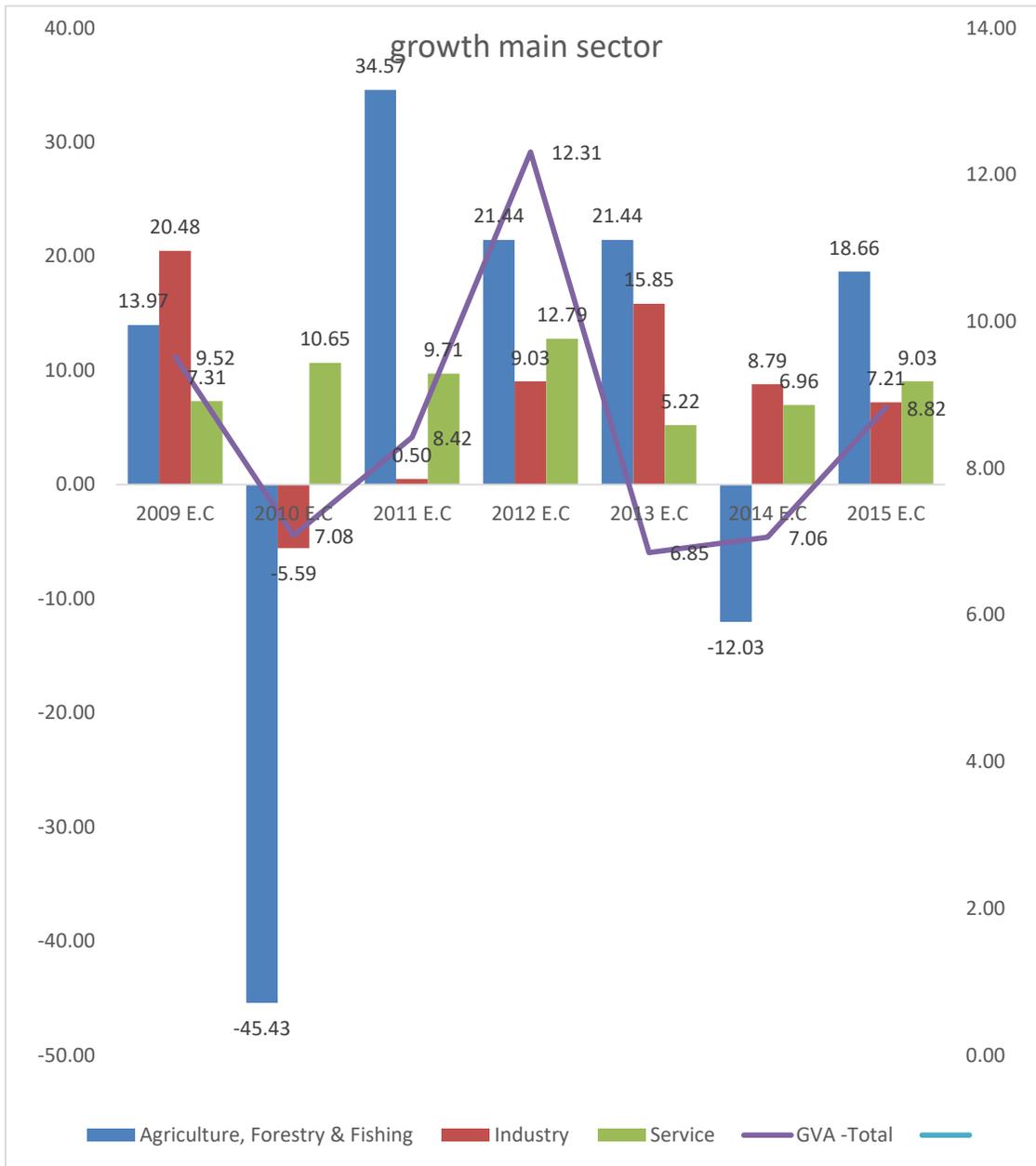


Table 13: Growth Rates by sectors

Sectors	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C	Average 2012-2015
Agriculture, Forestry & Fishing	13.9748	-45.43 12	34.57 4	21.44	21.44	-12.03	18.66	11.39
Industry	20.5	-6.0	0.49	9.03	15.8	8.8	7.2	10.17
Mining and Quarrying	-7.4	3182. 9	-30.0	-42.4	-98.4	37102 .7	-54.8	11.75
Manufacturing Total	82.5	5.1	10.0	10.2	10.2	11.6	7.0	9.76
Electricity; gas, steam and Air Conditioning Supply	32.5	-35.1	-16.9	71.6	-41.9	-0.2	44.0	9.37
Water supply; sewerage, waste management and remediation activities	15.5	-24.8	-14.7	-0.6	-15.6	-38.7	76.2	-2.43
Construction	-25.7	-19.8	-17.9	-3.7	54.4	-0.4	5.5	11.81
Service	7.31	6.5	9.71	12.79	5.22	6.96	9.03	8.46
Wholesale and retail trade; repair of motor vehicles & Motorcycles	4.5	17.4	18.1	11.0	9.2	15.9	2.5	9.53
Transport and Storage	10.9	13.7	2.9	-3.3	-17.4	6.8	18.5	0.29
Accommodation and food services	5.9	-36.4	-60.1	203.4	-18.7	-8.1	32.4	31.59
Information & Communication	-15.6	-12.5	-0.3	60.1	10.3	7.9	6.8	19.46
Financial and Insurance Activities	17.9	13.4	13.5	8.9	-4.8	-16.8	33.8	3.65
Real Estate Activities	3.4	9.9	16.6	-8.0	14.9	13.1	2.4	5.21
Professional, scientific and technical activities	35.8	-71.9	-21.9	-5.9	23.4	159.6	-34.5	18.56

Sectors	2009 E.C	2010 E.C	2011 E.C	2012 E.C	2013 E.C	2014 E.C	2015 E.C	Average 2012-2015
Administrative & support Service Activities	-8.0	157.3	-52.4	-5.3	13.8	-22.5	32.3	2.49
Public Administration & Defence; Compulsory social security	73.9	14.7	1.0	12.0	1.4	-12.9	26.7	5.80
Education	4.8	133.0	-37.8	-17.6	61.7	-20.1	16.9	5.60
Human Health & Social work activities	52.1	-47.1	-6.4	16.4	22.7	23.4	-4.6	13.88
Arts, entertainment and recreation	212.7	-50.3	-65.0	15.3	16.2	389.3	-46.7	36.72
Other Service Activities	92.3	34.6	-45.4	17.7	12.8	-85.3	434.4	1.04
Private Households with Employed Persons	5.1	-33.5	-50.5	823.7	218.0	-28.8	9.9	118.97
GVA -Total	9.5	7.1	8.4	12.3	6.8	7.1	8.82	8.74

4) Per capita Income Results

Per capita income is one of the indicators of living standards. Table indicates the result for per capita income of Addis Ababa from 2008 to 2015. Per capita income estimates of Addis Ababa increased from Birr 115,134.78 in 2008 EFY to Birr 178,018.28 in 2015EFY. The annual average growth of real per capita income (Birr) was 6.45%.

Table 14: Result of real Per capita Income Estimation

Particular	2008	2009	2010	2011	2012	2013	2014	2015
GCP (Billion Birr)	385.93	422.66	452.60	490.72	551.12	588.87	630.45	686.08
Exchange Rate Birr-USD	22.08	23.16	26.11	28.10	30.24	34.95	37.95	40.94
GCP (Billion USD)	17.48	18.25	17.33	17.46	18.22	16.85	16.61	16.76
Population (Million)	3.35	3.44	3.52	3.60	3.69	3.69	3.77	3.85

Per capita Income (USD)	5,214.44	5,312.84	4,927.34	4,845.47	4,936.73	4,571.06	4,406.90	4,347.92
Per Capita Income (Birr)	115,134.78	123,04	128,652.7	136,157.78	149,286.61	159,758.48	167,226.99	178,018.28
PCI growth (USD)			(7.26)	(1.66)	1.88	(7.41)	(3.59)	(1.34)
PCI growth (Birr)		6.87	4.56	5.83		7.01	4.67	6.45

5) Coverage, Data Sources and Method of Estimation for Specific Sectors

5. Agriculture, forestry and fishing

Definition & Coverage

According to ISIC-4, this activity includes crop production, animal farming, hunting, fishing and forestry and related activities undertaken by private households, government and establishments other than households. In the case of Addis Ababa, except hunting and fishing activities, all the rest are included in the GCP estimation.

Crop sub-sector

The crop sub-sector covers the production of cereals, pulses, oil seeds, spices, vegetables & fruits. The cereals include grains like Teff, Wheat, Maize, Barley, Sorghum, Faba bean, Field peas, Chick peas, Fenugreek, Lentils, Vetch, Linseed, Rapeseed, Niger seed and Sunflower.

The production of vegetables (both by 'Meher' season and irrigation system) includes Potato, Tomato, Cabbage, Onion, Garlic, Pumpkin, Green pepper etc. However, the production of fruits, due to lack of organized data, is excluded from the estimation of the value addition. Moreover, the Belg season of production is not estimated due to lack of data as city administration.

Establishments other than households, which are engaged in horticulture and mushroom production are also not incorporated due to lack of reliable data in the estimation. The by-products of teff, wheat, barley, horse beans and field peas are also included in the estimation.

Livestock sub-sector

This sub sector includes farming of cattle, sheep, goat, horses, donkeys and mules; the production of livestock and poultry by-products such as meat, milk and milk products, egg, skins and hides; honey and bees wax; value of stock change.

However, the processing of milk outside the farm animals boarding and care, production of meat and hides and skins from slaughter houses, training of dogs for security reasons and training of pet animals are excluded from this sub sector.

Forestry sub-sector

The economic activities covered under this sub-sector include production and gathering of fuel wood (i.e. firewood including stacked split, round wood, roots, and branches, leaves & twigs- BLT) and charcoal. Besides, the felling and cutting of trees for production of timber such as Lumber/Plank, round wood and poles for construction and industrial use. In the context of Addis Ababa, the activities of production of split and round wood, wood used for construction, and the activities of fuel wood carriers are included from 2008 up to 2010, but the product of forestry at 2011 and 2012 data is not available since the product is not sold.

Data Sources

Crops

The following governmental & private organizations are the main sources of data for crop sub sector:

- The Urban agricultural core process of Addis Ababa City Government Farmers and Urban Agriculture Commission is the main data source for data on the production area in hectare, Inputs supplied and production of crops from 2008 – 2012 EFY.
- Agricultural Inputs Supply Enterprise – From this data source, data on the price of fertilizers, applied pesticides, insecticides and herbicides are collected.

Livestock

The number of livestock and poultry population, the production of milk, egg, honey & wax, intermediate inputs used and prices are collected from Urban Agriculture Core Process of Addis Ababa City. Besides, we examined some coefficients used for the estimation of livestock & poultry by products for our estimation using the data obtained from CSA welfare Monitoring survey 2011 and 2016, benchmark data of 1994 E.C Urban Agricultural Sample Enumeration, Price data (Retail prices, Producer Price, Consumer price index) and Research Findings from International Livestock Research Institute (ILRI): off take rates, productivity of honey per beehive and IGAD: liter per lactation, lactating proportion per head, ton of live animal dung per head of cattle, proportion of milk retained as fluid, conversion of fluid milk to kg of butter..

Data for commercial establishments for both agricultural sector, and data on intermediate inputs costs (both direct & indirect) are collected from Revenue Authority tax (income-profit statements) data.

Forestry

Data for split and round wood and wood for construction used are collected from Environmental Protection Authority of Addis Ababa City Administration and the IBEX data for the sale of forest products (income gained from gov't forest). Data on the number of population engaged on forest production and forest related and income gained (salary) is collected from CSA labour force survey and employment unemployment survey of 2008 and 2009 EFY.

Methods of Estimation

Crops

Estimation of value added at current basic price for crop sub sector followed production approach (the Gross Value of Output less intermediate inputs used in production process). Gross value of output of each crop item is estimated by multiplying the net production of each crop item (total production of each crop less crop wastage) by their respective producer prices. Crop wastage is estimated by deducting post-harvest losses of 10 % of the quantity of crop produced at the meher season.

Intermediate inputs (seeds /local & improved/; fertilizers /DAP & UREA/; insecticides, herbicides, rodenticides etc.) are valued by multiplying each quantity with their respective purchaser's prices. Intermediate consumption (IC) is enhanced by a ratio of 12 % of the output for under-coverage crops.

Finally, by adding up all the GVO of net production of crops less the sum of intermediate inputs, we have obtained the value addition of crop production at current basic price.

1) Current basic price estimate

GVA at current basic prices = Output of Crops - Cost of intermediate inputs

$$\text{GVA} = \frac{\text{Valued at producer's Price}}{\sum(\text{Quantity} \times \text{Prices})} - \frac{\text{Valued at purchaser's price}}{\sum(\text{Quantity} \times \text{Prices})}$$

Cost of fertilizers
Cost of seeds
Cost of pesticides
Cost of insecticides ...

Table 15: Summary of Agriculture Sector Estimates (2008 – 2015EFY) In Billions of Birr

Description	2008	2009	2010	2011	2012	2013	2014	2015
constant	4.51	5.14	2.81	3.78	4.59	5.57	4.90	5.82
current	4.51	6.19	3.85	5.48	5.08	6.17	19.55	19.91

2) Constant basic price estimate

To estimate the constant basic price of crop sub sector, we applied double deflation method. Accordingly, both the output and intermediate inputs used in the production process are deflated by the base year price of each crop item and intermediate inputs, respectively.

The value addition of commercial establishments other than households is estimated in the same manner as above. Finally, the Value added at constant basic price is valued by deflating the current value added by the general price index.

Livestock

Like crop sub sector, here, we followed production approach to estimate the value addition of livestock production (Gross value of output less intermediate inputs). To arrive at current and constant basic price estimation of the value addition in this sub sector, the following items are valued.

- **Valuation of Change in stock**

The positive or negative change of each livestock population (the change of the current year from the previous year) is multiplied by the producer's price of each livestock to obtain the current value added. Then deflation technique is applied using each livestock's base year price to arrive at the GVA at constant basic price.

- **Valuation of milk & milk products**

Data on the total milk production in the city (2008-2009 EFY) is provided by CSA welfare Monitoring survey 2011 and 2016. Whereas, data on 2010-2012 is obtained from urban agriculture administrative data of livestock population and multiplied by coefficients.

- **Valuation of meat, hides & skins**

Valuation of meat group (off-take for livestock disposed of for slaughter, including self-consumption of the farm households), applying off-take rates (production coefficients) multiplied by the population of livestock gained as change in stock of each livestock types and estimated by their coefficients of their off take rate.

- **Valuation of honey & bees wax**

The valuation of production of honey and bees wax is based on the estimate of production of honey from modern hives & traditional hives obtained from urban agriculture core process.

- **Valuation of egg**

The value addition is estimated by multiplying the coefficients with their respective poultry population size.

For the valuation of intermediate inputs, we applied ratio of intermediate to gross output obtained from Federal national economic account directorate. The price for crop and livestock output is obtained and applied from urban agriculture core process.

Forestry

Value added at current basic price is estimated using data from Addis Ababa City Environmental Protection and Green development commission. First each forestry output item is multiplied by the producer price to obtain the GVO and then intermediate inputs used in production process are deducted, which gives us value added at current basic price but data for intermediate inputs used and data of forest product of 2011 and 2012 is not estimated due to lack of data (Government forest trees are not sold at 2011 and 2012). IC data for forest production of other years also excluded in the estimation due to lack of data from administrative report and forest product as fuel wood is also excluded due to of lack of appropriate data.

6. INDUSTRY

6.1. Mining and quarrying

Definition & Coverage

According to International Standard Industrial Classification of all Economic Activities (ISIC-4), this section includes the extraction of minerals occurring naturally as solids (coal and ores), liquids (petroleum) or gases (natural gas). Extraction can be achieved by different methods such as underground or surface mining, well operation, seabed mining etc.

This section also includes supplementary activities aimed at preparing the crude materials for marketing, for example, crushing, and grinding, cleaning, drying, sorting, concentrating ores, liquefaction of natural gas and agglomeration of solid fuels. These operations are often carried out by the units that extracted the resource and/or others located nearby.

Excluded from this category of industrial activities is the bottling of natural spring and mineral water at springs and wells as this belongs to the category of manufacturing activities. Mineral prospecting is also excluded because it belongs to other business activities. The processing of purchased salt is also excluded for it falls under manufacture of other chemical products.

In the context of Addis Ababa, this sub sector is limited to quarrying activities only namely the production of ignimbrite, basalt, selected material, red soil, scoria, clay soil, and others.

Data Sources

Addis Ababa City Administration *Environmental Protection and green development Commission* is the main source of data for this sub sector. Data on the activities of informal sectors is also taken from urban employment unemployment Survey of Central Statistics Agency.

Method of Estimation

The current value added of this sub sector is calculated by the principle of production approach, deducting intermediate inputs from gross value of output. GVO is obtained by multiplying quantity of output by unit price of that item and add up all value of items. To obtain intermediate consumption, we applied output to intermediate ratio of similar sub sector used by Federal Plan commission. The value added is obtained by intermediate consumption from GVO. For informal sector, the number of population engaged on the informal sector of mining and quarry multiplied with annual earning for each person using data from CSA survey of respective years.

In this sector, value added at constant basic price is calculated by deflating the current value added by agricultural sub sector.

Table 16: Quarrying production value added at constant and current price (Billion birr) (2008-2015 EFY)

Description	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	0.01	0.01	0.41	0.37	0.24	0.01	6.51	1.09
Total GVA- Constant 2008 Prices	0.01	0.01	0.38	0.27	0.16	0.002	0.93	0.42

6.2. Manufacturing

Manufacturing according to International Standard Industrial Classification (ISIC Rev.4) is defined as the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or in the worker's home, and whether the products are sold at wholesale or retail. Substantial alteration, assembly of the component parts of manufactured products, renovation or reconstruction of goods is generally considered to be manufacturing.

Based on the nature of availability of the data, CSA classifies the industrial group into three major sub groups, but we only focusing on the two of them due to the absence of hand craft. The two are namely:

- 1) Large and Medium Scale Manufacturing
- 2) Small Scale Manufacturing

6.2.1. Large and Medium Scale Manufacturing

Coverage

Large and Medium Scale manufacturing covers all establishments undertaking manufacturing activity and employing ten or more persons using some power-driven machinery, irrespective of the ownership of the establishments. It also includes assembling of component parts of manufactured goods and installation of machinery and equipment so long as these activities are not included in the trading services.

Data Sources

The CSA has been conducting annual survey on large and medium scale manufacturing and electricity industries on a regular basis. The survey covers both private and public large and medium scale manufacturing establishments. Therefore, information on value of output, value added, gross value added at current market price and basic price for different categories of industries, annual indices and number of persons engaged by sub-industry group. These reports are the major sources of information for estimation of value added of the sub-sector for current price and constant prices.

Methods of Estimation

Current Price Estimates

Value Added estimates for large and medium scale manufacturing industries at current prices is obtained by the production method which involves deducting the total value of intermediate inputs from the total value of production.

The annual CSA survey from (2008-2013) EFY on large and medium scale manufacturing industries provides all the data needed for the estimation of GDP from this sub-sector. The result of the survey contains data on gross value of production,

industrial and non-industrial costs and value added at basic price where taxes on products (indirect taxes) are excluded from the value of sales. Hence, the value added at current prices for all the estimated years is taken directly from the reports of the surveys.

Constant Price Estimates

Estimation of value added of large and medium scale manufacturing at constant prices is done by extrapolation of value-added base year with production index of manufacturing (volume index). We found that CSA report clearly put the major sub-group output indices for manufacturing industries which can an input to derive the constant estimation.

Thus, extrapolating the base year value added at current price by each year production index provides value added at constant price.

6.2.2. Small Scale Industries

Coverage

Small Scale Manufacturing encompasses those establishments employing less than ten persons and use power driven machines. It covers all forms of ownership whether it is public or privately owned.

Data Sources

As large and medium scale manufacturing, the main source of data for this sector is small scale manufacturing industries survey conducted by CSA, both national wide and regional level. The CSA has been conducting annual survey on small scale manufacturing and electricity industries on a regular basis. Therefore, information on value of output, value added, gross value added at current market price and basic price for different categories of industries, annual indices and number of persons engaged by sub-industry group. These reports are the major sources of information for estimation of value added of the sub-sector for current price and constant prices.

Methods of Estimation

Current Price Estimates

Value Added estimates for small scale manufacturing industries at current prices is obtained by the production method which involves deducting the total value of intermediate inputs from the total value of production.

The annual CSA survey from (2008-2013) EFY on small scale manufacturing industries provides all the data needed for the estimation of GDP from this sub-sector. The result of the survey contains data on gross value of production, industrial and non-industrial costs and value added at basic price where taxes on products (indirect taxes) are excluded from the value of sales. Hence, the value added at current prices for all the estimated years is taken directly from the reports of the surveys.

Constant Price Estimates

The Value added at constant price for small scale manufacturing is obtained by multiplying the number of persons engaged in each year with the base year value added per person engaged.

Table 17 : GVA of Large & Medium and Small scale manufacturing industries at Current & Constant Basic Prices Billion Birr

	2008	2009	2010	2011	2012	2013	2014	2015
Value Added at Current Basic Prices	24.38	49.50	59.27	76.55	94.09	114.71	141.10	238.32
Value Added at Constant Price (Billion Birr)	24.38	44.48	46.75	51.43	56.70	62.51	69.76	74.64

6.3. Electricity, gas, steam and air conditioning

This sub sector covers the activities of generation, transmission of electric energy and its distribution to households, industrial and commercial. We included the activities of Ethiopian Electric Power and Ethiopian Electric Utility. We collected data on revenue & expenditure as well as electricity sold, tariff rate and other important information both at head office level and Addis Ababa share of Ethiopian Electric Utility and Ethiopian Electric Power. As well known, this sub sector has a supra – regional nature. Therefore, care has been taken to get the right disaggregated data. Since Ethiopian Electric Power and Ethiopian Electric Utility had provided dataset like Income, wage and salary, related benefits, depreciation and intermediate cost of the Addis Ababa Administration for the periods under consideration, then we subtract intermediate cost from Gross value output to obtain current value added. Value added at constant basic price is reached by deflating the current value-added using CPI.

Table 18: Electricity, gas, steam and air conditioning GVA at current and constant 2008 prices (in Billion) birr

Description	2008	2009	2010	2011	2012	2013	2014	2015
GVA at current price	3.70	4.25	5.03	4.90	5.40	5.95	6.60	9.51
CPI (2008 = base)	100.0	86.6	158.1	185.4	224.2	258.2	349.3	251.2
GVA at Constant price	3.70	4.90	3.18	2.64	4.54	2.63	2.63	3.78

6.4. Water supply; sewerage, waste management and remediation activities

Definition & Coverage

Based on ISIC-4, this section includes activities related to the management (including collection, treatment and disposal) of various forms of waste, such as solid or non-solid industrial or household waste, as well as contaminated sites. The output of the waste or sewage treatment process can either be disposed of or become an input into other production processes. Activities of water supply are also grouped in this section, since they are often carried out in connection with, or by units also engaged in, the treatment of sewerage.

In the case of Addis Ababa city, Addis Ababa Water and Sewerage Authority performed the collection, purification, distribution and sewerage disposal activities for institutional and sewerage. The value added from non- institutional water like from springs, ponds and rivers data has not been included in compilation due to the insignificant number of its value added at City level. In addition to the above, Gross output and value added from private solid waste and sewerage waste collector enterprises as well as from solid waste cooperative share enterprises were included.

Data Sources

The revenue and expenditure data including, intermediate cost, depreciation and the volume indicators, the total value of water production, water supply, water sold, the amount of leakage, tariff rate etc. are collected from Addis Ababa Water and Sewerage authority. Data of sewerage disposal and solid waste disposal activities carried out by private sectors like their revenue, expenditure and depreciation was collected from those selected organizations through sampling techniques and Ministry of Revenue tax data

Lastly the revenue and expenditure data of solid waste collection cooperative share enterprise from all enterprise found in Addis Ababa city government were collected.

Method of Estimation

We applied different method of estimation:

Institutionalized water and sewerage: gross output and value added for water and sewerage were compiled from income and profit statement of from Addis Ababa Water and Sewerage authority (AAWSA). To get the current value added we subtract

intermediate cost from Gross value output. The gross output and value added of private solid and sewerage waste as well as solid waste collection cooperative enterprises is obtained by multiplying value added per enterprise with number of enterprises engaged in these activities in the city. The value added per enterprises is computed sample survey while total number enterprises obtained from Addis Ababa Water and Sewerage authority, Addis Ababa solid waste management Agency as well as ten sub city solid waste management Office. Valuation at constant basic price is done by deflating the current basic price by consumer price index for water.

Table 19: Value Addition of Water, Sewer & Waste (In Billions)

Description	2008	2009	2010	2011	2012	2013	2014	2015
GVA at Current Prices	0.64	0.64	0.88	0.88	1.06	1.18	0.85	1.08
GVA at 2008 constant prices	0.64	0.74	0.55	0.47	0.47	0.40	0.24	0.43

6.5. Construction

According to ISIC revision 4 constructions includes construction of buildings, civil engineering, construction of roads and railways, construction of utility projects, construction of other civil engineering projects. It also includes specialized construction activities such as demolition and site preparation, electrical, plumbing and other construction installation activities, building completion and finishing. This work can be carried out on own account or on a fee or contract basis. Construction of buildings includes the construction of all residential or non-residential buildings, on own account for sale or on a fee or contract basis. Non-residential buildings consist buildings for industrial production, e.g. factories, workshops, assembly plants etc., hospitals, schools, office buildings, hotels, stores, shopping malls, restaurants, airport buildings, indoor sports facilities, parking garages, including underground parking garages, warehouses, religious buildings, assembly as well as erection of prefabricated constructions on the site.

Data Sources

The major sources of data used for estimating the value addition of construction activity of the city are:

- Addis Ababa Bureau of Finance, IBEX report (2008-2015EFY)
- Addis Ababa City Administration Housing Development and Administration Bureau Project Office, Housing Bond loan and Use Report (2008-2015 EFY)
- Central Statistical Agency (CSA), Contract construction survey, (2001 EFY)
- CSA, Addis Ababa Population Projection (2015)
- Ethiopian Electric and Power Corporation (EETPCO) financial Report (2008-2013)
- Ethio-telecom, Financial Report Reports (2008-2015 EFY)
- Ethiopia Airline and Ethiopian Air ports Enterprise Financial reports (2008-2015)
- Ethiopian Postal Service Enterprise, Financial report (2008-2015)
- Financial reports of Public and private financial intermediaries (2008-2015)
- Financial report of Non-Profitable Institution Serving Households (2008-2015)
- Ethiopian Investment Authority, Addis Ababa City Level Private Construction Investment Profile Reports (2008-2015 EFY)
- Addis Ababa Investment Agency (2008-2015 E.C Operational Investment Projects profile)
- CSA Large and Medium Industry Survey 2008-2015)
- CSA Small Scale Industry Survey (2008-2015)
- CSA Distributive Trade Survey (2003 and 2006)
- CSA 2011 and 2016 Welfare monitoring Survey
- Addis Ababa Finance and Economy Development Bureau and Addis Ababa University, (2015) Poverty Level Assessment of Addis Ababa

Methods of Estimation

The gross value of output of construction is taken to be equal to the sum of the value of new construction and major repair and maintenance works undertaken in all industrial activities of the economy by all institutional sectors. Based on the nature of the available data, the construction output and value added are estimated separately for public construction, private housing construction and other private construction activities.

Public Non-Residential Construction

The public sector construction includes the construction activities undertaken by city, governments, and extra-budgetary government agencies. The gross value of output and value added of the non-residential construction by regional governments are computed from the annual budgetary revenue and expenditure account of Addis Ababa finance Bureau. The value of output is the total value of capital expenditure on construction projects by all implementing organs of the City government. Summing up outlays on engineering design, non-residential buildings and land preparation and other construction works from capital expenditure account derives output of construction from city governments. Outlays on these items are recorded under expenditure codes of pre-construction, construction of building-Non-residential, construction of infrastructure and construction supervision 6321, 6323, 6324, 6325 and 6326 respectively. The total output of construction by the government is computed by summing up all the items indicated under these expenditure codes. All capital expenditures on non-residential buildings of public enterprises such as Ethiopian airlines, Airports, Civil Aviation, EEPSCO and Ethio-telecom are examined based on the annual financial reports of the respective institutions. GVO at current basic price is derived for the respective years by summing up all expenditure categories of government and public enterprises. The gross output of construction activities carried out in the specified years by NPISH is estimated from their financial report on this sub sector.

Public Enterprises

GVO and value addition of construction by the Ethiopian Electric Power and the Ethio-Tel, Ethiopian airline, airport enterprise is derived from fixed capital formation data obtained from respective enterprises.

Industrial and commercial Construction

With respect to the estimation of GVO and value addition of industrial and commercial construction, we used data on new capital investment as well as computed ratio of building and other construction to total fixed asset from CSA large and medium industry survey, small scale industry survey, and distributive trade survey to obtain new capital invest on construction. Since there are no disaggregated data on the cost structure

(labor and material costs) of new investment on construction to derive value addition for industrial and commercial construction, we used an indirect method which involves taking the ratio of value addition to gross output of private sector obtained from the 2001 survey of contract construction activities by CSA.

Household Residential Housing

Gross value output and value addition private residential housing construction was estimated by using information on Housing stock computed from 2007 Population and Housing Census, 2011 and 2016 Welfare monitoring Survey and Poverty Level Assessment of Addis Ababa (2015). The following steps have been taken in order to arrive at the gross value of production of private residential housing. The method of estimation used to determine the value added of residential buildings is a cost-based approach i.e. all expenditures incurred for a complete housing construction activity is considered. For estimation purpose, the number of new housing stocks, cost of average housing unit, cost of construction raw materials and CPI are considered. The GVO from urban residential construction activities of private is derived as a product of new housing stock built in the respective years and the average construction cost per houses. As the construction cost of houses varies with the type of construction materials used, we need to classify the existing housing stock by the type of construction materials. We have used classification the housing stocks based on construction material of wall from 2011 & 2016 welfare monitoring survey and 2015 Addis Ababa poverty level assessment study. These categories include wood, mud and stone; cement, stone, block and bricks; and others. According to these studies the share of new house made of wood, mud& stone; cement stone, block and brick; and others has been computed.

- a. Houses are classified into three different groups
- b. The growth in the number of houses trend was computed from 2007 censuses, 2011 and 2016 Welfare Monitoring Survey and 2015 Addis Ababa poverty level study
- c. The number of newly constructed houses in each year is obtained by deducting housing stock of previous year from housing stock of current year plus a result of replacement factor multiplied by housing stock of previous year.

- d. Value of different materials used for construction of roof and wall including the labor cost were estimated for different types of roofs and walls. The prices of the materials are obtained from CSA publications on average retail prices of goods & services.
- e. The lifetime of replacement for an urban house is assumed to be between 25 and 40 years. Based on this assumption, we determined the number of additional dwellings that would be constructed each year so as to replace those houses demolished because of old age, keeping the type of materials used in to consideration.
- f. The repair and maintenance cost of urban construction is assumed to be 8% of the GVO of newly constructed houses as per the ratio used by National Plan Commission.
- g. The average construction cost for the different type of housing units is estimated based on the information obtained from the housing development project office of Addis Ababa city and average retail prices (CSA).
- h. An average urban house is assumed to have floor size of 32 M². The per unit housing cost of houses with hollowed blocks, bricks, and cement and stone wall are estimated based on the expenditure data of transferred condominium houses in 2008 EFY while the necessary adjustment have been made considering the variation of construction materials.
- i. In order to obtain the value addition component, we used technical coefficient (ratio of 31.9%) from experience of previous studies and 2001 survey of contract construction activities by CSA.

Real Estate Residential Housing

The GVO and Value addition of Real Estate residential construction was estimated by using data of Real estate Projects Licensed by Addis Ababa Investment Agency and Ethiopian Investment Authority. Investment expenditure at operational level on real estate residential construction was summed up to obtain GVO and we used ratio derived from CSA contract construction survey (36.6 % of GVO) to compute value addition for this category.

Public Residential Housing

The Gross value output (GVO) and value addition of public residential housing construction was estimated by summing up outlays in residential building code 6322 of

capital expenditure account of the city governments and housing bond loan use report obtained from Housing Development and Administration Bureau.

Other Private Non-Residential Construction

Included in this sub-class of construction output are the construction works of all non-residential buildings and structures like offices, factory buildings, hotels, restaurants, warehouses, hospitals, clinics, roads, etc. carried out by the private business sector. We used information on operational level projects from Ethiopian Investment Authority and Addis Ababa Investment Agency to estimate GVO and value addition.

Value Added at Constant Prices

In the case of modern construction works, the available data are only retail prices of construction materials in selected urban centers. Hence, CPI of construction has been used to deflate the current price estimates. The price index is used for deflating output of construction by government, private business and NPISHs.

Table 20: Summary of Construction Value added at current market price and at constant price (In Billion) (2008-2015)

Description	2008	2009	2010	2011	2012	2013	2014	2015
Total Construction Value Added at Current price	33.64	34.23	32.98	35.19	37.46	72.50	83.38	100.96
Added at 2008 price	33.64	25.01	20.07	16.48	15.87	24.51	24.41	25.75

7. SERVICE

6.6. Wholesale and retail Trade, Repair of motor vehicle and motor cycle

Coverage

According to ISIC (Rev. 4) the activities of this industrial group includes wholesale and retail sale (i.e. sale without transformation) of any type of goods and the rendering of services incidental to the sale of these goods. Wholesaling and retailing are the final steps in the distribution of goods. Goods bought and sold are also referred to as merchandise. As well as repair of motor vehicles and motorcycles are included in this group.

Data Sources

Major sources of data used to estimate the value added for this industrial group are the CSA's report on Distributive and Service Trade Survey, Labour force survey, Urban Employment Unemployment Survey, consumer price index of Addis Ababa. Ministry of Federal revenue to get no of enterprises engaged in the sector and income statement of the business enterprises

Method of Estimation:

The method of estimation used for this sector was production approach for estimating the Value addition at current price i.e. from the data of Ministry of revenue /tax data/by sorting the activity included under this sector then by calculating the average of number of establishments, gross income, and total expenditure by excluding salary and wage, other employments benefit and depreciation.

The gross value output was obtained by multiplying average gross income by number of business establishments whereas the intermediate cost is total expenditure by excluding salary and wage, other employments benefit and depreciation multiplying by number of enterprises engaged in trade activities; then the value-added estimates at current price are obtained by subtracting Intermediate cost from gross value output.

The constant price estimation is derived by deflating the current price estimate by the appropriate price index (general CPI).

Table 21: Summary Value Addition of Trade at current and constant basic prices (2008-2015 EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA – at current prices	155.94	166.05	226.16	305.89	403.05	526.57	777.15	951.68
GVA at Constant basic Price	155.94	162.95	191.34	225.91	250.81	273.83	317.33	325.14

6.7. Accommodation and food service activities

Coverage

This section includes the provision of short-stay accommodation for visitors (hotels, camping sites, restaurants, bars, canteens, lodging places and other eating and drinking places) and other travelers and the provision of complete meals and drinks fit for immediate consumption. The amount and type of supplementary services provided within this section can vary widely (ISIC-rev.4).

Data Sources

Major sources of data used to estimate the value added for this industrial group are the Ministry of Federal revenue to get no of enterprises engaged in the sector and income statement of the business enterprises from the year of (2015/16-2019/21 or 2008-2014) and CSA's report on Consumer price Index (CPI)

Methods of Estimation

Estimation of the gross value added for accommodation and food service activities are made based on the value added per establishment from tax revenue report and then this figure multiply with total number of licensed establishments and sum up all for this sub sector for each year; i.e. Gross value output was calculated by multiplying average gross income by number of business establishments whereas the intermediate cost is total expenditure by excluding salary and wage, other employments benefit and depreciation multiplying by number of enterprises engaged in trade activities; then the

value-added estimates at current price are obtained by subtracting Intermediate cost from gross value output through production approach. CSA CPI is used as to deflate for GDP at constant price estimate.

Table 22: Value added of Food & Accommodation Activities at current and 2008 basic prices (2008-2015 EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	8.86	10.71	9.56	4.98	19.96	18.40	15.19	20.50
Total GVA- Constant 2008 Prices	8.86	9.38	5.96	2.38	7.21	5.86	5.39	7.13

6.8. Transportation and storage

This sector covers land transport and transport via pipelines such as passenger and freights transport via railways; urban and suburban passenger land transport; other passenger land transport. Freight transport operation by road includes logging haulage, stock haulage, refrigerated haulage, heavy haulage, bulk haulage, tanker trucks, haulage of automobiles, and transport of waste and waste materials, furniture removal, renting of trucks with driver, and freight transport by man or animal-drawn vehicles. According to ISIC revision 4, this sector includes transport via railways, urban and suburban passenger land transport, freight transport by road, water transport, and air transport. It also includes warehousing and support activities for transportation, road passenger & road freight transport carried out by inter-urban and city buses, taxis, trucks and tankers of different capacities, Bajaj auto services, transport services provided by pack animals, and carts on commercial grounds. Supporting and auxiliary transport activities comprises activities of travel agencies such as terminal & parking facilities, cargo handling, storage & warehousing, the forwarding of freight, arranging tours, tourist assistance activities such as by tourist guides, etc. But it excludes the use of transport

by a household, a government, a private or a public enterprise, a corporation or a nonprofit institution for own intermediate (as ancillary activity) or final consumption.

Data sources

- ✓ Central Statistics Authority, Consumer Price Index for transport sector
- ✓ Financial and Administrative Reports (2008-2014 EFY), Anbessa City Bus Enterprise
- ✓ Financial and Administrative Reports (2008-2014 EFY), Ethiopian Airlines
- ✓ Financial and Administrative Reports (2008-2014 EFY), Ethiopian Civil Aviation
- ✓ Financial and Administrative Reports (2008-2014 EFY), Ethiopian Airport Enterprise
- ✓ Reports on no. of pack animals- donkeys and horses (2008-2013 EFY), Addis Ababa urban Agriculture Core process.
- ✓ Addis Ababa City Driver and vehicle Licensing and supervisory Agency
- ✓ The financial and Administration report 2008-2014 of Ethiopian postal services Enterprise
- ✓ Passenger Transporting vehicles survey, Addis Ababa City Transport Authority, 2008 EFY,
- ✓ Financial report of Ethiopian Railway Corporation
- ✓ Financial report of Sheger Mass Transport Service Enterprise
- ✓ Financial report of Public Employee Transport Service Enterprise
- ✓ Federal Transport Authority

Methods of Estimation

The estimation of value added from the transport and communications sector is mainly based on the production approach. Value added estimates are made separately for each mode of transport and for each specific type of carrier under a given mode of transport. Therefore, value added estimates are made independently for: road passenger transport and road freight transport by capacity classes, railway, animal transport, water, air, maritime and transit, other supporting and auxiliary transport activities, post & courier, and telecommunications.

Road Transport

Road Passenger Transport

Road passenger transport comprises services rendered by mini taxi (<5 passengers), mini bus (6-12), medium bus (13-29), big bus (30-44) and large interurban buses with carrying capacities and the Anbessa city buses operating in Addis Ababa. Then we developed performance parameters of transport service for each category. Benchmark estimates of gross value of output for each year for each category of passenger carriers are established based on the total passenger-kilometers traveled over the year and the corresponding fare rates. Once the gross value of output for each year is established, it becomes necessary to determine the value of the intermediate cost so as to arrive at the value-added estimates. The intermediate cost to gross value of output is computed using business income and profit statement of VAT for 2008 -2014 EFY. Then we obtained value addition by deducting intermediate cost from gross value product. In the case of Sheger, Public employee transport, Anbessa city bus transport service enterprise, the benchmark estimates for the gross value of output, intermediate consumption, and value added are determined by making use of the income and expenditure statements submitted by the enterprise. The value added at constant price is obtained by deflating current by CPI.

Road Freight Transport

Road freight transport includes the services provided by both dry and liquid cargo carriers (trucks and tankers). Categories in dry cargos include small trailers less than 15 Quintals, small trucks with carrying capacity of 10-less than 35 quintals, medium trucks with carrying capacities of 36-70 quintals, big trucks with carrying capacities of 71-120, large trucks with carrying capacity of 121-180 quintals, and large truck trailers with carrying capacities of above 180 quintals. Liquid cargos included are large, big medium and small tankers. The benchmark estimates of gross value added for each category of road freight transport (dry and liquid cargo carriers) for each year are established based on the ton-kilometers traveled over the year and the corresponding freight rates obtained from Federal Transport Authority. The value-added estimate for each year is determined by subtracting intermediate costs from the gross value of output for each category of freight carriers. Summing up all value-added estimates across the

categories results in the total value added from road and freight transport for the year. Constant price estimates are obtained by deflating current by CPI.

Air Transport

Air transport services include passenger and freight transport, activities of airports and air navigation facilities, the loading of aircraft and repair and maintenance service. The estimates for air transport activities are mainly based on the activities of the Ethiopian Airlines, which is the major provider of passenger and cargo carrying services.

Method of Estimation

The financial statement on the share of Addis Ababa from the national is obtained from Ethiopian Airlines. As there is no region based financial statement, special data request form is sent to the Ethiopian Airlines, which includes financial (profit and loss) statements and other administrative data. The VA at current basic price is calculated using income approach i.e. summing up compensation of employee, operating surplus and depreciation. The value addition at constant basic price is estimated by using CPI for each year.

Animal Transport

Animal transport refers to land transport with the help of pack animals and animal-drawn vehicles (carts) on commercial basis. Information from mini sample survey on expenditure and revenue of this sub sector conducted in 2008-2014 and data from 2011 and 2016 welfare monitoring survey are the main sources of data for our estimation. Value addition at constant price was estimated by deflating current by CPI for transport.

Table 23: Transport & Storage Sector value added at current and 2008 basic prices (2008-2015 EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	21.88	23.10	29.90	32.65	38.24	40.59	55.27	72.89
Total GVA- Constant 2008 Prices	21.88	24.27	27.59	28.38	27.46	22.68	24.23	28.72

6.9. Information and communication

Main divisions of this sector include publishing activities, Programming and broadcasting activities, telecommunications, computer programming, consultancy and related activities, and Information service activities. Publishing activities include the acquisition of copyrights to content (information products) and making this content available to the general public by engaging in (or arranging for) the reproduction and distribution of this content in various forms. Sub categories for publishing activities includes the publishing of books, brochures, leaflets, dictionaries, encyclopedias, atlases, maps and charts; publishing of newspapers, journals and periodicals; directory and mailing list and other publishing, as well as software publishing. Motion picture, video and television program activities includes production of theatrical and non-theatrical motion pictures whether on film, videotape, DVD or other media, including digital distribution, for direct projection in theatres or for broadcasting on television; supporting activities such as film editing, cutting, dubbing etc.; distribution of motion pictures or other film productions (video tapes, DVDs, etc.) to other industries; as well as their projection.

Sub categories include radio broadcasting, television programming and broadcasting activities.

Telecommunications includes the activities of providing telecommunications and related service activities, i.e. transmitting voice, data, text, sound and video. The transmission facilities that carry out these activities may be based on a single technology or a combination of technologies. Sub categories for telecommunication include wired

telecommunications activities, wireless telecommunications activities, satellite telecommunications activities, and other telecommunications activities. Computer programming, consultancy and related activities includes activities of providing expertise in the field of information technologies: writing, modifying, testing and supporting software; planning and designing computer systems that integrate computer hardware, software and communication technologies; on-site management and operation of clients' computer systems and/or data processing facilities; and other professional and technical computer-related activities. Sub categories include Computer programming activities, Computer consultancy and computer facilities management activities, and other information technology and computer service activities. Information service activities includes provision of infrastructure for the activities of web search portals, data processing and hosting activities, as well as other activities that primarily supply information. Sub categories for information services include data processing, hosting and related activities, Web portals and other information service activities.

Data sources

The financial and Administration report of Ethio-Telecom 2008-2014, CSA Urban Employment Unemployment Survey (2015,2016,2018,2020,2021), Business license registration from trade Bureau, income and profit statements from Revenue and customs Authority (2008-2014 EFY).

Method of Estimation

Since the financial statements of Ethio-Tel operation include statements of other regions, special request has been made to the respective head offices to get disaggregated data for Addis Ababa Region. GVO and Value addition of these enterprises are estimated by summing up compensation of employee, depreciation and operating surplus. The share of operating surplus is computed using ratio of Addis Ababa compensation of employee to national compensation of employee. The value additions for other subdivisions of this sector are estimated using production approach where number of enterprises engaged in the sub division of this sector multiplied with respective value added per enterprise. The value added per enterprise is computed

from income and profit statement and the number of enterprises obtained from business registration of trade Bureau. The current value addition was deflated by CPI of to obtain constant value addition.

Table 24: Information & Communications sector value added at current and 2008 basic prices (2008-2015 EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	37.74	33.00	32.42	32.95	51.62	56.78	61.00	63.35
Total GVA- Constant 2008 Prices	37.74	31.85	27.87	27.78	44.47	49.07	52.95	56.57

6.10. Financial and Insurance Activities

The financial and insurance activity includes all institutions engaged in the financial activities such as banks, insurances, pension funds and any other micro financial institutions. Their task is to channel funds from lenders to borrowers by intermediating between them and in this process the institutions incur liabilities on their own account for the purpose of securing financial assets in the financial market.

Coverage

According to International Standard Industrial Classification (ISIC, rev.4), the activities of financial service activities, except insurance and pension funding includes monetary intermediation (i.e. central banking, commercial banks, saving banks, and specialized institutions granting credits), activities of holding companies, trusts, funds and similar financial entities, other financial service activities (i.e. financial leasing, other credit granting & other financial service activities), except insurance and pension funding activities), insurance (life & non-life), reinsurance and pension funding, except compulsory social security and activities auxiliary to financial service and insurance activities.

In the case of Addis Ababa city, the present estimates comprise the activities of 18 banking companies, 17 insurance companies, 16 micro finance institutions and 7 employees saving & credit association are covered.

Data Sources

The data sources for estimation of the value addition for the financial intermediations are collected from the respective head offices of all commercial & specialized banks, all insurance companies, all micro finance institutions and all employees' saving & credit associations currently operating in Addis Ababa city.

Methods of Estimation

Current Price Estimates

Banking, Insurance and Micro-finance

The method used to estimate the value added is the income approach; that is the value added at current price can obtain as the summation of compensation of employees, operating surplus and consumption of fixed capital (depreciation expense). As all the information is directly collected from each the above sub-sectors, almost all sub-sectors separately identified the corporate and regional (all Addis Ababa Branch's) financial and non-financial data based on questionnaires. Information from all micro-finance and employee saving & credit association are complete data. The method has been used is similar for micro finance institutions (only for Addis Ababa branch's) and employee's credit and saving association whose operations don't cross regional borders. But for banks and insurances doesn't identified the amount of operating surplus or consumption of fixed capital the amount of the regional level but only has the corporate amount, we used an alternative indirect method for both banks and insurances by the allocation of compensation of employees and sum of loan and deposit at corporate level for banks and compensation of employees and net premium at corporate level for insurances.

We can rewrite the method of estimation of operating surplus and consumption of fixed capital for banks by the following formula.

$$OS@reg = \left(\frac{(L + D)@reg}{(L + D)@cor} \right) * OS@cor$$

$$CFC@reg = \left(\frac{CE@reg}{CE@cor} \right) * CFC@cor$$

where:

L=loan; D=deposits

CE = compensation of employees; OS = operating surplus;

CFC = consumption of fixed capital

Reg = regional level; cor = corporate level

The computation for consumption of fixed capital at regional level for banks above works for insurance. And also, we can rewrite the method of estimation of operating surplus and consumption of fixed capital for insurances by the following formula.

$$OS@reg = \left(\frac{NP@reg}{NP@cor} \right) * OS@cor$$

Where:

OS = operating surplus; NP = Net Premium

Reg = regional level; cor = corporate level

Constant Price Estimates

In principle, the estimates at constant price for both banks and insurance should be compiled by using the volume index deflator. However, there are practical problems to find volume indicators, as it is impossible to break the output of banks and insurances sector into quantity and price components. The problem is further aggravated when the imputed service charges are considered, as the imputed service cannot be attached with specific kind of output. As result of these and the absence of time series data with regard to the number of depositors by type and size, and class of deposits in the case

of banks and the number of insurance holders by type and size and class of insurance premium by insurance companies, it is hardly possible to employ the volume deflator. Therefore, in the absence of the volume deflator, the urban nonfood consumer price index (CPI) is applied to make estimates of the value added at constant price.

Table 25: GVA of Financial Intermediation at current and Constant 2008 prices (2008-2015EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	60.42	68.54	105.31	126.90	145.40	175.96	193.69	309.82
Total GVA- Constant 2008 Prices	60.42	71.22	80.79	91.71	99.90	95.11	79.09	105.85

6.11. Real estate Activities

Definition & Coverage

As the name implies this sector contains diverse components. Two of the more important components are Real Estate service and Renting activities. The Real Estate Activities in principle include the services related to acquiring housing or buildings not including the construction activities. The renting activities include all business units engaged in the renting, management and operation of real estate such as non-residential buildings, apartment buildings and other dwellings. The services of houses and buildings for businesses or living purposes as well as the operation of owner-occupied dwellings are included in the Ownership of Dwelling activity.

Data Sources

The population and housing census report, welfare monitoring survey, Addis Ababa poverty level study by BOFED, and expenditure and price data of CSA are the major source of data. Other sources include Addis Ababa trade bureau (no of enterprises engaged in the sector) and revenue authority (income statement of the business enterprises)

Method of Estimation

Ownership of Dwellings

The production method of value-added estimation has been used the type of data considered for estimation purpose includes:

- Owner occupied houses;
- Houses rented from Kebele;
- Houses rented from public housing agencies;
- Houses rented from other organizations;
- Houses rented from private households;
- Houses paying difference in rent;
- Rent free houses; and
- Not stated.

Accordingly, the housing stock multiplied by the average house rental of a housing unit gave us the gross rental of residential houses. The numbers of housing stocks for the years under consideration are obtained by extrapolating the data from Welfare monitoring study (2011 & 2016) and Poverty assessment study of Addis Ababa (2015) was used to obtain housing stocks for private and rented houses in Addis Ababa. In addition, data from Housing development project office was also used for condominium houses. The survey of kebele houses (2014) was also used to calculate available kebele rented houses and those destructed for expansion. To derive value added of the sub-activity, intermediate cost has to be deducted. The only cost involved in this case is the repair and maintenance cost of the housing unit. Therefore, the household income consumption and expenditure survey is used for valuation of the expenditure on repair and maintenance. Accordingly, expenditure on housing repair and maintenance is assumed to be 10 percent of the gross rental income. Finally, the gross rental income less intermediate consumption gave us the value added of the sub-sector.

For measuring the Gross value added of this sector, there are no recent survey results available. Therefore, the data from revenue authority and trade bureau is used. Hence, the gross value added is computed production approach, thus

The gross value of output obtained from the data. The intermediate consumption on the other hand is taken as 13% of gross value of output.

Thus, the value added at current price is computed using the 13% IC to GVO ratio. Since the cost of intermediate input for this sector (which is equal to the cost of repair and maintenance only) is about 20% of gross value of output. Value added at current basic price is estimated by deducting the cost of intermediate input from gross value of output, which is equal to annual rental income. For Residential: $GVO = \text{Housing Stock} * \text{Average Rent (CPI)}$ For Non-Residential: $GVO = \text{gross income}$ f $GVA = GVO - IC$ IC: 10% of GVO, for Repair & Maintenance Cost [For Residential] IC: 20% of GVO, for Repair & Maintenance Cost [For Non-Residential] The gross value added at constant basic price is, therefore, obtained by deflating the current basic price GVA using the appropriate adjusted price index.

Table 26: Summary of Value Added of by Real Estate at current and Constant 2008 prices (2008-2015EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	14.88	16.83	24.29	27.86	37.73	45.99	53.94	60.72
Total GVA- Constant 2008 Prices	14.88	15.40	16.92	19.73	18.14	20.86	23.60	24.17

6.12. Professional, Scientific and Technical Activities

Coverage

According to International Standard Industrial Classification (ISIC -4) professional, scientific and technical activities covers specialized professional, scientific and technical activities: legal and accounting activities, management and consultancy activities, architectural and engineering activities, scientific research and development, advertising, market research and other professional, scientific and technical activities and veterinary activities.

Data sources

The main sources of data for professional, scientific activities are the Ministry of Federal revenue to get no of enterprises engaged in the sector and income statement of the business enterprises from the year of (2015/16-2019/20 or 2008-2012) and CSA's report on Consumer price Index (CPI)

Method of estimation

For the Professional, Scientific and Technical Activities data from revenue authority and trade bureau is used to compile the value addition of the respective activities. Accordingly, production approach (Gross value of Output minus value of Intermediate Consumption) is used.

Finally, the value added at constant basic prices is estimated by deflating the current price estimate by a relevant price index (miscellaneous goods and service consumer price index).

Table 27: Summary of Value Added by Professional, Scientific & technical Activities at current and constant 2008 price(2008-2015 EFY)

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	5.82	8.07	2.76	2.47	2.65	3.73	11.79	11.67
Total GVA- Constant 2008 Prices	5.82	7.91	2.22	1.74	1.63	2.02	5.24	3.43

6.13. Administrative and support service activities

This sub sector includes a variety of activities that support general business operations. Sub categories include rental and leasing activities, activities of employment placement agencies, travel agency, tour operator, reservation service and related activities, security and investigation activities, services to buildings and landscape activities, office administrative, and office support and other business support activities.

Data Sources

We collected data and information on number of persons engaged and annual earnings from Income statement of tax data. The data on income and profit statements of enterprises for 2015/16-2019/21 or 2008-2015 EFY is obtained from Revenue and Customs Authority. The transport CPI collected from CSA report .

Method of estimation

We used production approach for estimation of gross value addition of this sub sector. The number of establishments for each category of business for 2015/16 – 2019/21) or 2008-2015 EFY is multiplied by both gross value output and Intermediate cost. i.e. GVO was obtained by multiplying gross income by number of establishments; whereas Intermediate cost is equal to total expenditure (excluding salary and wage, other

employments benefit and depreciation cost) multiplied by number of enterprise or business establishments then then value addition was obtained by subtracting intermediate cost from gross output. Finally transport CPI is applied over the current value addition to reach at constant value added

Table 28: Summary Estimate of Administrative and Support Service Activities at current and constant 2008 price (2008-2015EFY) in Billions

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	2.74	2.16	7.54	4.21	4.73	6.15	6.31	8.55
Total GVA- Constant 2008 Prices	2.74	2.52	6.49	3.09	2.92	3.32	2.57	3.41

6.14. Public administration and compulsory social security

Definition & Coverage

Public administration is defined as Government units or legal entities established by political processes that have legislative, judicial or executive authority for provision of goods and services to the community that are engage in non-market production (SNA 2008).

According to International Standard Industrial Classification (ISIC, rev.4), this section includes activities of a governmental nature, normally carried out by the public administration. This includes the enactment and judicial interpretation of laws and their pursuant regulation, as well as the administration of programs based on them, legislative activities, taxation, national defense, public order and safety, immigration services, foreign affairs and the administration of government programs. This section also includes compulsory social security activities.

The actual coverage excludes, all the Federal government ministries, defense, social security and bureaus rather than city administration resides in the city is excluded

because of their different ownership, management and economic interest. Therefore, we are only considering the Addis Ababa regional administration for estimation.

This public administration sub sectors covers all legislative and judiciary organs, all administrative organs/bureau at city including the expenditure of administrative part for water and sewage sector, education sector & health sector

Data sources

The sources of data for estimating the gross city output of public administration are the annual expenditure budget performance reports of the Addis Ababa Finance Bureau (BoF) and annual financial report of AABoF (Budget code 6100- personnel services & 6200-goods and services, 6300-Fixed Assets and Construction and 6400-Other Payments) and Financial information from the Extra-Budgetary Units, CSA 'general Consumer price Index data

Methods of Estimation

Current Price Estimates

According to SNA recommendation, government services can be valued by the sum of the costs incurred in the production process. The production approach was used to estimate the value of this sector. Though, the gross output of government services (for public sector and Extra budgetary) comprised of compensation of employees, cost of intermediate inputs (goods and non-personal services), consumption of fixed capital (depreciation)/ But in the Addis Ababa cases, no provision of allowance has been made for depreciation of fixed capital (or lack of provision for depreciation in the government account & no data on current capital stock) and also no indirect taxes are imposed on such services/so we cannot include this part

The sector's gross value added at current basic prices is defined as the difference between gross value output and intermediate cost or gross value of output less cost of intermediate inputs (purchase of goods and service).

Constant Price Estimates

In the case of services of public administration, no identifiable physical output is available. It is customary to measure the real output of government services either by an index of physical

labor input or deflating the current value-added estimates by an appropriate index of wages. For deflating Gross value addition, a wage rate index should be used. But due to the absence of wage rate index data (due to time lag in data availability and reliability problem from civil service Bureau), general CPI is used to deflate the current price value of GVA.

Table 29: Summary Estimate of Public administration and compulsory social security at current and constant 2008 PRICE (2008-2015EFY) in Billion

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	3.12	5.53	7.35	8.51	11.31	13.72	15.22	20.36
Total GVA- Constant 2008 Prices	3.12	5.42	6.22	6.28	7.04	7.13	6.22	7.87

6.15. Education

Definition & Coverage

According to the International Standard Industrial Classification (ISIC-4) and as per the United Nation System of National Account (SNA 2008), the Education sector covers a wide range of educational activities provided by government and non-government/private sectors, which follows the curricula of the ministry of education. It covers the activities of Universities, Colleges, Junior and Secondary Schools, Technical, Vocational and Commercial Schools, Special (deaf and blind) Schools, Kindergartens, Night Schools, Continuing Education, Adult and other training schools like language, typing, and driving schools. Church and Mosque schools that do not follow the curricula of the ministry of education are excluded.

Data Sources

The data sources used for estimating the value addition of Addis Ababa city education activities varies with the availability, reliability and comprehensiveness of the data. The sources of data for government education activities are IBEXs, where education expenditures made by the municipality and the ministry of education at federal level are made available as annual budget and expenditure report. Annual Statistical Abstracts

and annual education reports, which are available from the Ministry of Education and Addis Ababa city Education Bureau, provided us with information on the number of schools, number of students and number of teachers in both government and non-government categories. These helped us to estimate the Gross Output and Value Addition of education activities. Data also collected to fill the data gap on education fee per student (per credit hour and per month) particularly to estimate the value addition of the non-government education activities.

Method of Estimation

Current basic price Estimate

The current basic price estimate of the value addition for regular government education activities is done by using the cost approach, which comprised of compensation of employees; whereas the estimation for Government (Non regular) and Non-Government (Regular and Non regular) education services is done using the production approach, which considers revenue obtained from the services provided by the respective institutions.

Government Education

Before conducting the actual estimation of Gross Output and Value addition of education services provided by government education institutions, the necessary precautions and adjustments are made. Accordingly:

- The expenditure on purchase of motor vehicles and equipment included in the recurrent expenditures are reclassified as capital expenditure;
- Development expenditures of recurrent nature included in the capital budget category are reclassified as recurrent expenditure;
- Government transfer payments that are not made in exchange of goods and services rendered (like grants and subsidies) are excluded;
- For the non-regular education activities (Extension or Night schools and distance education), the revenue generated from the activities are taken as

gross value of output and the value addition is calculated using proportion of intermediate inputs used in the regular government education program for the respective institutions (Primary, Secondary, TVET, and Higher education).

Therefore, both the gross output and value addition of government education services are estimated from the adjusted budgetary and revenue data. In view of that, the gross output of the government education activities is first derived as the sum total of the budget of Ministry of education (at head office level operating in Addis Ababa) and Bureau of education (at municipal level) plus the revenue generated from the non-regular education activities of government education institutions. Here, six percent (6%) of the imputed pension contribution made by the government on behalf of its employees and parts of the external assistance that goes to the education bureau as recurrent budget are included in the estimation of the value addition.

Non-Government Education

With regard to non-government education activities (mission and private schools), the gross output and the value additions are estimated by using the production approach. Since, reliable financial statement could not be found especially from the private education sector, an alternative method of the production approach has been applied to obtain the gross output, the intermediate inputs and the value addition. In this case, a sample data was collected on school fee (per credit hour and per month as applicable) and the intermediate cost is imputed using the proportion obtained from the respective government education activities. Therefore, the weighted average school fee and intermediate cost have been determined. The total value of output has been obtained by multiplying the number of students reported at the various levels of non-government education and the average school fee of the respective institutions for each year. The gross value addition at current basic price is, therefore, computed by deducting the imputed intermediate cost from the total value of output of the respective education institutions. Accordingly, for the periods under consideration, the overall RGDP at current basic price of non-government education activities is estimated by summing up the value addition of non-government education activities.

Table 30: Summary of Education at constant 2008 Price and current basic price in Billions of birr

Business Activity (ESIC)	Values in Billions							
	2008	2009	2010	2011	2012	2013	2014	2015
Total GVA at current basic price	2.62	2.12	4.34	3.28	4.21	7.42	9.70	10.80
Total GVA- Constant 2008 Prices	2.62	2.75	6.40	3.98	3.28	5.30	4.23	4.95

Constant basic price Estimate

The estimation of the value addition of education activities at constant basic price is done by extrapolating the base-year value addition using composite (quantity and quality) index. These indices have been constructed for government education and for non-government education independently.

Since the relative total costs and qualities of education vary among primary, secondary, and higher education, it is important to give weights to each of these groups before adding up the number of students at different levels of education. Besides, one of the determinants of quality of education is student-teacher ratio. Thus, we have taken it as a measure of the quality of education on our way to develop quality index. Even though, the effect of student-teacher ratio on primary education has greater support in the literature than its effect on secondary and higher education outputs, we applied student-teacher ratio as a quality adjustment for all levels of education. The student-teacher ratio, which is readily available as compared to other quality indicators like student-classroom, student-textbook etc., is therefore taken as a proxy for class size. The method of constructing quantity and quality indices follows the following steps.

QUANTITY INDEX: The Quantity index is the ratio of the total number of students of current year to total number of students of the base year. Therefore: Quantity index = Total number of students of current year / Total number of students of base year.

QUALITY INDEX: The Quality index is constructed by dividing the inverse of student-teacher ratio of current year to that of the base year. Therefore: Quality index = Inverse (-0.1) of student-teacher ratio of current year / student-teacher ratio of base year. Before

adding up the quality indices of each education level, weights have been given to the different levels of education.

COMPOSITE INDEX: The quantity and quality sub-indices weighted and combined together are applied to extrapolate the base year value addition at constant basic price.

In conclusion, the value addition at constant basic price for the overall education activities is estimated by summing up the results derived by multiplying the base year value addition of government education by the composite index of government education and the base year value addition of non-government education by the composite index of non-government education developed for each year under consideration. Accordingly, the estimation of the value addition at constant basic price is made assigning 70% and 30% weights to the quality and quantity indices, respectively. This gives us a composite index.

$$CI = (QLI*0.7)+(QNI*0.3)$$

Where: CI = Composite Index

QLI = Quality Index

QNI= Quantity Index

6.16. Human Health and Social Work Activities

Definition & Coverage

According to the International Standard Industrial Classification (ISIC-4), the activity covers all health and social work services provided by government and non-government/private institutions. Specifically included are the activities of Hospitals, Health centers, Clinics, Traditional Medical Practitioners, Juvenile correction facilities, Orphanages, day care service, social work and Elderly people care centers.

Data Sources

The data sources used for estimating the RGDP of Addis Ababa city health and social work activities varies with the availability, reliability and comprehensiveness of the data. The sources of data for government health and social work expenditures made by the City Administration are made available as annual budget and expenditure IBEXs, report from Addis Ababa Bureau of Finance. The tax data of income and expenditure from ministry of Revenue was collected to estimate the Gross Output and Value Addition of non-government private modern health, traditional health activity and social work activities.

Method of Estimation

Current basic price Estimate

The current basic price estimate of GCP for government health and social work activities, non-government private modern health, traditional health activity and social work activities was done by using the production approach, which is the difference between gross value output and intermediate cost which considers revenue obtained from the services provided by the respective institutions.

Government Health & Social Work

Before conducting the actual estimation of Gross Output and Value addition of health and social work services provided by government institutions, as in the case of education, the necessary precautions and adjustments are made. Accordingly:

- The expenditure on purchase of motor vehicles and equipment included in the recurrent expenditures are reclassified as capital expenditure;
- Development expenditures of recurrent nature included in the capital budget category are reclassified as recurrent expenditure;
- Government transfer payments that are not made in exchange of goods and services rendered (like grants and subsidies) are excluded;

Therefore, both the gross output and RGDP of government health and social work services are estimated from the adjusted budgetary and revenue data. In view of that, the gross output of the government health and social work activities is first derived as the sum total of the budget of the Bureau of health (at municipal level) plus the budget data on the activities of government social works; then GVO is computed by Compensation of employee plus purchase of goods and service plus consumption of fixed capital whereas intermediate cost is the purchase of goods and service. Finally the Gross value addition at current price is gross value output minus intermediate cost.

Non-Government Health & Social Work

With regard to non-government health and social work activities, the gross output and the value additions are estimated by using the production approach. The reliable financial statement could be found from the ministry of revenue. The gross output was obtained by gross income multiplied by number of business establishments whereas, the intermediate inputs was total expenditure by excluding compensation of income and depreciation multiplied by number of business establishments the gross value addition is derived by deducting intermediate consumption from gross value of output

Accordingly, the overall RGDP at current basic price of government, on-government health and social work activities is estimated by summing up the value addition of government and non-government health and social work services.

Constant basic price Estimate

The estimation of the value addition of government, private health and social work activities at constant basic price is done by deflating the current price value addition using relevant health CPI

Table 31: Human Health and social work Activities at constant and current basic price (in Billions)

GVA	2008	2009	2010	2011	2012	2013	2014	2015
current	2.98	3.79	2.77	2.94	3.75	5.49	10.92	10.30
constant	2.98	4.53	2.40	2.24	2.61	3.20	3.95	3.77

6.17. Arts, Entertainment and Recreation

This section includes a wide range of activities to meet varied cultural, entertainment and recreational interests of the general public, including live performances, operation of museum sites, gambling, sports and recreation activities.

Data sources

The main sources of data for Arts, entertainment and recreation sector are Ministry of revenue (income statement of the business enterprises) and price index reports of central statistics authority. Other sources include Addis Ababa trade bureau (no of enterprises engaged in the sector) and

For the art, entertainment, recreational, cultural, & sport activities, we followed production approaches. The data from Ministry of revenue and trade bureau is used to compile the value addition of the respective activities.

For the cost approach, to get the value addition of the specified activities for each year, we subtract intermediate costs from the gross value of output.

Production approach (for Government Activities):

$$\mathbf{GVA = GVO - IC}$$

Where:

GVO = Gross value of output

GVA = Gross value Addition

IC = Intermediate Consumption

The constant price estimation is derived by deflating the current price estimate by the appropriate price index (recreation and culture CPI).

Table 32: Summary of Value Added of by Arts, entertainment and recreation (2008 – 2015 EFY)

GVA	Value in Billions								
	2008	2009	2010	2011	2012	2013	2014	2015	
current	0.32	0.88	0.52	0.19	0.23	0.29	2.40	1.58	
constant	0.32	1.00	0.50	0.17	0.20	0.23	1.14	0.61	

6.18. Other services

Definition & Coverage

Other Community, Social, and Personal Services cover all services of individuals, institutions and organizations that are not classified elsewhere. Therefore, all other services not categorized under the above services are included under this sector. The International Standard Industrial Classification (ISIC-4) activity group lists the following main categories of activities under other community, social, and personal services:

- i. Activities of Non-profit institutions serving households and membership organizations (business employers' organizations, professional organizations, trade unions, political organizations, religious organizations, etc.);
- ii. Other personal service activities like washing, dry cleaning, hairdressing/ beauty salon, funeral and related activities.

Data Sources

The main sources of data for other community, social and personal services sector are Addis Ababa trade bureau (no of enterprises engaged in the sector) and revenue and customs authority (income statement of the business enterprises) and consumer price index reports of central statistics authority.

Information about the number of licensed establishments operating in Addis Ababa is obtained from Bureau of Trade & Industry (BoTI), the Federal Charities & Societies Agency (FCSA) & Addis Ababa BoF NGOs Coordination Unit (NGOCU), which provided

us with data related to the list of Non-Profit Institutions Serving Households (NPISHs) operating in Addis Ababa from which sample survey on their activities was undertaken.

Method of Estimation

Current basic price Estimate

A combination of different methods of estimation has been adopted to compile the value added for this category. The first method involves collecting income and expenditure data from the institutions engaged in such activities and estimating the output and the value addition. This method has been applied to estimate the value addition of activities of NPISHs; religious organizations, membership organizations. The production approach is applied to compile gross output and value added for other personal service activities like, washing, dry cleaning, hairdressing/ beauty salon, funeral and related activities. Because NPISHs are not primarily engaged in profit making activity and do not sell most of their production, output and value added are valued at cost as in the case of Public Administration and Defense.

Constant basic price Estimate

The constant value added is obtained by deflating current value added using appropriate CPI.

Table 33: Summary estimate of other services @ constant and Current Prices (2008-2015 in Billions) Birr

GVA	2008	2009	2010	2011	2012	2013	2014	2015
current	1.56	2.53	4.33	2.71	3.58	4.73	1.08	7.04
constant	1.56	3.00	4.04	2.21	2.60	2.93	0.43	2.30

6.19. Private household with employed persons

According to ISIC-4 revised, this category includes persons employed by households, which encompasses the services rendered by maids, cooks, gate keepers, baby sitters, tutors, gardeners, chauffeurs, etc. The services produced in this sector are regularly consumed by the employing private households themselves. Due to the composite nature of this sector, it is somehow difficult to make comprehensive estimate. One of the reasons for its in-exhaustiveness is the scarcity of the necessary employment and price data at a disaggregated level.

Data Sources

The main sources of data for estimation of gross value added of this sector are CSA Urban Employment Unemployment Survey (2015, 2016, 2018,2021). We also used information from the 2010/11 Ethiopian household consumption – expenditure survey and 2016 and Addis Ababa poverty level assessment study by Addis Ababa University and BOFED (2015).

Method of Estimation

Estimation of value addition for this sub sector is based on the income approach, which considers wages (in cash & in kind) as factor income because the payments are made directly for labor involved in the production process. Therefore, the sum of payment in cash and in kind is assumed to be the value addition per person.

Since there is no intermediate input, cash payment is obtained by multiplying number of male and female persons engaged with their respective annual earnings for each year. In addition, free meals are given to employees of private households. Hence, we considered these meals as in-kind payments made for employees of private households. Since the in-kind payment is made mostly for full time employees of private households, we need to exclude part time workers from in kind payment calculation. We multiplied half of the food expenditure for adult obtained from the 2016 Ethiopian households' consumption – expenditure survey and 2015 Addis Ababa poverty level assessment study by number of full-time employees of private households. By sum up cash and in-kind payment we obtain value addition of this sector. Value addition at

constant price is obtained by deflating current value addition using domestic service CPI for Addis Ababa.

Table 34: Summary GVA of Private Household with Employed Persons (2008-2015 EFY) in 'million

GVA	2008	2009	2010	2011	2012	2013	2014	2015
current	0.17	0.21	0.18	0.19	0.20	3.44	3.28	4.09
constant	0.17	0.18	0.12	0.06	0.54	1.70	1.21	1.33

8. Concluding Remarks

1. Reduce dependence of city economy on traditional single trade sector by:
 - Promoting modern service sectors (real estate, financial sector, informational communication, professional, scientific technical sectors)
 - Expand diversification to tradable goods sector- manufacturing and urban agriculture and construction
 - promoting non-profitable institution serving households
 - promoting tourism industry
2. Expand the role of private sector in financial service sector
3. Attention to solve challenges faced in those sectors that registered negative growth rate in employment and gross value addition need to be given.

References

- AAU and BOFED (2015). Poverty Level of Addis Ababa city Administration
- European Union. (2013). Manual on Regional Accounts Methods
- MPD(2013): Ethiopian Regional Economic Accounts Hand Book
- Measurement of GDP by final expenditure approach: an introduction, Department of Economic and Social Affairs Statistics Division United Nations, National Bureau of Statistics of China. Vu Quang Viet Background paper 25-27 April 2011 Shenzhen, China.

- MOFED (2014). National Accounts Statistics; Concepts, Sources and Methods
- MOT (2005). Ethiopian Standard Industrial Classification (ESIC).
- National Accounts Statistics Concepts, Sources and Methods, the Federal Democratic Republic of Ethiopia, Ministry of Finance and Economic Development National Economic Accounts Directorate; 2014, Addis Ababa, Ethiopia.
- Sources and Methods, National Accounts Statistics of Ethiopia 1992 (1999/2000) Base Year Series (Draft), National Accounts Department Ministry of Finance and Economic Development; May 2005 Addis Ababa, Ethiopia.
- System of National Accounts 2008, European Commission, International Monetary Fund, Organization for Economic Co-operation and Development OECD, United Nations and World Bank; New York, 2009.
- United Nations (2008). International Standard Industrial classification of All Economic Activities (ISIC) rev. IV
- UNITED NATIONS, STATISTICAL PAPERS SERIES M No. 84; DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS STATISTICS DIVISION, New York, (2000) Web reference: <http://unstats.un.org/unsd/class/default.asp>

PART-II: GCP BY EXPENDITURES APPROACH (GCP-E)

I. Introduction

The Planning and Development Commission of the City of Addis Ababa (AAPDCo) is one of the central and foremost institutions producing development indicators for the preparation of development plans and policy-related analyzes according to Proclamation No. 64/2011 E.C.

In accordance with the tasks and responsibilities, it carries out periodic assessments of economic performance and creates indicators in a timely manner. One of these ratings is the economic rating / estimate of the GCP's expenditures such as consumption, gross investment / investment and other related indicators.

The GCP spending estimates described in this document are experimental statistics as estimates of GDP at sub-national / regional / level are practically difficult. However, the SNA highlighted that regional accounts, even with some caveats, are a very useful tool for economic policy.

Although the complexity of compiling GDP is shared at the sub-national (regional) level, the Spending Approach surveys (especially for urban accounts) are more complex and require extraordinary efforts to conform to national / international concepts and methodology, and therefore for economic decisions and analyzes can be used.

This document attempts to present the Addis Ababa City Administration's GCE for fiscal years 2008 - 2015 (2015 /16-2022/23 EFY) as part of the economic evaluation research initiatives. It includes preliminary estimates using the EFY 2008 as the base year for the real analysis, and includes the level, pace and structural makeup of the expenditure indicators along with the basic concepts underlying the entire estimation process, the sources and methodologies used to Creation of the estimates developed were nominal (at current prices) and real (at constant prices) - in an easily understandable flow.

II. Executive Summary

- GCP's expenditure estimates used the EFY 2008 as a base year to make real estimates in order to avoid inflationary effects on the volume of expenditure on goods and services.
- The total expenditures for the gross product of the city of Addis Ababa (GCP (E)) reached 1938.1 billion Birr during the EFY 2015 at current market prices. The average share of the expenditure components during the 2008-2015 fiscal years was: final consumption expenditure = 52.5%, gross investment = 33.0% and the compensation value (=14.5%) attributed to other components of the expenditure; can be statistically represented by net exports and other errors and omissions.
- A further decomposition of the 52.5% stake in FCE shows that household, government and NPISH final consumption expenditure contributed approximately 49.8%, 0.1% and 2.6% of the shares, respectively.
- The real GCP (E) level reached Birr 691.0 billion in EFY 2015 and with a real annual average growth rate of 8.4% (of which the percentage change in consumer spending was 7.6% and that in gross capital was start-up / investment was 4.7%).
- Estimates of final consumption by households at constant prices (i.e., in real terms) show an average real growth of 7.5%.
- On average, the share of gross savings is estimated to be around 47.5% of total GCP at current market prices.
- The level of gross capital formation (investments) at current market prices reached Birr 519.2 billion in the EFY 2015 and the average share during the reference fiscal years have been 33.0% of the GCP (E).
- Further distribution of the 33.0% of the GCF at current market price in terms of the type of assets has shown that; On average, the gross fixed capital formation (GFCF) contributed around 94.4%, the remaining shares are accounted for by changes in inventories; 5.4% and net worth; 0.2%.
- By asset type of the GCF, the average distribution showed: construction; 48.1%, transportation equipment; 19.2%, machinery and equipment; 14.5%, changes in stocks; 5.2%, other fixed assets; 12.7% and net valuables; 0.24%.
- In terms of nominal GCF by property/ownership type, the private sector contributed, on average, about; 85.1% while the rest is publicly funded; 14.8% and NPISHs; 0.1%.

- In real terms, the GCF is forecasted to register around 180.7 billion Birr during the 2015 EFY with a historical average growth rate of 4.7%.
-

III. Overview of Basic Concepts and Definitions⁴

A. The SNA: Overview

The System of National Accounts (SNA) is the internationally agreed standard set of recommendations for the creation of economic performance indicators according to strict accounting conventions based on economic principles. It is designed so comprehensively that individual countries / regions, regardless of their economic structures, institutional arrangements or their level of development, can select the parts of the SNA that are appropriate in the light of their own needs and capabilities. In addition, the SNA is designed for economic analysis, decision making and policy making regardless of the industrial structure or stage of economic development of a country / region. The basic concepts and definitions of the SNA depend on economic considerations and principles which should be universal and invariant for the particular economic circumstances in which they are applied. The classifications and accounting rules should also be generally applicable.

The SNA's recommendations are expressed in the form of a set of concepts, definitions, classifications and accounting rules that comprise the internationally agreed standard for measuring items such as gross domestic product (GDP), the most cited indicator of economic performance. These standards provide a comprehensive and detailed record of the complex economic activities within an economy and the interaction between the various economic actors and groups of actors that take place in markets or elsewhere.

The SNA contains a number of conceptual elements that define the SNA's accounting framework and enable various aspects of the questions raised to be answered with regard to: a) Institutional units and sectors (who?); b) transactions and other flows (what?); c) assets and liabilities (which

⁴ More elaborated definitions and explanations on selected concepts and terminologies are presented in the glossary section.

stocks?); d) products and production units (other aspects of whom and what?); and e) purposes (why?).

B. The concept of Boundaries in the SNA

a. Boundaries: Economic Territories and Resident Units

The SNA accounts are created for resident institutional units grouped into institutional sectors and subsectors. An institutional unit is considered to be resident in the economic area of a country / region if it maintains a center of predominant economic interest in this area, either indefinitely or over a long period of time, which is normally interpreted as a year.

The economic area comprises land, airspace, territorial waters, including jurisdiction over fishing rights and rights to fuels or minerals. In a sea area, the economic area comprises islands that belong to the area. The economic area also includes territorial enclaves in the rest of the world.

Economic territory has the dimensions of physical location as well as jurisdiction. The economic area and residence concepts are designed to ensure that each institutional unit is located in a single economic area.

Regional / city boundaries could also be defined; generally refer to institutional units that operate in the area of the region / city and have an overriding economic interest in that particular region / city.

b. The production boundary

The activity of production is fundamental. In the SNA, production is understood as a physical process that is carried out under the responsibility, control and direction of an institutional unit and in which workers and assets are used to convert inputs of goods and services into outputs of other goods and services. All goods and services produced as output must be designed in such a way that they can be sold in markets or at least made available from one unit to another in return for payment or free of charge. The SNA includes within the production limits all productions actually intended for the market, be it for sale or for exchange. It also includes any goods or services provided free of charge to individual households or collectively by government units or NPISH.

c. Asset Boundary

Financial assets; in the sense of the SNA are companies that have to be in possession of one or more units and from which their owner (s) derive economic advantages by holding or using them for a certain period of time.

All goods and services that are made available to the economy through production, import or the sale of produced assets must be used for exports, consumption (interim or final consumption) or as part of capital formation. The boundary between the products that remain in the economy and are used for consumption and the products that are used for capital formation is known as the wealth limit. The asset limit for fixed assets therefore consists of goods and services that are used in production for more than a year.

d. Final consumption, intermediate consumption and gross fixed capital formation

Consumption is an activity in which institutional units consume goods or services, but there are two very different forms of consumption. Intermediate consumption consists of goods and services that were consumed in the course of production within the accounting period. Final consumption consists of goods and services that are used by individual households or the community to meet their individual or collective needs or desires. The activity of gross fixed capital formation, like intermediate consumption, is limited to institutional units in their capacity as producers and is defined as the value of their acquisitions minus the disposals of fixed assets.

C. Timing and Valuations of Expenditures

Consumption expenditures: According to the general principles of the SNA, expenditures are to be recorded when the liabilities arise, ie when the buyer enters into a liability to the seller. This implies that the expenditure for a good is to be recorded at the time of the change of ownership, while the expenditure for a service is recorded when the service is completed. Non-monetary transactions are recorded when the goods in question are made available to the household.

Household expenditure is recorded at the **purchasers' prices** paid by households including any taxes on products that may be payable at the **time of purchase**.

Gross investment; the general principle for recording acquisitions minus disposals of fixed assets is when ownership of the fixed assets passes to the institutional unit that intends to use them for production. With the exception of two special cases, this point in time does not generally correspond to the point in time when the fixed assets were created. Nor is it necessarily when they are used to produce other goods or services.

D. Standard Classifications of GCE components

The SNA accounts are based on a small number of conceptual elements, particularly sectors, transactions, and classifications of items governed by transactions and other flows, particularly assets and liabilities. There is a hierarchical classification for each of these elements. Various international classification systems outside of the SNA those are widely used and referred to in the process and presentation of SNA-related economic indicators. As far as relevant to this document, the recommended appropriate classifications are based on classifying expenses by purpose. These include: Classification of Government Tasks (COFOG), Classification of Individual Consumption by Purpose (COICOP), Classification of Non-profit Household Purposes (COPNI), and Classification of Producer Expenditures by Purpose (COPP). (N.B. of these, only the COICOP classification is used in this study).

IV. COVERAGES, SOURCES OF DATA & METHODS OF ESTIMATION

1. Final Consumption Expenditures

The SNA defines consumer spending as the amount of spending on consumer goods and services. Final consumption expenditure is expenditure by resident institutional units on goods or services used in the direct satisfaction of individual needs or desires, or the collective needs of members of the community. This is expenditure, whether from government units or private institutions. Consumption expenditure is basically divided into three categories: private consumption expenditure (PFCE) (consisting of consumption expenditure of private households and consumption expenditure of private non-profit making organizations) and consumption expenditure of the government (GFCE).

A. Households Final Consumption Expenditure

a) Coverage's and Definitions

According to the SNA, Household Final Consumption Expenditure (HFCE) comprises expenditure, including imputed expenditure, made by resident households on individual consumer goods and services. In addition to purchases of consumer goods and services, consumer spending includes the estimated value of barter transactions, goods and services received in kind, and goods and services that are produced and consumed by the same household (SNA 2008). Consumption expenditure on property, plant and equipment in the form of residential or household expenses for companies or valuables are excluded from consumption expenditure by private households.

Household final consumption expenditure includes all purchases made by resident households (in Switzerland or abroad) to meet their daily needs or needs: food, clothing, housing services (rent), energy, transport, durable goods (especially cars), health expenditure, on Leisure and other services. The household expenses are made up of:

- Households' purchases of products for their everyday needs (e.g. food, clothing, furniture, television, cars, rents, personal services for house hold members) less their net sales of second hand goods and scarps.
- Imputed rents for services of owner-occupied housing.
- Imputed values food, or other agricultural goods or other services of unincorporated household enterprises retained for own consumption such as crop, livestock product, firewood and other non-market or subsistence output.
- Value of goods and services received as income (wage) in kind by employees (food stamps, public schooling, or socialized medicine, free housing, free or reduced air tickets employees)
- Services (Payments) to stay in their own homes and services paid domestic workers (child minders, cooks, gardeners, chauffeurs etc.)
- Expenditures on repair and maintenance of consumer durables, including vehicles, and minor repairs to dwellings (not reconstructions or enlargements)

- Payment to government units to obtain various kinds of licenses, permits, certificates, passports, etc. and,
- Financial intermediation services charges (Bank, insurance services & pension funds)

b) Sources of Data

- Report on Household Consumption and Expenditure (HCE) Survey 2015/16 with necessary adjustments (CSA)
- Report on Producer's Price, Consumer Price Index and Retail Price of Goods & Service (CSA)
- Analytical report on population and housing census and population projections (CSA)
- Report on Welfare Monitoring Surveys (CSA)
- Urban employment unemployment Survey. (CSA)

c) Methods of Estimation

i. Estimation of HFCE at Current Prices

The current price estimate of private consumption expenditure (HFCE) for the base year is made by taking data directly from the CSA survey of private consumption expenditure (HCE) 2015/16 with the necessary adjustments. For other consecutive years, the estimates for the reference year are extrapolated using the annual average growth rates of per capita final consumption expenditure for the total population.

The components of HFCE are classified and presented by using the standardized 123 COICOP category as follows:

1. Food and non-alcoholic beverages
2. Alcoholic beverages and tobacco, narcotics
3. Clothing and footwear
4. Housing, water, electricity, gas and other fuels
5. Furnishings, household equipment and routine maintenance of the house
6. Health and medical treatment
7. Transport
8. Communication
9. Recreation and culture

10. Education
11. Restaurants and hotels
12. Miscellaneous goods and services.

ii. Estimation of HFCE at Constant Prices

In addition, the expenditure on imputed rents (for owner-occupied houses) and benefits in kind for the population are taken into account according to the recording of household consumption expenditure by taking the expenditure per household from the HCE survey and the number of owner-occupied houses from the welfare monitoring survey of the CSA . For the population with benefits in kind, the number of clerks is multiplied by the material expenses per household.

Household Final Consumption Expenditure estimation at constant price is done by deflating each expenditure items by the corresponding consumer price index of the respective years.

d) Remarks

Although the CSA household consumption and expenditure survey is the main source of data, the survey is carried out every five years. The use of average growth rates between surveys or other extrapolation mechanisms has limited the quality of the estimates. In addition, some items of expenditure, such as expenditure on pre-primary education, higher education and distance learning, are not included in the HCE survey. Therefore, the CSA seeks to fill this gap in its survey and make further refinements to determine the level or proportion of output consumed by households and NPISHs for several goods and services that may not be included in the estimate.

B. NPISHs' Final Consumption Expenditure

a) Coverage's and Definitions

NPISHs are defined as legal entities that primarily provide non-market services to households or the general public and whose main source of income is voluntary contributions. Household's not-for-profit organizations are not-for-profit organizations that provide goods or services to households, free of charge or at irrelevant prices, to other institutional units, or to the community as a whole. Non-profit organizations excluded from this group include: non-profit organizations that serve the economy and are financed and controlled by the economy, business enterprises such as co-operatives and mutual, which normally get their costs through the sale of services,

and non-profit organizations that are mainly funded and controlled by the government. Non-profit institutions serving households are classified under the corporate sector if they are market-based and the general government sector if they are non-market- NPISHs can be professional or professional associations, trade unions, societies, consumer associations, political parties, social, cultural and recreational or sports associations formed by non-profit associations that do not cover their expenses by selling their services. Driven but under state control.

b) Sources of Data

- Addis Ababa Finance and Economic Development Bureau (NGO's Support & Monitoring Core Process).
- Annual budgetary/financial report of NGOs operating in the region.

c) Methods of Estimation

The final consumption expenditure of private non-profit institutions serving private households is estimated, like that of the state, as their gross production minus the value of their income from the sale of goods and services and minus any personal investments they make. In contrast to consumption by private households, the fixed investment, including durable goods in private non-profit organizations, whether purchased from other producers or manufactured for their own account, is excluded from consumer spending and counts as fixed investment.

i. Estimation of NPISHs final Expenditure at Current Prices

The components of consumer spending (compensation of employees and advance payments) at current prices are randomly compiled from the annual financial reports of the institutions operating in the region.

The annual final consumption expenditure of these sampled organizations is used directly as the current NPISH price estimate and extrapolated to cover / proxy the total number of people working in the city administration.

ii. Estimation of NPISHs final Expenditure at Constant Prices

The final consumption expenditure NPISHs are calculated at constant prices on the total level. Data at current prices, which are taken from the annual financial statements, are deflated with the corresponding consumer price index.

d) Remarks

Notes the final consumption expenditure of NPISHs who have projects and operate in the region is sampled from the annual financial reports of each NGO. Therefore, to minimize estimation limitations due to sample proxies, full coverage estimation (i.e., census approach) should be used for future estimates. Hence, the CSA is expected to do a full survey of the NGOs to take into account their economic contribution in the city.

C. Government Final Consumption Expenditure

a) Coverage's and Definitions

According to the SNA, government final consumption expenditure includes government expenditure, including expenditure, the value of which must be indirectly estimated, for both individual consumer goods and services and collective consumer services.

In the case of Addis Ababa, actual coverage includes all consumer spending by regional government bodies (offices, sub-cities, commissions, agencies, authorities, institutes and woredas).

b) Sources of Data

The main sources of data for estimating government consumption expenditure by the Addis Ababa city council are budget documents and annual reports from the Bureau of Finance and Economic Development (AA BoFED).

c) Methods of Estimation

The final consumption expenditure of government can be derived as follows:

GFCE at current market price =

+ The value of all types of output of general government,

- The value of output for own account capital formation,
- The value of sales of goods and services at both economically insignificant prices and at economically significant prices,
- + The value of goods and services purchased from market producers for delivery to households free or at economically insignificant prices.

In calculating the government final consumption expenditure, expenditures are used in combination with income methods. The following adjustments are also done as they are not part of final consumption expenditure:

- First, outlays having capital nature such as expenditures on purchases of motor vehicles and equipment which are considered as part of capital expenditure are excluded.
- Second, in the capital budget, certain items which are considered to be part of recurrent expenditure rather than capital expenditure are classified as part of current expenditure and hence, included in final consumption expenditure.
- Third, the general government expenditure also provides data on outlays in the form of grants and contributions. These are also analyzed and an estimated portion that constitutes a transfer in kind is taken to be added to the expenditures on consumption goods and services.
- Fourth, the ordinary expenditure data on external assistance is also analyzed and the portion that goes to the purchase of goods and services is determined.
- Fifth, outlays on items such as interest on and repayment of public debt, subsidies and other current transfers that appear in the ordinary expenditure are eliminated as they do not belong to expenditures on goods and services.
- Sixth, the general government budgetary revenue data are also analyzed and only those items that are considered to be receipts from sales of goods and services are picked out.

i. Estimation of GFCE at Current Prices

Government consumption is the sum of employee compensation, net purchases of goods and services and consumption of fixed capital. The estimates are made from the federal and state / city budget documents by analyzing the IBEX data.

Since the gross production of the producer of public services (the state body) contains neither operating surplus nor depreciation costs and does not pay indirect taxes in the provision of its

services, the gross production corresponds precisely to the production costs, which are composed of:

- Personal services (Compensation of employees)
- Purchase of goods and non-personal service
- Less revenue receipts from sales of goods & services

Thus, the aggregate consumption expenditure of the state at current price estimates corresponds precisely to the gross production minus the sales of goods and services and the investments on own account, which flow into the investments of the city governments. In other words, the gross final consumption of the state corresponds to the gross performance of the administrative departments, which is also the total current expenditure of the administrative departments for the provision of public services. i.e.:

GFCE = Personal Services (emoluments⁵, allowances/benefits and pension contributions)

+ Net purchase of goods and services+ Consumption of fixed capital (CFC).

ii. Estimation of GFCE at Constant Prices

Constant price estimates are prepared separately for compensation of employees, net purchase of commodities and services and consumption of fixed capital (CFC).The constant price estimates of compensation of employees are prepared by deflating the estimates of compensation of employees at current prices by the Wage index or General Consumer Price Index for the city. Estimates of purchase of commodities and services net of sales at constant prices are obtained by deflating current price estimates by the general price index.

Compensation of employees consists of gross wages and salaries (we construct index of wage and salaries by providing the distribution of annual number of employees. The mid salaries levels of each class in each year together with the corresponding number of employees are

⁵ **Emoluments** are payments in cash to individuals for services rendered to the government (by permanent, military, contract, casual and external contract employees). Included are: salaries to permanent staff, salaries to military staff, wages to contract staff, wages to casual staff, wages to external contract staff and miscellaneous payments to staff.

used). Therefore, the current price estimates are deflated by using wage rate index or general consumer price index of Addis Ababa.

d) Remarks

The estimates for consumption of fixed capital (CFC) in general are not robust and hence, further input data improvement in terms of coverage and qualities are crucial.

2. Gross Capital Formation

a) Coverage's and Definitions

According to the SNA 2008, Gross capital formation shows the acquisition less disposal of produced assets for purposes of fixed capital formation, inventories or valuables.

The coverage of assets is limited to those assets which are subject to ownership rights and from which economic benefits may be derived by their owners by holding them or using them in an economic activity as defined in the SNA. Consumer durables, human capital and those natural resources that are not capable of bringing economic benefits to their owners are outside the scope of assets in the SNA.

Gross capital formation is defined as parts of output and imports that are not consumed or exported during the accounting period, but set aside as addition to stocks or capital goods.

Gross capital formation is measured by the total value of the gross fixed capital formation, changes in inventories and acquisitions less disposals of valuables.

Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain specified expenditure on services that adds to the value of non-produced assets. Therefore, fixed assets are tangible or intangible assets produced as outputs from processes of production that are used repeatedly or continuously in other processes of production for more than one year.

There is substantial diversity in the different types of gross fixed capital formation that may take place. The following main types may be distinguished:

- ❖ Acquisitions, less disposals, of new or existing tangible fixed assets, subdivided by type of asset into:
 - Dwellings;
 - Other buildings and structures;
 - Machinery and equipment;
 - Cultivated assets – trees and livestock that are used repeatedly or continuously to produce products such as fruit, rubber, milk, etc.
- ❖ Acquisitions, less disposals, of new and existing intangible fixed assets, sub-divided by type of asset into:
 - Mineral exploration;
 - Computer software;
 - Entertainment, literary or artistic originals;
 - Other intangible fixed assets;
- ❖ Major improvements to tangible non-produced assets, including land;
- ❖ Costs associated with the transfers of ownership of non-produced assets.

Change in stock (Inventories):

- Change in stock include goods purchased for intermediate consumption or resale by producing units but not yet used or sold,
- Finished goods in the hands of producer not yet sold or disposed of in other ways,
- Work in progress (semi-finished goods) and
- Addition to cultivated assets (trees and livestock) that are used continuously to produce products such as rubber and milk.

b) Sources of Data

The data sources of gross capital formation for Addis Ababa City Administration are summarized as follows in three parts:

➤ **Administrative Sources (Budgetary/Financial Reports)**

- Budgetary revenue and expenditure report of Addis Ababa city Administration Finance & Development Bureau.
 - Financial reports of public enterprises operating in the region/city.
 - Financial reports of non-government and non-profit making organizations operating in the region/city, from NGO's Projects Support and Monitoring Core Process of Finance and Economic Development Bureau
 - Other data collected from different organizations i.e., Ethiopian Airlines, Ethio-Telecommunication, Postal Service, Ethiopian Electric Utility, Anbesa City Bus service etc.
- **Statistical Sources (Surveys and Census Reports)**
- Large and Medium Scale Manufacturing Survey
 - Small Scale Manufacturing Survey
 - Cottage/Handicraft Manufacturing Survey
 - Distributive and Service Trade Survey
- **Other administrative sources**
- Ethiopian and Addis Ababa City Administration Investment Commission

c) **Methods of Estimation**

GCF by Type of Ownership

1) Government GCF

The GCF of the government is estimated by the costs of acquisitions of those assets having capital nature from IBEX data of Finance and Economic Development Bureau. However, as in the case in GFCE, the following adjustments are made:

- Capital nature expenses like purchase of motor vehicles and equipment under the recurrent budget are added to the capital expenditure.
- Similarly, recurrent nature capital expenditures are deducted from the capital expenditure categories.

2) Public Enterprises GCF

Public Enterprises are those organizations operating in the city and which, are administered by either the federal or regional government but making profits. Such institutions include: all public banks and Insurances, Microfinance Enterprises, Ethiopian Electric Utility, Telecommunication, Ethiopian Postal Service organization etc.

The GCF of the public enterprises is computed by collecting enterprise level data from all those enterprises operating in the city.

3) Private GCF

The private GCF consists of capital formation by households, private enterprises and NPISHs. Accordingly, GCF made by those sectors is estimated separately.

- **Households**

Gross capital formation by households consists of is construction of dwellings i.e. residential buildings and costs on repair & maintenance, acquisitions less disposals of valuables. The GCF by construction sector for household units is directly taken from construction sector GVO of supply side GDP estimation and value of valuables is taken from the HCE survey report of CSA.

- **Private Enterprises**

This sub sector covers both organized and non-organized non-government establishments like manufacturing industries (large and medium scale, small scale and cottage) and trade establishments.

The GCF of private enterprises is estimated based on various CSA's annual surveys. In cases where annual surveys are not available, inter-survey growth rates are used to extrapolate benchmark estimates.

- **GCF by NPISHs**

GCF by NPISHs includes all local and international non-government and non-profit making organizations working within the boundary of the city. GCF is taken as the sum of costs of individual fixed assets, which are collected from the annual financial reports of NGOs operating in the region/city.

i. Estimation of GCF at Current Prices

Total GCF at Current Price =

+ Gross Fixed Capital Formation

(= + cost of construction

+ Cost of machinery and equipment

+ Cost of transport equipment

+ Cost of other assets (Computer Software))

+ Change in inventories

+ Net (: Acquisitions less disposals) of Valuables.

ii. Estimation of GCF at Constant Prices

Generally, the constant price estimation of gross capital formation is done by deflating the current price estimates by the appropriate price index. Constant price estimates from construction is directly taken from the constant price GVO of construction sector from supply side construction.

d) Remarks

Although SNA 2008 has extended and introduced further specifications in the concepts of assets, capital formation and consumption of fixed capital, this is not fully addressed in the current estimation due to lack of data/information. Moreover, some components of GCF like changes in cultivated assets are not included. Hence, calling for further efforts to incorporate same.

The GCF estimates are presented in two forms: by ‘**GCF by Types of Assets**’ (Fixed assets, Changes in inventories and valuables) and GCF by ‘**GCF by Types of Ownership**’ (Private, Public, NPISHs).

3. Net Exports

Remarks

Exports and imports of goods and services between the domestic economy and the rest of the world are transactions between residents and non-residents of an economic territory.

These transactions could take the form of sales, barter or, gifts between residents and one or more non-residents or ‘rest of the world’ – which in this case, may refer to non-resident actors (producers, consumers, investors/savers...) from other regional states and city administration as well as from other international origins.

The proper way of accounting for net exports (=Exports less Imports) should involve treating both formal and informal deliveries/transactions to and from other nations/regions/cities. However, the practical difficulties of doing so in regional/city accounts are very considerable. Such practices call for sophisticated information tracking/recording systems between the actors. Hence, due to this impracticability, estimates for net exports are opted to be part of the statistical discrepancy as a residual to balance the accounting identity between the GCP (P) and GCP (E).

V. Details of Estimation Results

Table 15- GCP by Expenditure Approach at Current Market Price. (2008 EFY=100% Series) (Billion Birr)⁶

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015
Final consumption expenditure	205.1	226.3	306.1	306.4	433.7	622.3	845.5	1103.9
Household final consumption expenditure	196.7	214.8	291.3	287.8	410.8	581.5	806.1	1049.1
Final consumption expenditure of NPISHs	0.3	0.5	0.8	1.4	1.2	1.0	2.3	4.7
Government final consumption expenditure	8.1	11.0	14.0	17.3	21.7	39.8	37.2	50.0
Gross capital formation	145.7	162.8	195.1	220.9	269.8	411.6	441.4	519.2
Gross fixed capital formation	134.5	148.7	182.2	207.4	256.4	398.1	426.6	503.4
Changes in inventories	10.9	13.8	12.3	13.1	12.7	12.9	13.4	14.0
Net Valuables	0.3	0.3	0.6	0.4	0.7	0.6	1.4	1.8
Residual	41.8	56.4	66.2	160.8	174.6	85.9	200.6	315.0
Gross Saving at City Level (proxy!)	187.5	219.2	261.3	381.7	444.4	497.5	641.9	834.2
Gross City Expenditure	392.5	445.5	567.4	688.1	878.1	1119.8	1487.5	1938.1
Gross City Product @Market Price	392.5	445.5	567.4	688.1	878.1	1119.8	1487.5	1938.1

⁶ 'Residual' is a term used for the difference between the measures of GCP (P) from the GCP (E) approach. In this case, it is indicated as a remainder which is supposed to include net-exports and statistical discrepancies.

Table 16-Growth rate in Gross City Product by Expenditure Approach at CURRENT MARKET PRICE
(2008 EFY =100% Series) (%)

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015
Final consumption expenditure		10.3	35.3	0.1	41.5	43.5	35.9	30.6
Household final consumption expenditure		9.2	35.6	-1.2	42.7	41.5	38.6	30.2
Final consumption expenditure of NPISHs		48.6	64.1	64.6	-14.1	-16.4	126.5	109.5
Government final consumption expenditure		36.8	26.7	23.7	25.8	83.0	-6.4	34.4
Gross capital formation		11.7	19.9	13.2	22.1	52.6	7.2	17.6
Gross fixed capital formation		10.6	22.5	13.9	23.6	55.3	7.1	18.0
Changes in inventories		26.3	-10.5	5.8	-2.8	1.4	4.1	4.1
Net Valuables		7.2	114.3	-31.4	67.9	-18.5	137.7	33.8
Residual		35.0	17.3	142.8	8.6	-50.8	133.5	57.1
Gross Saving at City Level (Proxy!)		16.9	19.2	46.1	16.4	11.9	29.0	30.0
Gross City Expenditure		13.5	27.4	21.3	27.6	27.5	32.8	30.3
Gross City Product @Market Price		13.5	27.4	21.3	27.6	27.5	32.8	30.3

Table 17-Decomposition of Gross City Product by Expenditure Approach at CURRENT MARKET PRICE (2008 EFY =100% Series) (%)

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015	Average (%)
Final consumption expenditure	52.24	50.80	53.95	44.53	49.39	55.57	56.84	56.96	52.5
Household final consumption expenditure	50.10	48.21	51.34	41.82	46.78	51.93	54.19	54.13	49.8
Final consumption expenditure of NPISHs	0.09	0.12	0.15	0.20	0.14	0.09	0.15	0.24	0.1
Government final consumption expenditure	2.05	2.47	2.46	2.51	2.48	3.55	2.50	2.58	2.6
Gross capital formation	37.11	36.54	34.38	32.10	30.72	36.76	29.67	26.79	33.0
Gross fixed capital formation	34.26	33.38	32.10	30.14	29.19	35.55	28.68	25.97	31.2
Changes in inventories	2.78	3.10	2.17	1.90	1.45	1.15	0.90	0.72	1.8
Net Valuables	0.07	0.06	0.11	0.06	0.08	0.05	0.09	0.09	0.1
Residual	10.65	12.66	11.67	23.36	19.89	7.67	13.48	16.25	14.5
Gross Saving at City Level (proxy!)	47.76	49.20	46.05	55.47	50.61	44.43	43.16	43.04	47.5
Gross City Expenditure	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0
Gross City Product @Market Price	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.0

Figure 1-Structural Decomposition of GCP by Expenditure Approach for Addis Ababa City (At Current Market Price) (2008- 2015 EFY Average) (%)

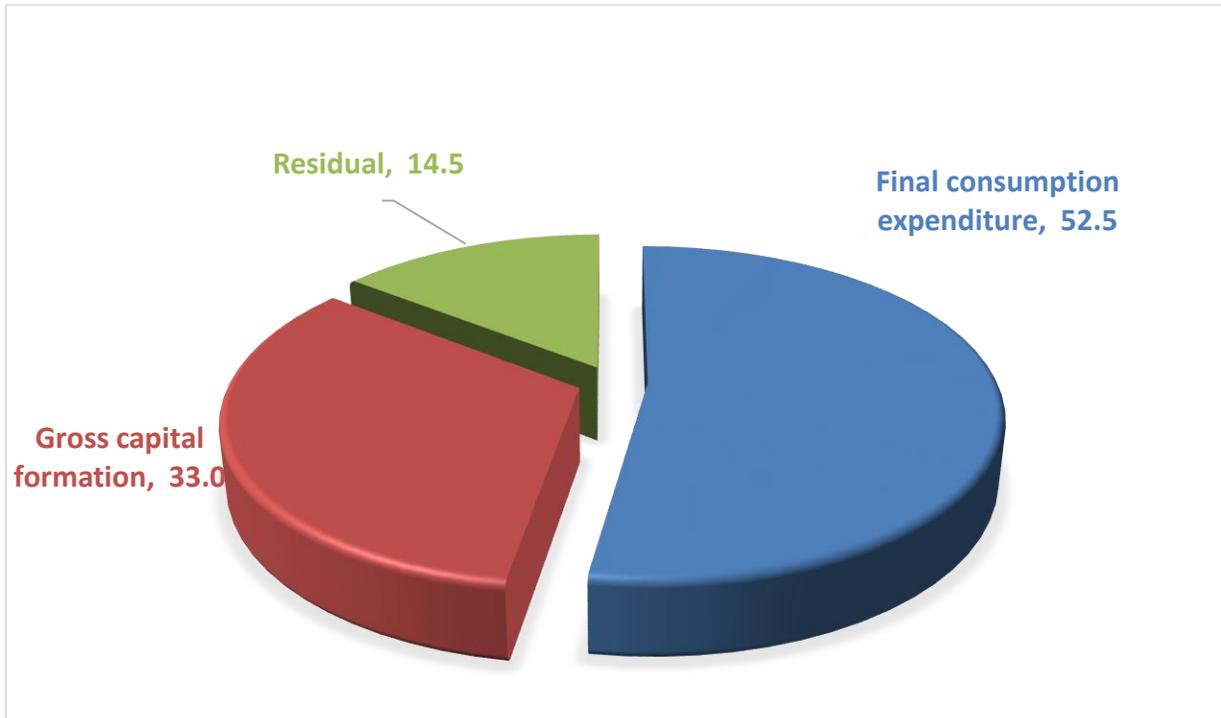


Table 18-Households Final Consumption Expenditure at CURRENT Market Price (2008 EFY =100% Series) (By COICOP; in Billion Birr)

Expenditure Category	2008	2009	2010	2011	2012	2013	2014	2015
Food and Non-Alcoholic Beverages	71.6	75.3	91.2	98.6	137.8	199.2	269.0	343.6
Alcoholic Beverages, Tobacco and Narcotics	0.8	0.7	0.7	1.0	1.3	2.0	2.6	3.3
Clothing and Footwear	17.0	24.1	39.4	32.0	49.2	64.8	95.6	127.7
Housing, Water, Electricity, Gas and Other Fuels	32.6	42.2	62.2	55.2	82.4	111.6	159.0	207.9
Furnishing, Household Equip.Maintenance	49.9	43.5	53.2	61.3	82.0	123.9	164.6	212.9
Health	2.2	2.6	3.4	3.3	4.8	6.7	9.3	12.0
Transport	6.8	5.5	6.4	7.9	10.3	16.0	21.1	27.3
Communication	5.0	5.0	8.9	7.6	11.0	15.4	21.9	29.8
Recreation and Culture	0.7	0.7	0.8	0.9	1.3	1.9	2.5	3.2
Education	3.1	3.5	5.7	5.0	7.3	10.1	14.3	19.0
Restaurants and Hotels	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5
Miscellaneous Goods and Services	6.8	11.5	19.2	14.8	23.3	29.8	45.9	61.8
Total	196.7	214.8	291.3	287.8	410.8	581.5	806.1	1,049.1

Table 19-Growth rate of Households Final Consumption Expenditure at CURRENT Market Price (2008 EFY =100% Series) (By COICOP; %)

Expenditure Category	2008	2009	2010	2011	2012	2013	2014	2015	Average
Food and Non-Alcoholic Beverages		5.1	21.1	8.1	39.8	44.6	35.0	27.8	25.93
Alcoholic Beverages, Tobacco and Narcotics		-12.6	0.7	32.7	30.7	54.6	32.0	28.3	23.78
Clothing and Footwear		41.8	63.4	-18.7	53.4	31.7	47.6	33.6	36.13
Housing, Water, Electricity, Gas and Other Fuels		29.2	47.5	-11.2	49.2	35.4	42.5	30.7	31.92
Furnishing, Household Equip. Maintenance		-12.7	22.2	15.2	33.7	51.2	32.9	29.3	24.53
Health		15.0	32.5	-1.3	44.0	40.3	37.8	28.7	28.14
Transport		-18.9	16.7	22.7	30.4	55.0	32.0	29.7	23.94
Communication		0.7	76.3	-14.3	44.6	39.7	41.8	36.3	32.17
Recreation and Culture		4.7	17.3	10.7	39.1	45.2	34.7	27.4	25.60
Education		14.4	61.4	-13.0	47.0	37.4	41.8	33.3	31.78
Restaurants and Hotels		35.9	90.3	-24.7	54.6	30.7	51.2	39.0	39.57
Miscellaneous Goods and Services		68.0	66.9	-22.9	58.1	27.8	53.8	34.8	40.93
Total		9.2	35.6	(1.2)	42.7	41.5	38.6	30.2	28.1

Table 20- Distribution of Households Final Consumption Expenditure at CURRENT Market Price (2008 EFY =100% Series) (By COICOP; %)

Expenditure Category	2008	2009	2010	2011	2012	2013	2014	2015	Average
Food and Non-Alcoholic Beverages	36.4	35.1	31.3	34.3	33.5	34.3	33.4	32.8	33.86
Alcoholic Beverages, Tobacco and Narcotics	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.33
Clothing and Footwear	8.6	11.2	13.5	11.1	12.0	11.1	11.9	12.2	11.46
Housing, Water, Electricity, Gas and Other Fuels	16.6	19.6	21.3	19.2	20.1	19.2	19.7	19.8	19.44
Furnishing, Household Equip. Maintenance	25.4	20.3	18.3	21.3	20.0	21.3	20.4	20.3	20.90
Health	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.16
Transport	3.5	2.6	2.2	2.7	2.5	2.7	2.6	2.6	2.68
Communication	2.5	2.4	3.1	2.7	2.7	2.7	2.7	2.8	2.69
Recreation and Culture	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.32
Education	1.6	1.7	2.0	1.7	1.8	1.7	1.8	1.8	1.75
Restaurants and Hotels	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.04
Miscellaneous Goods and Services	3.5	5.3	6.6	5.1	5.7	5.1	5.7	5.9	5.36
Total	100.0	100.00							

Figure 2-Average Percent Distribution of Household Final Consumption Expenditure in Addis Ababa City (by COICOP) (At Current Market Price) (2008-2015 EFY)

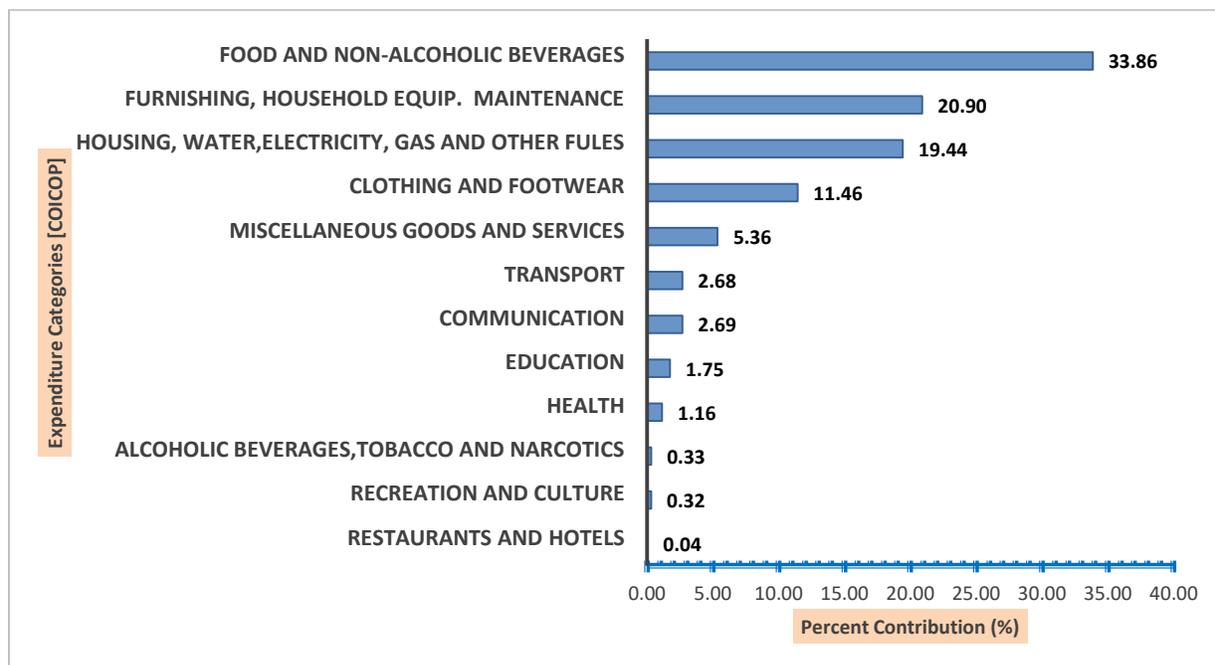


Table 21- Gross Capital Formation by Type of Asset at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)

GCF by Type of Asset	2008	2009	2010	2011	2012	2013	2014	2015
Gross Fixed Assets	134.5	148.7	182.2	207.4	256.4	398.1	426.6	503.4
Construction	95.3	95.9	92.1	97.5	99.8	171.4	189.8	245.8
Transport Equipment	20.3	36.8	55.4	56.2	51.9	52.4	65.7	85.6
Machinery and Equipment	16.3	11.4	13.3	18.0	24.4	104.9	111.2	120.3
Other Fixed Assets	2.6	4.6	21.4	35.7	80.3	69.4	59.9	51.7
Changes in Stocks	10.9	13.8	12.3	13.1	12.7	12.9	13.4	14.0
Net Valuables	0.3	0.3	0.6	0.4	0.7	0.6	1.4	1.8
Total	145.7	162.8	195.1	220.9	269.8	411.6	441.4	519.2

Table 22-Percentage Change (Growth) in Gross Capital Formation by Type of Asset at Current MARKET PRICE for Addis Ababa City; (2008 EFY =100% Series) (%)

GCF by Type of Asset	2008	2009	2010	2011	2012	2013	2014	2015	Average
Gross Fixed Assets		10.6	22.5	13.9	23.6	55.3	7.1	18.0	21.6
Construction		0.7	-4.0	5.9	2.3	71.9	10.7	29.5	16.7
Transport Equipment		81.2	50.7	1.4	-7.7	1.0	25.2	30.3	26.0
Machinery and Equipment		-30.1	16.8	35.3	36.0	329.0	6.0	8.2	57.3
Other Fixed Assets		74.3	365.4	67.1	124.9	-13.6	-13.7	-13.6	84.4
Changes in Stocks		26.3	-10.5	5.8	-2.8	1.4	4.1	4.1	4.1
Net Valuables		7.2	114.3	-31.4	67.9	-18.5	137.7	33.8	44.4
Total		11.7	19.9	13.2	22.1	52.6	7.2	17.6	20.62676

Table 23-Percentage Distribution of Gross Capital Formation by Type of Asset at Current MARKET PRICE for Addis Ababa City; (2008 EFY =100% Series) (%)

GCF by Type of Asset	2008	2009	2010	2011	2012	2013	2014	2015	Average
Gross Fixed Assets	92.3	91.4	93.4	93.9	95.0	96.7	96.7	97.0	94.5
Construction	65.4	58.9	47.2	44.1	37.0	41.7	43.0	47.3	48.1
Transport Equipment	13.9	22.6	28.4	25.5	19.2	12.7	14.9	16.5	19.2
Machinery and Equipment	11.2	7.0	6.8	8.1	9.1	25.5	25.2	23.2	14.5
Other Fixed Assets	1.8	2.8	10.9	16.2	29.8	16.9	13.6	10.0	12.7
Changes in Stocks	7.5	8.5	6.3	5.9	4.7	3.1	3.0	2.7	5.2
Net Valuables	0.18	0.18	0.31	0.19	0.26	0.14	0.31	0.35	0.24
Total	100.0								

Table 24- Gross Capital Formation by Ownership at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)

GCF by Type of Ownership	2008	2009	2010	2011	2012	2013	2014	2015
Public Sector	39.7	22.8	33.2	29.9	25.6	26.8	47.5	62.9
General Government	19.8	17.1	15.8	17.6	17.1	12.6	18.8	19.5
Public Enterprises	19.9	5.6	17.9	12.0	7.7	6.8	12.6	21.3
Private Sector	105.9	139.2	164.6	189.1	240.4	315.9	315.2	327.8
NPISHs	0.14	0.21	0.05	0.05	0.05	0.53	0.61	1.38
Total	145.7	162.2	197.8	219.0	266.0	343.2	363.3	392.1

Table 25- Percentage Change (Growth) in Gross Capital Formation by Ownership at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)

GCF by Type of Ownership	2008	2009	2010	2011	2012	2013	2014	2015	Average
Public Sector		(42.5)	45.6	(10.1)	(14.4)	4.7	77.3	32.5	13.31
General Government		(13.6)	(7.7)	11.3	(2.3)	(26.3)	48.7	3.5	1.93
Public Enterprises		(71.8)	219.2	(33.1)	(35.5)	(12.4)	86.3	68.5	31.63
Private Sector		31.5	18.2	14.9	27.1	31.4	(0.2)	4.0	18.13
NPISHs		52.4	(77.5)	7.5	1.6	939.0	13.7	126.5	151.90
Total		11.4	21.9	10.7	21.5	29.0	5.9	7.9	15.47

Table 26-Percentage Distribution of Gross Capital Formation by Ownership at Current MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)

GCF by Type of Ownership	2008	2009	2010	2011	2012	2013	2014	2015	Average
Public Sector	27.2	14.1	16.8	13.6	9.6	7.8	13.1	16.0	14.78
General Government	13.6	10.5	8.0	8.0	6.4	3.7	5.2	5.0	7.55
Public Enterprises	13.6	3.5	9.0	5.5	2.9	2.0	3.5	5.4	5.68
Private Sector	72.7	85.8	83.2	86.3	90.4	92.0	86.8	83.6	85.10
NPISHs	0.09	0.13	0.02	0.02	0.02	0.16	0.17	0.35	0.12
Total	100.0	100.00							

Figure 3-Percentage Distribution of GCF at Current Market Price in Addis Ababa City (by Broad Asset Category) (2008-2015 EFY Average)

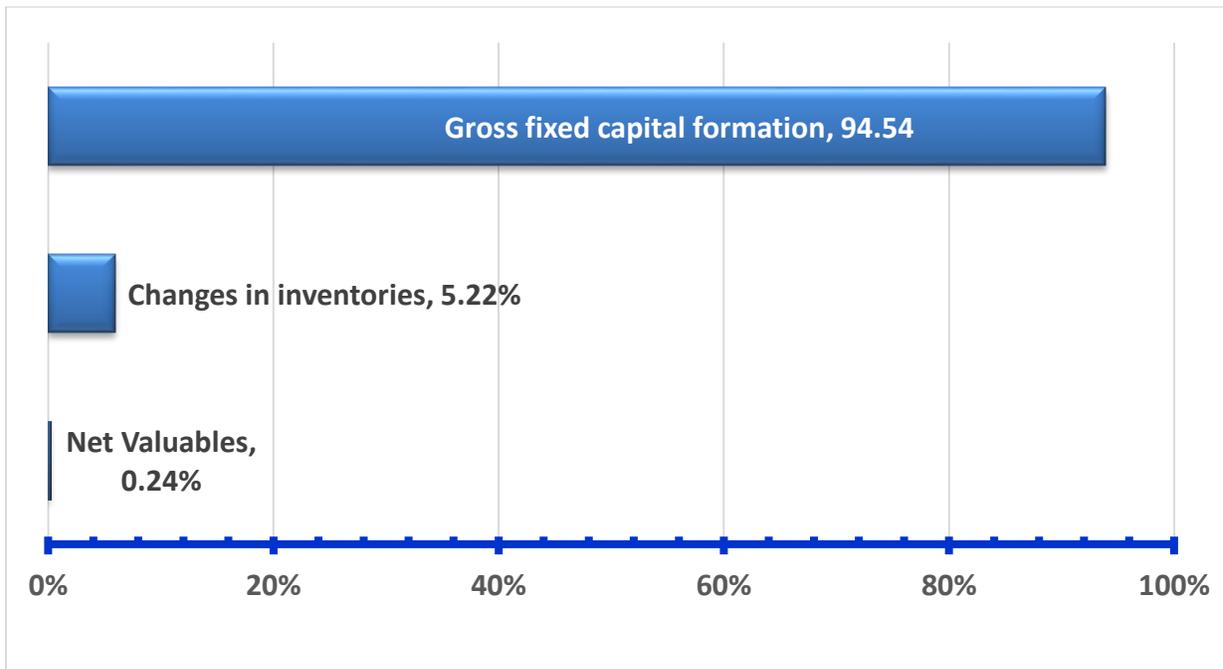


Figure 4-Percentage Distribution of GCF at Current Market Price in Addis Ababa City (by Detailed Asset Category) (2008-2015 EFY Average)

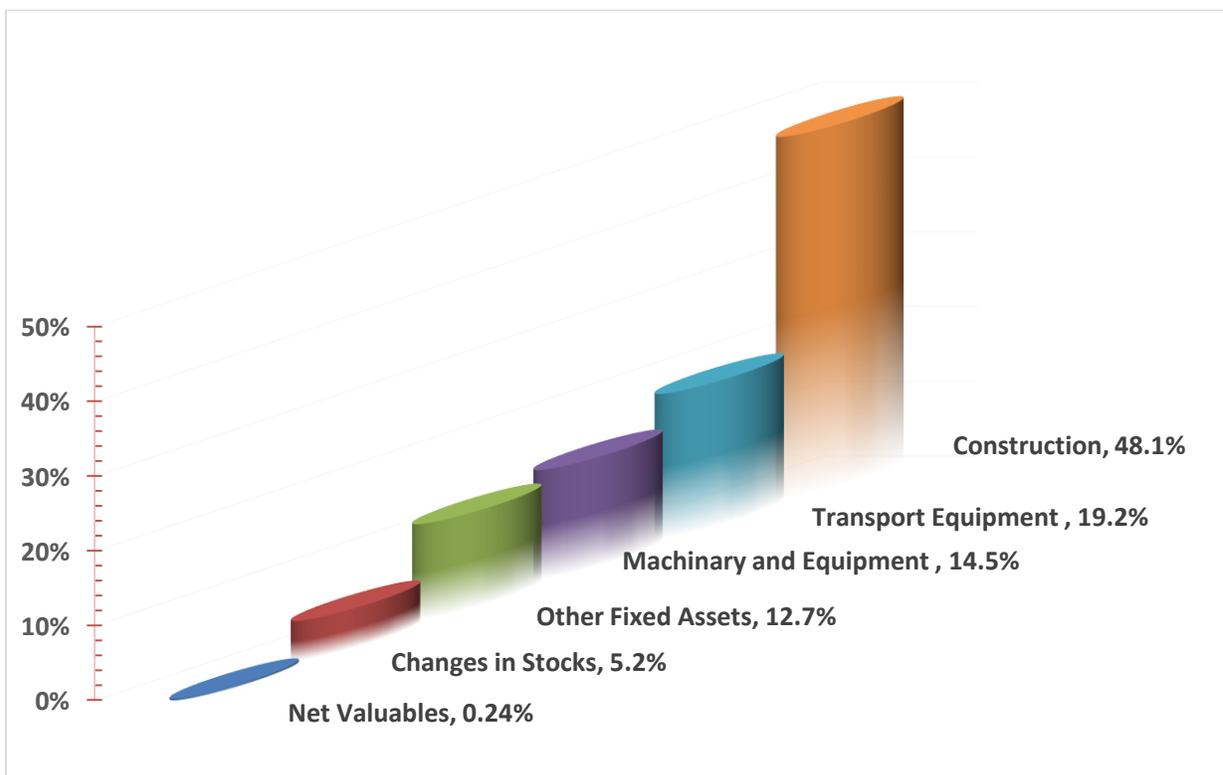


Figure 5-Distribution of GCF at Current Market Price in Addis Ababa City (by Type of Ownership) (2008-2015 EFY Average)

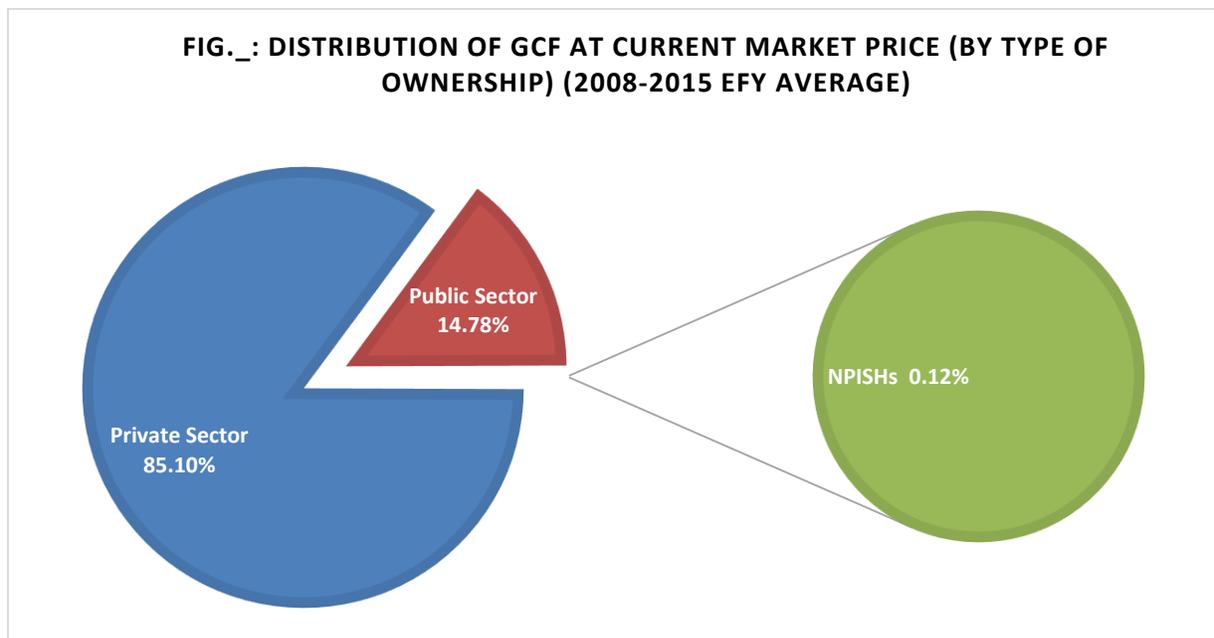


Table 27-Gross City Product by Expenditure Approach at CONSTANT MARKET PRICE (2008 EFY =100% Series) (in Billion Birr)

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015
Final consumption expenditure	205.1	241.6	261.4	228.3	276.0	333.3	348.8	327.1
Final Consumption Expenditure by Households	196.7	230.3	248.9	214.6	261.7	312.1	333.0	311.3
Final consumption expenditure of NPISHs	0.3	0.5	0.7	1.0	0.7	0.5	0.9	1.4
Final Consumption Expenditure by Government	8.1	10.8	11.8	12.8	13.5	20.7	14.9	14.5
Gross capital formation	145.7	178.7	170.3	171.6	195.2	261.7	219.2	180.7
Gross fixed capital formation	134.5	164.9	159.3	161.6	186.7	254.6	213.2	176.1
Changes in inventories	10.9	13.5	10.4	9.6	7.9	6.7	5.4	4.0
Net Valuables	0.3	0.3	0.6	0.3	0.5	0.4	0.6	0.6
Residual	41.8	9.3	26.3	95.7	83.1	-3.4	67.6	183.2
Gross Saving	187.5	188.0	196.6	267.3	278.3	258.3	286.8	363.9
Gross City Expenditure	392.5	429.6	458.0	495.6	554.3	591.6	635.6	691.0
Gross City Product @Market Price	392.5	429.6	458.0	495.6	554.3	591.6	635.6	691.0

**Table 28- Growth rate in Gross City Product by Expenditure Approach at CONSTANT MARKET PRICE
(2008 EFY =100% Series) (%)**

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015	Average
Final consumption expenditure		17.8	8.2	-12.6	20.9	20.8	4.6	-6.2	7.6
Final Consumption Expenditure by Households		17.1	8.1	-13.8	22.0	19.2	6.7	-6.5	7.5
Final consumption expenditure of NPISHs		45.8	41.5	43.7	-27.6	-30.1	74.5	51.2	28.4
Final Consumption Expenditure by Government		34.3	9.3	8.0	6.0	52.9	-27.9	-3.0	11.4
Gross capital formation		22.7	-4.7	0.7	13.7	34.1	-16.2	-17.5	4.7
Gross fixed capital formation		22.6	-3.4	1.4	15.6	36.3	-16.3	-17.4	5.6
Changes in inventories		23.9	-22.8	-7.6	-18.1	-15.2	-19.8	-24.9	-12.1
Net Valuables		27.3	68.5	-40.3	49.7	-30.4	81.7	-13.8	20.4
Residual		-77.8	184.2	263.6	-13.2	-104.1	-2088.5	171.0	-237.8
Gross Saving		0.3	4.6	35.9	4.1	-7.2	11.0	26.9	10.8
Gross City Expenditure		9.4	6.6	8.2	11.8	6.7	7.4	8.7	8.4
Gross City Product @Market Price		9.4	6.6	8.2	11.8	6.7	7.4	8.7	8.4

**Table 29-Composition of Gross City Product by Expenditure Approach at CONSTANT MARKET PRICE
(2008 EFY =100% Series) (%)**

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015	Average
Final Consumption Expenditure	52.2	56.2	57.1	46.1	49.8	56.3	54.9	47.3	52.5
Final Consumption Expenditure by Households	50.1	53.6	54.3	43.3	47.2	52.8	52.4	45.0	49.8
Final consumption expenditure of NPISHs	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1
Final Consumption Expenditure by Government	2.1	2.5	2.6	2.6	2.4	3.5	2.3	2.1	2.5
Gross Capital Formation	37.1	41.6	37.2	34.6	35.2	44.2	34.5	26.2	36.3

Expenditure Component	2008	2009	2010	2011	2012	2013	2014	2015	Average
Gross fixed capital formation	34.3	38.4	34.8	32.6	33.7	43.0	33.5	25.5	34.5
Changes in inventories	2.8	3.1	2.3	1.9	1.4	1.1	0.8	0.6	1.8
Net Valuables	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Residual	10.6	2.2	5.7	19.3	15.0	-0.6	10.6	26.5	11.2
Gross Saving	47.8	43.8	42.9	53.9	50.2	43.7	45.1	52.7	47.5
Gross City Expenditure	100.0								
Gross City Product @Market Price	100.0								

Figure 6-Structural Decomposition of GCP by Expenditure Approach for Addis Ababa City (At Constant Market Price) (2008- 2013 EFY Average) (%)

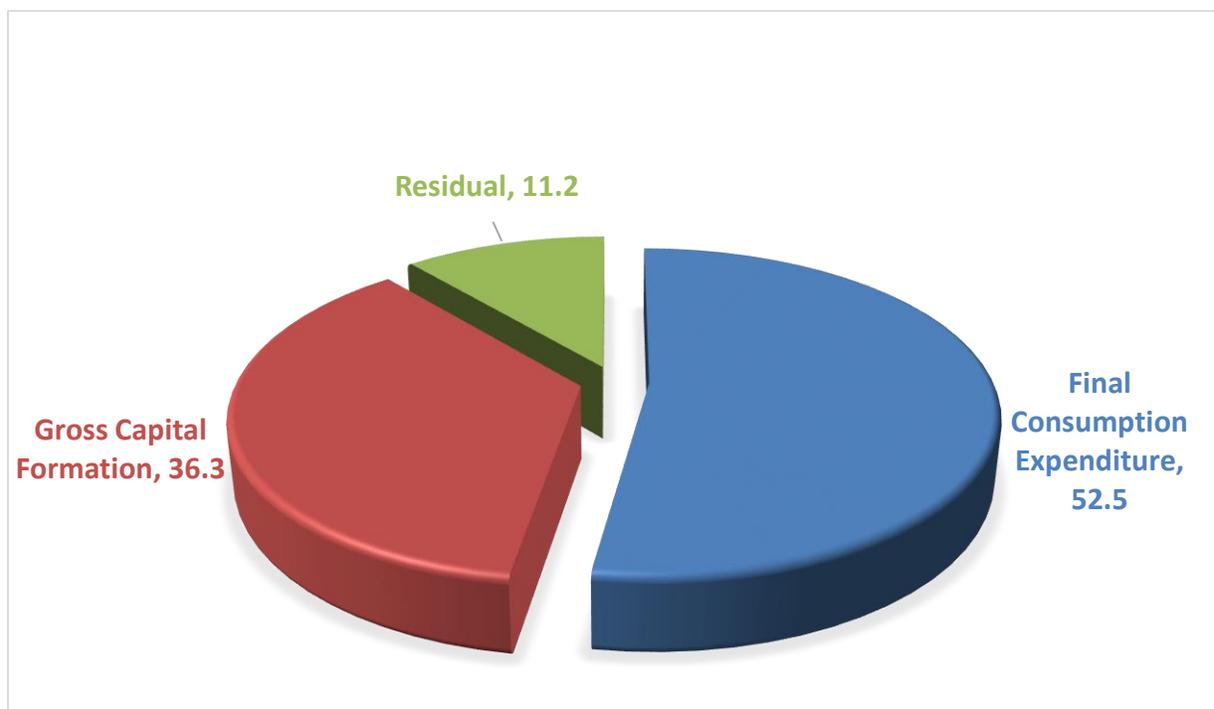


Table 30-Households Final Consumption Expenditure at CONSTANT Market Price (2008 EFY =100% Series) (By COICOP; in Billion Birr)

Expenditure Category	2008	2009	2010	2011	2012	2013	2014	2015
Food and Non-Alcoholic Beverages	71.6	73.9	82.7	77.8	86.7	98.8	97.7	91.0
Alcoholic Beverages, Tobacco and Narcotics	0.8	0.7	0.7	0.8	0.9	1.1	1.2	1.1
Clothing and Footwear	17.0	24.0	39.4	28.6	39.7	41.6	47.6	40.0
Housing, Water, Electricity, Gas and Other Fuels	32.6	48.7	39.3	29.8	36.7	43.2	52.5	52.4
Furnishing, Household Equip. Maintenance	49.9	50.9	45.8	44.9	53.8	73.1	69.3	61.5
Health	2.2	3.1	2.9	2.5	3.3	3.9	4.0	3.8
Transport	6.8	5.2	5.8	6.6	7.2	9.6	11.7	9.8
Communication	5.0	4.9	7.6	6.4	9.5	13.3	18.3	22.9
Recreation and Culture	0.7	0.8	0.8	0.8	1.1	1.5	1.4	1.2
Education	3.1	4.3	5.7	4.2	5.7	7.2	7.5	8.7
Restaurants and Hotels	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Miscellaneous Goods and Services	6.8	13.6	17.9	12.0	16.9	18.5	21.7	18.9
Total	196.7	230.3	248.9	214.6	261.7	312.1	333.0	311.3

Table 31-Distribution of Households Final Consumption Expenditure at CONSTANT Market Price (2008 EFY =100% Series) (By COICOP; %)

Expenditure Category	2008	2009	2010	2011	2012	2013	2014	2015	Average
Food and Non-Alcoholic Beverages	36.4	32.1	33.2	36.2	33.1	31.7	29.3	29.2	32.13
Alcoholic Beverages, Tobacco and Narcotics	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.34
Clothing and Footwear	8.6	10.4	15.8	13.3	15.2	13.3	14.3	12.8	13.60
Housing, Water, Electricity, Gas and Other Fuels	16.6	21.1	15.8	13.9	14.0	13.8	15.8	16.8	15.90
Furnishing, Household Equip. Maintenance	25.4	22.1	18.4	20.9	20.6	23.4	20.8	19.8	20.86
Health	1.1	1.3	1.2	1.2	1.3	1.3	1.2	1.2	1.24
Transport	3.5	2.3	2.4	3.1	2.7	3.1	3.5	3.1	2.88
Communication	2.5	2.1	3.1	3.0	3.6	4.3	5.5	7.3	4.13
Recreation and Culture	0.3	0.4	0.3	0.4	0.4	0.5	0.4	0.4	0.39
Education	1.6	1.9	2.3	1.9	2.2	2.3	2.3	2.8	2.24
Restaurants and Hotels	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.04
Miscellaneous Goods and Services	3.5	5.9	7.2	5.6	6.5	5.9	6.5	6.1	6.24

Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Table 32-Growth rate of Households Final Consumption Expenditure at CONSTANT Market Price (2008

EFY =100% Series) (By COICOP; %)

Expenditure Category	2008	2009	2010	2011	2012	2013	2014	2015	Average
Food and Non-Alcoholic Beverages		3.3	11.8	-6.0	11.5	14.0	-1.2	-6.8	3.81
Alcoholic Beverages, Tobacco and Narcotics		-15.3	-0.6	18.6	10.5	17.8	6.6	-6.1	4.51
Clothing and Footwear		41.4	63.9	-27.5	39.1	4.8	14.2	-15.9	17.13
Housing, Water, Electricity, Gas and Other Fuels		49.1	-19.1	-24.3	23.3	17.6	21.5	-0.3	9.70
Furnishing, Household Equip. Maintenance		2.0	-10.1	-1.8	19.8	35.8	-5.3	-11.2	4.18
Health		37.6	-4.5	-12.7	31.1	17.7	2.4	-6.2	9.36
Transport		-23.0	11.6	12.6	8.5	34.8	21.0	-16.1	7.07
Communication		-2.8	56.9	-15.9	47.8	40.2	37.5	24.8	26.94
Recreation and Culture		19.1	-1.5	6.6	29.4	36.1	-9.2	-13.3	9.58
Education		38.6	33.3	-27.2	36.8	26.0	5.0	15.5	18.29
Restaurants and Hotels		70.2	31.8	-36.2	42.7	18.2	9.2	-5.5	18.64
Miscellaneous Goods and Services		99.5	31.3	-32.9	41.0	9.2	17.5	-13.2	21.77
Total		17.1	8.1	(13.8)	22.0	19.2	6.7	(6.5)	7.5

Table 33-Level of GCF by Asset type at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)

GCF by Type of Asset	2008	2009	2010	2011	2012	2013	2014	2015
Gross Fixed Assets	134.5	164.9	159.3	161.6	186.7	254.6	213.2	176.1
Construction	95.3	112.2	79.2	71.5	65.5	101.2	79.9	71.0
Transport Equipment	20.3	34.9	50.3	46.9	36.0	31.6	36.3	30.6
Machinery and Equipment	16.3	13.3	11.4	13.2	16.1	61.9	46.8	34.8
Other Fixed Assets	2.6	4.4	18.4	30.1	69.1	59.9	50.2	39.7
Changes in Stocks	10.9	13.5	10.4	9.6	7.9	6.7	5.4	4.0
Net Valuables	0.3	0.3	0.6	0.3	0.5	0.4	0.6	0.6
Gross Capital Formation by Asset Type	145.7	178.7	170.3	171.6	195.2	261.7	219.2	180.7

Table 34- Percentage Change (Growth) in GCF by Asset type at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)

GCF by Type of Asset	2008	2009	2010	2011	2012	2013	2014	2015	Average
Gross Fixed Assets		22.6	-3.4	1.4	15.6	36.3	-16.3	-17.4	5.6
Construction		17.7	-29.4	-9.8	-8.3	54.4	-21.1	-11.0	-1.1
Transport Equipment		72.1	44.0	-6.9	-23.2	-12.1	14.8	-15.7	10.4
Machinery and Equipment		-18.3	-14.1	15.3	21.9	285.3	-24.4	-25.7	34.3
Other Fixed Assets		68.2	314.4	63.9	129.8	-13.3	-16.3	-20.9	75.1
Changes in Stocks		23.9	-22.8	-7.6	-18.1	-15.2	-19.8	-24.9	-12.1
Net Valuables		27.3	68.5	-40.3	49.7	-30.4	81.7	-13.8	20.4
Gross Capital Formation by Asset Type		22.7	(4.7)	0.7	13.7	34.1	(16.2)	(17.5)	4.7

Table 35-Percentage Distribution of GCF by Asset type at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)

GCF by Type of Asset	2008	2009	2010	2011	2012	2013	2014	2015	Average
Gross Fixed Assets	92.3	92.2	93.5	94.2	95.7	97.3	97.3	97.5	95.0
Construction	65.4	62.8	46.5	41.7	33.6	38.7	36.4	39.3	45.5
Transport Equipment	13.9	19.6	29.6	27.3	18.5	12.1	16.6	16.9	19.3
Machinery and Equipment	11.2	7.4	6.7	7.7	8.2	23.6	21.3	19.2	13.2
Other Fixed Assets	1.8	2.5	10.8	17.5	35.4	22.9	22.9	22.0	17.0
Changes in Stocks	7.5	7.6	6.1	5.6	4.0	2.6	2.5	2.2	4.8
Net Valuables	0.2	0.2	0.3	0.2	0.3	0.1	0.3	0.3	0.2
Gross Capital Formation by Asset Type	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 36-Level of GCF by Ownership at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (in Billion Birr)

GCF by Type of Ownership	2008	2009	2010	2011	2012	2013	2014	2015
Public Sector	39.7	26.0	29.3	23.1	17.0	15.7	20.4	18.8
General Government	19.8	19.7	13.6	13.1	11.3	7.5	8.2	5.8
Public Enterprises	19.9	6.1	16.1	9.7	5.2	3.9	5.4	6.5
Private Sector	105.9	151.8	143.3	147.1	175.6	205.2	165.7	124.8
NPISHs	0.1	0.2	0.0	0.0	0.0	0.3	0.2	0.4
Total GCF	145.7	178.1	172.7	170.2	192.7	221.3	186.3	144.0

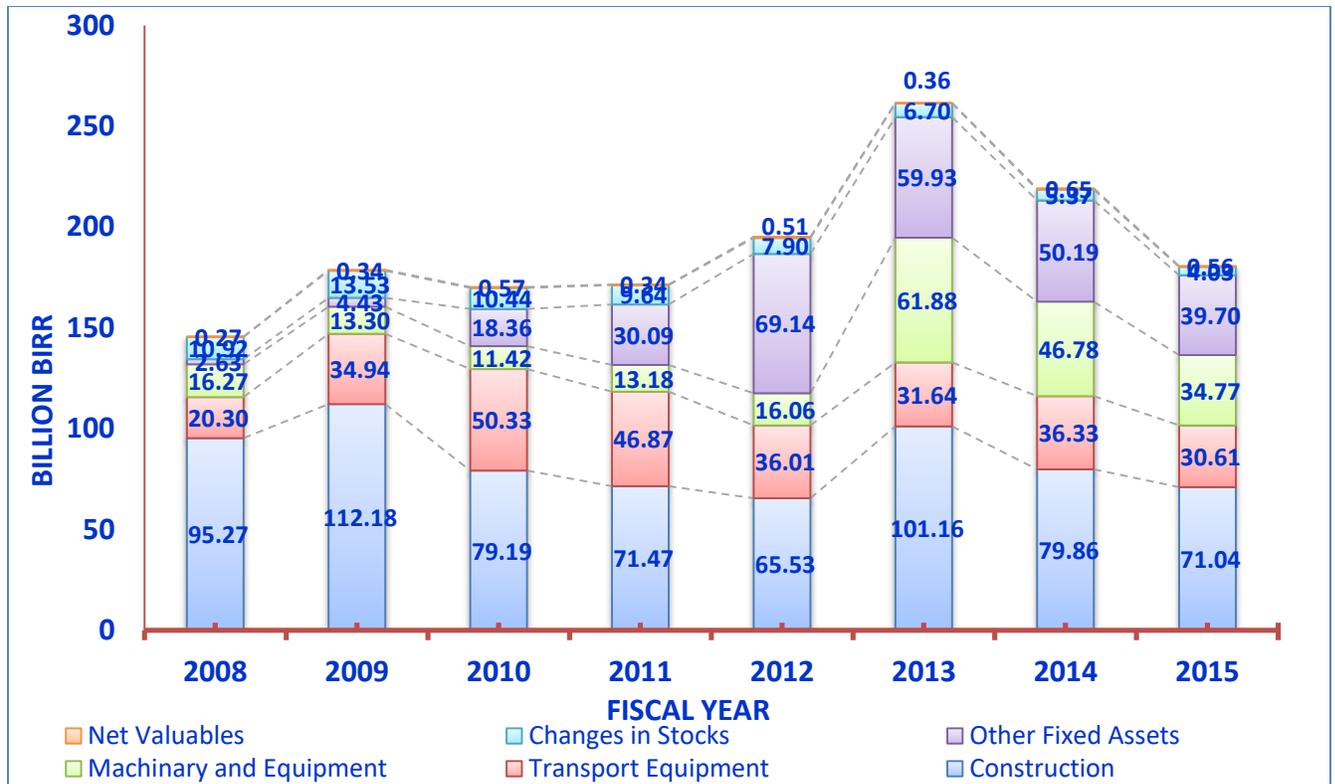
Table 37-Percentage Change/Growth in GCF by Ownership at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)

GCF by Type of Ownership	2008	2009	2010	2011	2012	2013	2014	2015	Average
Public Sector		-34.4	12.7	-21.3	-26.3	-7.4	29.4	-7.9	-7.89
General Government		-0.2	-30.9	-3.7	-13.6	-33.9	10.0	-29.1	-14.52
Public Enterprises		-69.1	161.9	-39.7	-46.2	-24.9	37.7	20.9	5.80
Private Sector		43.4	-5.6	2.6	19.4	16.9	-19.3	-24.7	4.68
NPISHs		75.1	-83.1	-7.6	-10.5	782.1	-15.9	60.5	114.37
Total GCF		22.3	(3.0)	(1.4)	13.2	14.8	(15.8)	(22.7)	1.04

Table 38-Percentage Distribution of GCF by Ownership at Constant MARKET PRICE for Addis Ababa City (2008 EFY =100% Series) (%)

GCF by Type of Ownership	2008	2009	2010	2011	2012	2013	2014	2015	Average
Public Sector	27.2	14.6	17.0	13.6	8.8	7.1	10.9	13.0	14.03
General Government	13.6	11.1	7.9	7.7	5.9	3.4	4.4	4.1	7.25
Public Enterprises	13.6	3.4	9.3	5.7	2.7	1.8	2.9	4.5	5.50
Private Sector	72.7	85.3	83.0	86.4	91.2	92.8	88.9	86.7	85.86
NPISHs	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.3	0.10
Total GCF	100.0	100.00							

Figure 7-Level (Bill. Birr) and Trend of GCF at Constant Market Price in Addis Ababa City (Detailed Asset Category) (2008-2015 EFY)



VI. Glossary

ITEM ⁷	DESCRIPTION
Accounting year	Budgetary/Fiscal year from July 8 th (<i>Hamle-1</i>) to July 7 th (<i>Sene-30</i>)
Accumulation	Acquisition of fixed assets, stocks of non-durable goods, land, financial assets, patents, copy-rights and other intangible assets during a period of account less the incurrence of liabilities. This is gross accumulation. Net accumulation is gross accumulation during a period of account reduced by the consumption of fixed capital during the period.

⁷ Concepts/terminologies included under this glossary are selected as deemed relevant to the scope of GDP-E estimation in this document!

Assets	An asset is a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another. It includes Machinery, equipment, furniture, buildings and other durable reproducible goods, stocks of non-durable goods, land, monuments and other non-reproducible tangible assets, copy-rights, leases, financial claims on other parties and other intangible assets.
Economic flows and Stocks	<p>Economic flows: Reflect the creation, transformation, exchange, transfer or extinction of economic value; they involve changes in the volume, composition, or value of an institutional unit's assets and liabilities. Flows measure changes in economic value over a period of time.</p> <p>Stocks: Relate to the total level of assets or liabilities in an economy at a point of time. (In balance of payments methodology, the levels of stocks are referred to as positions.)</p>
Economic Transactions	An economic flow that is an interaction between institutional units by mutual agreement or an action within an institutional unit that it is analytically useful to treat like a transaction, often because the unit is operating in two different capacities.
Fixed Assets; Dwellings	Buildings that are used entirely or primarily as residences, including any associated structures, such as garages, and all permanent fixtures customarily installed in residences. Houseboats, barges, mobile homes and caravans used as principal residences of households are also included, as are historic monuments identified primarily as dwellings. Costs of site clearance and preparation are also included. Examples include products included in Central Product Classification (CPC) a class 5211, residential buildings and CPC group 387, prefabricated buildings, such as one- and two-dwelling buildings and other residential buildings intended for non-transient occupancy. Uncompleted dwellings are included to the extent that the ultimate user is deemed to have taken ownership, either because the construction is on own-account or as evidenced by the existence of a

	<p>contract of sale/purchase. Dwellings acquired for military personnel are included because they are used, as are dwellings acquired by civilian units, for the production of housing services.</p>
<p>Fixed Assets; Other buildings and structures</p>	<p>Non-residential buildings and other structures, as defined below. Uncompleted buildings and structures are included to the extent that the ultimate user is deemed to have taken ownership, either because the construction is for own use or as evidenced by the existence a contract of sale/purchase. Buildings and structures acquired for military purposes are included to the extent that they resemble civilian buildings acquired for purposes of production and are used in the same way.</p>
<p>Fixed Assets; Non-residential buildings:</p>	<p>Buildings other than dwellings, including fixtures, facilities and equipment that are integral parts of the structures and costs of site clearance and preparation. Historic monuments identified primarily as nonresidential buildings are also included. Examples include products included in CPC class 5212, non-residential buildings, such as warehouse and industrial buildings, commercial buildings, buildings for public entertainment, hotels, restaurants, educational buildings, health buildings, etc.</p>
<p>Fixed Assets; Other structures</p>	<p>Structures other than buildings, including the cost of the streets, sewers and site clearance and preparation other than for residential or non- residential buildings. Also included are historic monuments for which identification as dwellings or non-residential buildings is not possible and shafts, tunnels and other structures associated with mining subsoil assets. (Major improvements to land, such as dams and dykes for flood control, are included in the value of land.) Examples include products included in CPC group 522, civil engineering works, such as highways, streets, roads, railways and airfield runways; bridges, elevated highways, tunnels and subways; waterways, harbors, dams and other waterworks; long-distance pipelines, communication and power lines; local pipelines and cables, ancillary works; constructions for mining and manufacture; and constructions for sport and recreation.</p>

**Fixed Assets;
Machinery and
equipment:**

Transport equipment and other machinery and equipment, as defined below other than that acquired by households for final consumption. Tools that are relatively inexpensive and purchased at a relatively steady rate, such as hand tools, may be excluded. Also excluded are machinery and equipment integral to buildings that are included in dwellings and non-residential buildings.

Uncompleted machinery and equipment are excluded, unless produced for own use, because the ultimate user is deemed to take ownership only on delivery of the asset. Machinery and equipment acquired for military purposes are included to the extent that they resemble goods acquired by civilian units for purposes of production and that the military uses in the same way.

Machinery and equipment acquired by households for final consumption are not treated as an asset. They are instead included in the memorandum item "**consumer durables**" in the balance sheet for households. Houseboats, barges, mobile homes and caravans used by households as principal residences are included in dwellings.

Transport equipment: Equipment for moving people and objects. Examples include products other than parts included in CPC division 49, transport equipment, such as motor vehicles, trailers and semi-trailers; ships; railway and tramway locomotives and rolling stock; aircraft and spacecraft; and motorcycles, bicycles, etc.

Other machinery and equipment: Machinery and equipment not elsewhere classified. Examples include products other than parts included in CPC divisions 43, general purpose machinery; 44, special purpose machinery; 45, office, accounting and computing equipment, 46, electrical machinery and apparatus, 47, radio, television and communication equipment and apparatus; and 48, medical appliances, precision and optical instruments, watches and clocks. Other examples are products other than parts included in CPC groups 337, fuel elements (cartridges) for nuclear reactors; 381,

	furniture; 383, musical instruments; 384, sports goods; and 423, steam generators except central heating boilers.
Fixed Assets; Cultivated assets:	<p>Livestock for breeding, dairy, draught, etc. and vineyards, orchards and other plantations of trees yielding repeat products that are under the direct control, responsibility and management of institutional units, as defined below.</p> <p>Immature cultivated assets are excluded unless produced for own use.</p> <p>Livestock for breeding, dairy, draught, etc.: Livestock that are cultivated for the products they provide year after year. They include breeding stocks (including fish and poultry), dairy cattle, draft animals, sheep or other animals used for wool production and animals used for transportation, racing or entertainment.</p> <p>Vineyards, orchards and other plantations of trees yielding repeat products Trees (including vines and shrubs) cultivated for products they yield year after year, including those cultivated for fruits and nuts, for sap and resin and for bark and leaf products.</p>
Assets, fixed	Produced assets or durable goods except land, mineral deposits, timber tracts and similar, fisheries and the like, non-reproducible tangible assets, employed in production by resident industries, producers of government services for civilian purposes, and producers of private non-profit services to households including owner dwellings, permanent family dwellings for military personnel, breeding stock, draught animals and dairy cattle. They are assets that are used repeatedly or continuously in production processes for more than one year. Fixed assets consist of tangible and intangible fixed assets.
Assets, Produced	Non-financial assets that have come into existence as outputs from production processes. Produced assets consist of fixed assets, inventories and valuables)
Assets, Non-Produced	Non-financial assets that come into existence other than through processes of production. Non-produced assets consist of tangible assets and

	intangible assets, as defined below. Also included are costs of ownership transfer on and major improvements to these assets.
Assets, tangible	Fixed assets, stocks of non-durable goods, land, mineral deposits, timber tracts, fisheries and the like.
Assets; Tangible non- produced	Non-produced assets that occur in nature and over which ownership may be enforced and transferred. Environmental assets over which ownership rights have not, or cannot, be enforced, such as open seas or air, are excluded. Tangible non-produced assets consist of land, subsoil assets, non-cultivated biological resources and water resources.
Assets, intangibles.	<p>Fixed assets that consist of mineral exploration, computer software, entertainment, literary or artistic originals and other intangible fixed assets, as defined below, intended to be used for more than one year.</p> <p>Mineral explorations: The value of expenditures on exploration for petroleum and natural gas and for non-petroleum deposits. These expenditures include pre- license costs, license and acquisition costs, appraisal costs and the costs of actual test drilling and boring, as well as the costs of aerial and other surveys, transportation costs, etc., incurred to make it possible to carry out the tests.</p> <p>Computer software: Computer programs, program descriptions and supporting materials for both systems and applications software. Included are purchased software and software developed on own account, if the expenditure is large. Large expenditures on the purchase, development or extension of computer databases that are expected to be used for more than one year, whether marketed or not, are also included.</p> <p>Entertainment, literary or artistic originals: Original films, sound recordings, manuscripts, tapes, models, etc., on which drama performances, radio and television programming, musical performances, sporting events, literary and artistic output, etc., are recorded or embodied. Included are works produced on own account. In some cases, such as films, there may be multiple originals.</p>

	Other intangible fixed assets: New information, specialized knowledge, etc., not elsewhere classified, whose use in production is restricted to the units that have established ownership rights over them or to other units licensed by the latter.
Assets; Intangible non- produced	Non-produced assets that are constructs of society. They are evidenced by legal or accounting actions, such as the granting of a patent or the conveyance of some economic benefit to a third party. Some entitle their owners to engage in certain specific activities and to exclude other institutional units from doing so except with the permission of the owner. Intangible non-produced assets consist of patented entities, leases and other transferable contracts, purchased goodwill and other intangible non-produced assets.
Assets, financial	Gold, currency and other claims on (obligations of) other parties owned by an economic agent; or the claims on (obligations of) an economic agent owned by other parties.
Assets, Non-financial assets	Entities, over which ownership rights are enforced by institutional units, individually or collectively, and from which economic benefits may be derived by their owners by holding them, or using them over a period of time, that consist of tangible assets, both produced and non- produced, and most intangible assets for which no corresponding liabilities are recorded.)
Capital formation, gross and net	Gross capital formation includes gross fixed capital formation and change in stocks. Net capital formation is gross capital formation less consumption of fixed capital.
Capital formation Accounts	Accounts for accumulation are divided into two sets: those relating to capital formation and those relating to capital finance. The first set i.e. Capital formation accounts are further divided between stock-building (increase in stocks) and fixed capital formation. The capital formation accounts refer to expenditure on tangible assets other than land, mineral rights, and the like and in all cases, these are accounts for activities.

Capital formation, domestic	Domestic capital formation is with reference to the activities of all the producers (including households) in the domestic territory of the country/region.Fixed capital formation consists of the acquisition of fixed assets by resident industries and the producers of government services and of private non-profit services to households and occurs only on the domestic territory of the given country/region.Also includes acquisition of new residential buildings by households within domestic territory.
Capital formation, fixed	Gross fixed capital formation consists of the outlays (purchases and own account production) of industries, producers of government services and producers of private non-profit services to households, on addition of commodities to their stocks of fixed assets less their net sales (i.e. sales minus purchases) of similar second-hand and scrapped goods. Excluded are the outlays of government services on durable goods for military use. Included are acquisitions of reproducible and non-reproducible durable goods (except land, mineral deposits, timber tracts, fisheries and the like) for civilian use, work-in-progress on construction projects; capital repairs, outlays on the improvement of land and on the development and extension of timber tracts, plantations, vineyards, etc., which take considerably more than a year to become productive; the acquisition of breeding stock, draught animals dairy cattle and the like, and the transfer costs in connection with purchases and sales of land, mineral deposits, timber tracts etc. Similar outlays by households on residential construction are also included.Net fixed capital formation is Gross Fixed capital formation less consumption of fixed capital.
Capital formation, fixed, own account	Value (including imputed cost) of own account construction of structures, minor irrigation works, roads and similar works etc., and items of machinery and equipment which have an expected life time of use of one year or more produced for own use by enterprises, producers of government services and nonprofit institution survey households
Capital formation, household	Acquisition of new capital and household increase in stock of producer households and acquisition of new residential buildings by households

	(final consumers). Household sector is defined to comprise, apart from individuals, all non-government non-corporate enterprises like farm and non-farm business, unincorporated establishments like sole proprietorship and partnership and non-profit institutions like charitable trusts, religious endowments, educational institutions etc.
Capital expenditure	Expenditure for new capital equipment and structures including expenditure which extend the normal life of the asset or raise its productivity are included in capital expenditure. Thus, major alterations, renovations and rebuilding are capital expenditure. Routine care such as oiling, adjusting, and cleaning and the replacement of short-lived parts are current expenditure.
Capital goods	All goods produced for use in future productive processes i.e., machinery, equipment, plants, buildings, other construction and works, which have an expected life time of considerably more than a year, and producers' stocks of raw materials, semi-finished and finished goods.
Capital repairs	Major alterations in, or additions to, machinery, equipment, structures or other fixed assets which significantly extend their expected life-time of use, productivity, or the character or volume of the services they render.
Capital stocks	Stocks mainly of buildings, plant, machinery and vehicles and other reproducible tangible assets available in different activities. Excluded generally are stocks of goods, and capital invested in land, non-reproducible assets, financial assets and non-financial intangible assets.
Capital transfers	Unrequired transfers which are designed to finance the gross capital formation, other forms of accumulation, or long-term expenditure of the recipient, which are made out of the wealth or saving of the donor, or which are non-recurrent (quite irregular) for either party to the transaction.
Consumption of fixed Capital	Current replacement cost of the reproducible fixed assets of the producers of government administrative services used up during a period of account as a result of normal wear and tear, foreseen obsolescence and the normal rate of accidental damage. Unforeseen obsolescence catastrophes and the

	depletion of natural resources are not taken into account.Measurement is at current replacement cost basis.
Commodity-flow approach	Commodity-flow approach starts with estimates of the supply of commodities expressed in producers' values and proceeds to estimate dispositions expressed in purchasers' values by adding trade and transport margins and similar other expenditures.
Consumer durables	Goods acquired by households which have an expected life-time considerably more than one year and a relatively high value, such as motor cars, refrigerators and washing machines.Dwellings are excluded since they are classed as the fixed assets.
Current repairs and maintenance	Outlays which make good breakages in fixed assets and keep them in good working order. Includes outlays on new parts and attachments of fixed assets which have an expected life of use of one year or somewhat more but which are short-lived relative to the fixed asset itself, or of relatively small value.
Current transactions account	Standard account relating to the transactions of the nation/region with the rest of the world in respect of current receipts and disbursements.
Domestic production	If the production of all domestic producers is consolidated, the resulting total will measure the production taking place in what is called the domestic territory of the country/region and defined as domestic production.
Domestic product, net	Gross domestic product less consumption of fixed capital
Domestic product and expenditure account	Standard consolidated production, consumption, expenditure and capital formation account for the nation/region.
Economic territory	The economic territory of a country/region, although consisting essentially of the geographical territory, does not coincide exactly; some additions and subtractions are made.
Enterprise	Ultimate unit in institutional classification.

Enterprise of a country/region, resident	Units which are engaged in production and in transactions in land on the domestic territory of a given country/region.
Enterprises, corporate	Corporations, joint stock companies, cooperatives, limited liability partnerships and other financial and non-financial enterprises which by virtue of legislation, administrative regulations or registration, are recognized as business entities independent of their owners.
Enterprises, financial	Enterprises which are primarily engaged in financial transactions in the market, consisting of both incurring liabilities and acquiring financial assets.
Enterprises, non-financial	Organized and unorganized enterprises mainly engaged in activities other than providing financial and insurance services.
Enterprises organized	All enterprises which are either registered or come under the purview of any of the Acts and/or maintain annual accounts and balance-sheets.
Enterprises, unorganized	All unincorporated enterprises and households' industries other than the organized ones which are not regulated by any of the Acts and which do not maintain annual accounts and balance-sheets.
Enterprises, private	Enterprises in which private parties own all, or a majority of the shares, other capital participation or equity and which private parties' control
Enterprises, public	Consists of Departmental and non-departmental public sector enterprises.
Enterprises, public, departmental	Enterprises owned and controlled by the public authorities, which are mainly engaged in furnishing the kind of goods and services which are often produced by business establishments but do not hold or manage financial assets and liabilities apart from their working balances and business accounts, payable and receivable. Examples are activities relating to government. railways, posts and telegraphs, overseas communications service, minor irrigation, multipurpose river projects, irrigation, navigation and drainage projects, electricity schemes, forest, government distilleries and factories, ordnance factories, public works work-shops,

	government presses, road and water transport services, tourist transport services, tourist accommodation, commercial broadcasting services, milk supply schemes and port trust.
Establishment	Ultimate unit in industrial classification
Expenditures on goods and services	The values of the amounts that buyers pay, or agree to pay, to sellers in exchange for goods or services that sellers provide to them or to other institutional units designated by the buyers.
Exports of goods and services	All transfers of the ownership of goods from residents of a country/region to non-residents and services provided by resident producers of the country/region to non-residents are to be covered. In practice, the exports of goods may consist of the outward movement of merchandise across the customs frontier of a country/region and of other goods across the boundaries of her domestic territory, including the direct purchases in the country/region of extra-territorial organizations and non-resident persons. Since the imports of merchandise into a country/region are to be valued at c.i.f., the exports of services of the country/region should also include the charges in respect of the imports for the transport and insurance services provided by resident producers of the given country/region.
Final consumption expenditure accounts	<p>Accounts relating to the final consumption of goods and services by resident households, government services and private non-profit services to households.</p> <p>A consumption good or service is defined as a good or service that is used (without further transformation in production as defined in the SNA) by households, NPISHs or government units for the direct satisfaction of individual needs (or wants) or for the collective needs of members of the community.</p> <p>Individual consumption good or service is one that is acquired by a household and used to satisfy the needs or wants of members of that household. Individual goods and services can always be bought and sold on the market, although they may also be provided free, or at</p>

	<p>prices that are not economically significant, as social transfers in kind. In practice, all goods and most services are individual.</p> <p>Collective consumption service is a service provided simultaneously to all members of the community or to all members of a particular section of the community, such as all households living in a particular region.</p> <p>Actual final consumption measures the amount of consumption goods and services acquired.</p> <p>Actual final consumption of general government is measured by the value of the collective consumption services provided to the community, or large sections of the community, by general government.</p> <p>Actual final consumption of households is measured by the value of all the individual consumption goods and services acquired by resident households.</p> <p>Actual final consumption of NPISHs is measured by the value of the collective consumption services provided to the community, or large sections of the community, by NPISHs.</p>
<p>Final consumption expenditure of government services</p>	<p>The value of gross output is equal to the sum of the value of intermediate consumption of goods and services, compensation of employees, consumption of fixed capital less sales.</p>
<p>Final consumption expenditure of households in the domestic market</p>	<p>This is equal to final consumption expenditure of household plus direct purchases in the domestic market by non-resident households and extra-territorial bodies minus direct purchases abroad by resident households.</p> <p>A household is defined as a group of persons who share the same living accommodation, who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food.</p>
<p>Final consumption expenditure, private</p>	<p>Value of final expenditure of households and private non-profit institutions on current goods and services less sales of second hand and scrapped goods including imputed value of own account production and</p>

	expenditure on consumer durable. It includes final consumption expenditure of non-residents on goods including all costs in the domestic market but excludes final consumption expenditure of normal residents of the country/region abroad.
Final consumption expenditure of private non-profit house-holds	Value of goods and services produced for own use on current account that is the value of their gross output services to reduce by the sum of the value of their commodity and non-commodity sales. The value of their gross output is equal to the sum of the value of their intermediate consumption of goods and services, compensation of employees, consumption of fixed capital and indirect taxes.
Final use of goods and services	Disposition of goods and services to final consumption expenditure, gross fixed capital formation, increase in stocks and exports.
Government, administrative departments	All departments, offices, organizations and other bodies which are agencies or instruments of the central, State or local public authorities, whether accounted for, or financed in, ordinary or extra-ordinary budgets or extra budgetary funds. Included are all social security arrangements for large sections of the population imposed, controlled or financed by a government. Excluded are government departmental and non-departmental enterprises and public corporations.
Government enterprises	Same as public departmental enterprises
Government services producers	Producers of government services furnish but normally do not sell, to the community those common services which otherwise cannot be conveniently and economically provided, and administer the State and the economic and social policy of the community. Also included are defense and external affairs.
Gross Domestic Product (GDP) or Gross City Product (GCP)	Production measure of GDP- The production measure of gross domestic product (GDP) is derived as the value of output less intermediate consumption plus any taxes less subsidies on products not already included in the value of output

	<p>Expenditure measure of GDP- The expenditure measure of gross domestic product (GDP) is derived as the sum of expenditure on final consumption plus gross capital formation plus exports less imports.</p> <p>Income measure of GDP- The income measure of gross domestic product (GDP) is derived as compensation of employees plus gross operating surplus plus gross mixed incomes plus taxes less subsidies on both production and imports.</p>
<p>Gross output of industries</p>	<p>In general, the value of all the goods and services (commodities) produced during the period of account including net increase in work-in-progress and products for use on own account. Valuation is usually at producers' value that is the market value at the establishment of the producers or at approximate basic values, which is producers' values less the relevant commodity taxes, net. The gross output is equivalent to the gross margins, that is, the differences between sale and purchase values of the goods sold, in the case of the distributive trades, the insurance service charge in the case of casualty and life insurance; and the sum of the actual and imputed service charges in the case of banks and similar financial institutions.</p>
<p>Institutional sectors of the economy</p>	<p>Two main kinds of institutional units, or transactors, are distinguished in the SNA; households and legal entities.</p> <p>Legal entities are either entities created for purposes of production, mainly corporations and non-profit institutions (NPIs), or entities created by political processes, specifically government units. The defining characteristic of an institutional unit is that it is capable of owning goods and assets, incurring liabilities and engaging in economic activities and transactions with other units in its own right.</p> <p>For the purposes of the SNA, institutional units that are resident in the economy are grouped together into five mutually exclusive sectors composed of the following types of units:</p> <ul style="list-style-type: none"> a. non-financial corporations; b. financial corporations; c. Government units, including social security funds;

	<p>d. NPIs serving households (NPISHs);</p> <p>e. Households.</p> <p>The five sectors together make up the total economy.</p>
<p>Inventories</p>	<p>Produced assets that consist of goods and services that came into existence in the current period or in an earlier period held for sale, use in production or other use at a later date. They consist of materials and supplies, work-in-progress, finished goods and goods for resale, as defined below. Included are all inventories held by government, including, but not limited to, inventories of strategic materials, grains and other commodities of special importance to the nation/region.</p> <p>Materials and supplies: Goods that their owners intend to use as intermediate inputs in their own production processes, not to resell.</p> <p>Work-in-progress: Goods and services that are partially completed but that are not usually turned over to other units without further processing or that are not mature and whose production process will be continued in a subsequent period by the same producer. Excluded are partially completed structures for which the ultimate owner is deemed to have taken ownership, either because the production is for own use or as evidenced by the existence of a contract of sale/purchase. They consist of work-in-progress on cultivated assets and other work-in-progress, as defined below.</p> <ul style="list-style-type: none"> • Work-in-progress on cultivated assets: Livestock raised for products yielded only on slaughter, such as fowl and fish raised commercially, trees and other vegetation yielding once- only products on destruction and immature cultivated assets yielding repeat products. • Other work-in-progress: Goods other than cultivated assets and services that have been partially processed fabricated or assembled by the producer but that are not usually sold, shipped or turned over to others without further processing. <ul style="list-style-type: none"> ○ Finished goods: Goods those are ready for sale or shipment by the producer.

	<ul style="list-style-type: none"> ○ Goods for resale: Goods acquired by enterprises, such as wholesalers and retailers, for the purpose of reselling them without further processing (that is, not transformed other than by presenting them in ways that are attractive to the customer).
Imports of goods and services	In concept, all transfers of the ownership of goods from non-residents of a country/region to residents and services provided by non-resident producers to residents of the country/region. In practice, the imports of goods may consist of the inward movement of merchandise across the customs frontier of a country/region and of other goods across the boundaries of her domestic territory, including the direct purchases of the government services and residents of the country/region abroad. Since, imports of merchandise are valued c.i.f., imports also include the charges of resident producers for transport and insurance services in respect of these imports.
National accounts, as a system	It is an accounting system setting out clearly and concisely a framework within which the statistical information needed to analyse the economic process in all its many aspects could be organized and related.
National income	Net domestic product at factor cost plus net factor income from abroad represents the national income of the country/region.
National product at factor cost gross/net	Value of factor cost of the product, attributable to the factors of production supplied by the normal residents of the country/region. It is equal to gross domestic product at factor cost plus net factor income from abroad.
National product at market prices	National product at factor cost plus indirect taxes reduced by subsidies
Private sector	All organized and unorganized enterprises excluding those under public sector
Producers	Industries, producers of government services, producers of non-profit services to households and domestic services rendered by one household to another.
Production accounts	Commodity and activity accounts.

	<ul style="list-style-type: none"> • For commodity: Accounts relating to the total supply of commodities from domestic production and imports and their disposition to intermediate and final uses. • For activity: Accounts of industries, producers of government services, producers of private non-profit services to households, and the domestic services to households, in respect of their gross output of goods and services and their intermediate consumption, primary inputs and indirect taxes less subsidies.
Public corporations	Corporations wholly or mainly owned and/or controlled by the public authorities. (All public financial institutions are treated as corporations).
Public sector	Comprises government administrative departments, departmental and non-departmental enterprises
Residence	The concept of residence in the SNA is not based on nationality or legal criteria. An institutional unit is said to be a resident unit of a country when it has a center of predominant economic interest in the economic territory of that country/region; that is, when it engages for an extended period (one year or more being taken as a practical guideline) in economic activities on this territory.
RestoftheWorld (RoW)	Transactions with therestofthe world callsfor detailed classification of exports and imports of goods and services, of factor incomes and of transactions in financial claims.
Saving	The difference between the current receipts and the current disbursements; the balancing item on the income and outlay account; and the balancing item of “Use of disposable income account”. In other words, saving represents that part of disposable income that is not spent on final consumption goods and services. It may be positive or negative depending on whether disposable income exceeds final consumption expenditure, or vice versa.
Saving, household	This is sum of increase in the financial assets and of physical assets of household sector (for coverage of household sector see capital formation, household).

Saving, household physical assets	Saving of households in the form of physical assets comprising investment in construction including land improvements, machinery and equipment and inventories.
Statistical Discrepancy (also 'Residual Error')	Used to show users something about the degree of reliability of the published data - for example, if compilers feel that the production estimates of GDP/GCP is fairly sound but have doubts about some of the expenditure components. In practice a statistical discrepancy could appear as a result of using different sources and of possible errors and omissions. Showing this would give compilers to study the possibilities of working at more detailed levels to avoid having to make gross assumptions about missing items.
Stocks	Stocks consist largely of the materials and supplied work-in-progress except in construction projects and finished products and goods in the possession of industries. Standing timber and crops are excluded from stocks, but livestock rose for slaughter, logs and harvested crops are included. Producers of government services may also engage in transactions in stocks. These transactions relate primarily to stocks of strategic materials, grains and other commodities of special importance to the nation/region, and to the sales of large lots of surplus goods
Stocks, change in	Difference between market/book values of the stocks at the beginning and end of the period
Valuables	Produced assets that are not used primarily for production or consumption, that are expected to appreciate or at least not to decline in real value, that do not deteriorate over time under normal conditions and that are acquired and held primarily as stores of value. Valuables consist of precious metals and stones, antiques and other art objects and other valuables, as defined below. <ul style="list-style-type: none"> • Precious metals and stones: Precious metals and stones that are not held by enterprises for use as inputs into processes of production. • Antiques and other art objects: Paintings, sculptures, etc., recognized as works of art and antiques.

	<ul style="list-style-type: none">• Other valuables: Valuables not elsewhere classified, such as collections and jewelry of significant value fashioned out of precious stones and metals.
--	---

References: GCP (E)

- Measurement of GDP by final expenditure approach: an introduction, Department of Economic and Social Affairs Statistics Division United Nations, National Bureau of Statistics of China. Vu Quang Viet Background paper 25-27 April 2011 Shenzhen, China.
- National Accounts Statistics: Concepts, Sources and Methods, the Federal Democratic Republic of Ethiopia, Ministry of Finance and Economic Development National Economic Accounts Directorate 2014 Addis Ababa, Ethiopia.
- Sources and Methods, National Accounts Statistics of Ethiopia 1992 (1999/2000) Base Year Series (Draft), National Accounts Department Ministry of Finance and Economic Development; May 2005 Addis Ababa, Ethiopia.
- System of National Accounts 2008, European Commission, International Monetary Fund, Organization for Economic Co-operation and Development OECD, United Nations and World Bank; New York, 2009.
- UNITED NATIONS, STATISTICAL PAPERS SERIES M No. 84; DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS STATISTICS DIVISION, New York, 2000)
Web reference: <http://unstats.un.org/unsd/class/default.asp>