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# Eastern Africa's Manufacturing Sector

## Promoting Technology, Innovation, Productivity And Linkages



**ETHIOPIA COUNTRY REPORT**  
**November 2014**



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# EASTERN AFRICA'S MANUFACTURING SECTOR

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**Promoting technology,  
innovation, productivity  
and linkages**

# EASTERN AFRICA'S MANUFACTURING SECTOR - ETHIOPIA COUNTRY REPORT

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## THE AFRICAN DEVELOPMENT BANK GROUP

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## ABBREVIATIONS

ADLI	Agricultural Development-Led Industrialization
AfDB	African Development Bank
AGOA	African Growth and Opportunities Act
B2B	Business-to-Business
B2G	Business-to-Government
CMT	Cut-Make-Trim
COMESA	Common Market of Eastern and Southern Africa
DBE	Development Bank of Ethiopia
DFQF	Duty-free and quota-free
EAC	East African Community
EBA	Everything But Arms
EDRI	Ethiopian Development Research Institute
EIA	Ethiopian Investment Agency
EPA	Economic Partnership Agreement
ERCA	Ethiopian Revenue and Customs Authority
ESISC	Ethiopian Sugar Industry Support Center Share Company
FDI	Foreign Direct Investment
FTA	Free Trade Area
GDP	Gross Domestic Product
GTP	Growth and Transformation Plan
GVC	Global value chain
GVO	Gross Value of Output
HDI	Human Development Index
HHI	Herfindahl-Hirschman Index
HS	Harmonized System
ICT	Information and Communication Technologies
IDS	Industrial Development Strategy
IGAD	Inter-governmental Authority for Development
IPR	Intellectual Property Rights
ISIC	International Standard Industrial Classification of All Economic Activities
LDC	Least Developed Country
LIDI	Leather Industry Development Institute
LPI	Logistics Performance Index
MDG	Millennium Development Goals
METEC	Metals and Engineering Corporation
MFN	Most Favoured Nation
MIDI	Metal Industry Development Institute
MIGA	Multilateral Investment Guarantee Agency
MNC	Multi-National Corporation
MOFED	Ministry of Finance and Economic Development



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MOI	Ministry of Industry
MoST	Ministry of Science and Technology
MOT	Ministry of Trade
MPDI	Manufacturing Product Diversification Index
MSEDA	Micro and Small Enterprises Development Agency
MSEs	Micro- and Small-scale Enterprises
MVA	Manufacturing value added
MW	Megawatt
NBE	National Bank of Ethiopia
NDP	National Drug Policy
NEER	Nominal Effective Exchange Rate
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
R&D	Research and Development
RCA	Revealed Comparative Advantage
REER	Real Effective Exchange Rate
ROO	Rules of Origin
SADC	Southern African Development Community
SAM	Social Accounting Matrix
SDPRP	Sustainable Development for Poverty Reduction Program
SEZ	Special Economic Zone
SFC	Sana'a Forum for Co-operation
SITC	Standard International Trade Classification
SMEs	Small and Medium-sized Enterprises
STI	Science, Technology, and Innovation
SWOT	Strengths, Weaknesses, Opportunities and Threats
TIDI	Textile Industry Development Institute
TVET	Technical and Vocational Education and Training
UC	Unit Cost
ULC	Unit Labour Cost
VAT	Value Added Tax
WDI	World Development Indicators
WTO	World Trade Organization

## ACKNOWLEDGEMENTS

This country report was prepared as part of a regional assessment of the manufacturing sector in Eastern Africa covering seven countries – Burundi, Ethiopia, Kenya, Rwanda, Seychelles, Tanzania and Uganda – commissioned by the African Development Bank (AfDB), Eastern Africa Regional Resource Center (EARC). The report was task managed by Dr. Tilahun Temesgen, Chief Regional Economist, EARC. Overall guidance was received from Mr. Gabriel Negatu, Director, EARC, Nairobi, and Messrs. Abraham Mwenda and Stefan Muller, Lead Economists, EARC and Ms. Josephine Ngure, Resident Representative of the AfDB in Ethiopia. The document was prepared by Dr. Tadele Ferede Agaje, consultant and country expert, and reviewed by Dr. Derk Bienen BKP Development and Dr. Tilahun Temesgen, AFDB/EARC. AfDB staff

who provided important inputs and peer-review comments included Messrs. Admit Zerihun and Mumina Wa-Kyendo.

This report has also greatly benefitted from discussions with, and comments and suggestions from stakeholders who participated at the country level validation workshop in Addis Ababa. The validation workshop was opened by H.E. Ato Tadesse Haile, State Minister of Industry of the Federal Democratic Republic of Ethiopia. Special thanks go to Ato Ahmed Nuru, special advisor to the State Minister of Industry for organizing and facilitating the workshop. The financial contribution from KOAFEC in undertaking the study is acknowledged and greatly appreciated.



## FOREWORD

Rapid growth has been associated with diversification where manufacturing and modern services sectors contribute to GDP and employment. Globalization has greatly increased the premium on manufacturing and rapidly growing countries are those with large and competitive manufacturing sectors. Successful countries have always pushed the limits of their comparative advantages and diversified their economies into new activities with higher value addition such as manufacturing. For Ethiopia, a competitive and thriving manufacturing sector is central to the Growth and Transformation Plan of the country.

It is in recognition of the vital role of the manufacturing sector in economic development that the African Development Bank initiated the study on Ethiopia's manufacturing sector and its findings are presented on this report. The report provides a diagnostic and analytical assessment of the current sector of the manufacturing sector in Ethiopia and makes recommendations with a view to enriching policies to strengthen manufacturing activities in Ethiopia.

While manufacturing activities in Ethiopia have witnessed a historically unprecedented increase in the past ten years, the sector still presents a large room of untapped potentials and investment opportunities. The competitiveness of the industry has also been improving in the Ethiopian setting that is characterized by cost-effective labor force, abundance of production raw materials and cheap utilities. Thus, this report reveals that enhancing competitiveness of the manufacturing sector in Ethiopia is pivotal to its economic transformation, and with the right business enabling environment, including support to improved market access and skills development, the sector has a huge potential to spearhead the agenda of sustainable and inclusive growth.

The report has therefore articulated a set of policy measures and incentives under a well-coordinated industrial strategy to convert the manufacturing sector in Ethiopia into an engine of growth and strengthen its forward and backward with the agriculture and service sectors to ensure sustainable growth. For example, the study recommends a refocus of industrial strategy to resource-based and labor-intensive production process in line with the country's comparative advantage. In general, the report highlights a roadmap for mainstreaming industrial transformation into Ethiopia overall development framework and recommends strategies through which industrial transformation consistent with the country's economic vision can be realized.

An outstanding recommendation of the study is the need to improve infrastructure to support the manufacturing sector with emphasis on transport, energy and communications. It is interesting that the African Development Bank has equally identified infrastructure development as a major pillar of its development financing in Ethiopia in the medium-term.

I am optimistic that when the recommendations of this study are fully implemented, the manufacturing sector will assume its rightful role as one of the leading sectors in Ethiopia's economic development. I therefore recommend this report to policy makers and to all stakeholders in the development of Ethiopia.

Josephine Ngure,  
Resident Representative,  
Ethiopia Country Office  
African Development Bank



## EXECUTIVE SUMMARY

Ethiopia has registered solid economic growth since 2003/04, but growth slowed down in 2011/12 due to weak performance of the agriculture and industrial sectors. This growth has led to a reduction in income poverty and improvements in other social indicators. However, the country's growth acceleration in recent years has not been associated with diversification and structural change. In particular, the performance of the manufacturing sector has not been satisfactory.

The main objectives of this study are twofold: to provide a diagnostic and analytical assessment of the current status of the manufacturing sector in Ethiopia, and to contribute to the process of analysis and policy formulation by identifying binding factors, constraints, opportunities and strengths for the development of the sector in Ethiopia.

Despite strong economic growth, macroeconomic stability has remained a concern. Real interest rates have been generally negative owing to inflationary pressures. While nominal exchange rate showed a downward trend, real exchange has generally been high. This tends to undermine the competitiveness of exports, and to create a disincentive to savings, hence raising challenges for domestic resource mobilization to finance the investment required for sustained rapid growth.

The service sector continues to be the main engine of growth of the economy. Despite the strong policy emphasis on agriculture, its contribution to overall growth has not been commensurate with its share in GDP. The contribution of the manufacturing sector to growth, employment and exports has remained minimal. In addition, reflecting declining sectoral terms of trade, the manufacturing sector share of GDP (in current prices) has shrunk.

Not only did the share of manufacturing real value added in total industrial GDP decline, Ethiopia's manufacturing sector is also lagging in comparison to peer economies and relative to its aspirations: both manufacturing value added (MVA) share in GDP and MVA per capita in Ethiopia are well below the Eastern Africa regional average and selected Asian countries. MVA per establishment showed a declining trend as the number of establishments grew, indicating growth came predominantly from an increase in the number of small and medium-sized enterprises rather than from the expansion in scale of production by existing, more mature enterprises.

Manufacturing exports not only represent a relatively low percentage of total merchandise exports, but also the share has shown a declining trend in recent years. Ethiopia exports very few manufactured commodities compared with the Eastern African average and selected Asian countries, indicating both a low manufacturing production base and a lack of competitiveness of the sector. Ethiopia's manufacturing export is one of the least

diversified compared to its potential global competitors. Moreover, there has been comparatively little progress in diversifying the export mix. This slow change in the export dynamics may have been due to the low level of market and product innovation of entrepreneurs as reflected by the dominance of resource-based manufacturing exports.

The distribution of firm sizes within an industry is typically highly skewed with a few large firms and a large number of small and medium-sized enterprises. However, in Ethiopia the share of private establishments that employ 50 and more workers increased between 2000/01 and 2010/11. Moreover, there was an even more surprising decline in the number of smaller firms that employed between 10 and 19 workers. This seems consistent with the "missing middle" hypothesis, which holds that institutional factors in Sub-Saharan Africa result in a bifurcation of firm sizes into large and small, with an under-representation of medium-sized firms.

Similar to the overall trend in the large and medium-scale manufacturing sector, the majority of manufacturing subsectors show a declining employment per firm. Only a few manufacturing subsectors (e.g. chemicals, basic iron and steel, machinery and equipment and vehicles, trailers and semi-trailers) showed a rise in the average number of employees per firm. This points to the fact that the manufacturing is dominated by firms that employ fewer workers.

The manufacturing sector – both private and public segments – depends largely on imported raw materials. The use of local inputs declined in recent years, indicating that manufacturing industries have become increasingly dependent on imported inputs. The implications of sourcing inputs from abroad are complex. While the quality of products tends to improve in firms that are able to access foreign inputs, upstream linkages within the economy are weakened and firms are vulnerable to world price fluctuations. The evidence suggests that greater ability to source inputs internationally favourably impacts on a firm's ability to sell internationally.

While both labour productivity and average labour compensation of the manufacturing sector grew between 2001/02 to 2010/11, the latter grew faster than the former. This led to a rise in unit labour cost, an indicator of competitiveness, indicating a disappointing performance of the manufacturing sector in terms of labour cost competitiveness. This did not serve to create comparative advantage for Ethiopia in manufacturing as reflected by a low revealed comparative advantage (RCA) in manufacturing – which is lower than that of peer countries in Eastern Africa. Clearly, Ethiopia is lacking in comparative advantage even in some of the priority industries, such as textiles, leather, food and beverages, and chemical sub-sectors.

The cost disadvantage is also reflected in the export competitiveness of the manufacturing sector. The majority of manufacturing sub-sectors are not competitive in the international

market. Although leather and footwear has remained competitive, its global competitiveness has shown a declining trend.

The Ethiopian government has been providing incentives to promote the manufacturing sector, but the impact of these financial and fiscal incentives has not been properly assessed. Although incentives can help firms enter new markets and generate positive externalities (e.g. knowledge spillovers), they may also weaken competitiveness by protecting inefficient firms. Discussions with stakeholder indicate that financial and fiscal incentives are very attractive in terms of quality and coverage, but strong monitoring mechanisms are lacking. In addition, inadequate foreign exchange and finance have been identified as the main challenges facing manufacturing firms. The problems manifest in the form of limited availability of finance and foreign exchange as well as delays in processing requests. All these increase the cost of doing business which reduces the competitiveness of the manufacturing sector both in the local, regional and global markets.

There are a host of factors that constrain the competitiveness of the manufacturing sector. Ethiopia is lagging behind its neighbours with respect to ICT, both in terms of the level of coverage and the quality of services. Fixed and mobile telephone subscribers per 100 people, an indicator of the telecommunication infrastructure, have been among the lowest compared with other African countries. Discussions with stakeholders also indicate that high cost and poor quality of communication services are some of the key constraints facing manufacturing industries in reaching regional and international markets, importing inputs, delivering services, etc. This negatively affects the competitiveness of the manufacturing industries.

Inefficient logistics have also been identified as a severe problem facing the manufacturing sector. Ethiopia ranks poorly in the World Bank's Logistics Performance Index (LPI). In particular, tracking and tracing, international shipments, infrastructure, customs and logistic competence services are not only poor but also have shown no improvement over time. High logistics costs reduce the competitiveness of Ethiopian goods and services in regional and global markets and also raise the price of imported goods and services to domestic consumers. In particular, high transportation cost has been reported as severe problem hindering the performance of local manufacturing industries and this retards integration of industries with regional and global markets.

### Recommendations:

A well-coordinated industrial strategy is required to convert the manufacturing sector into an engine of growth and strengthen its forward and backward linkages with the agriculture and service sectors to ensure sustainable growth. Thus a concerted effort aimed at rectifying both demand and supply side constraints is required to create a viable manufacturing sector. A comprehensive package of support is necessary to address both the supply and demand side problems of the manufacturing sector which include the following:

- **Fine-tune and focus on manufacturing industries in which the country has a strong comparative advantage:**
  - In the initial stage and given the current resource endowments and capability, a possible strategy would be to focus on resource-based and low-technology (labour-intensive) products with a higher degree of domestic value addition;
  - Subsequently, moving towards the production of medium and high-technology manufacturing products will be the main avenue for improving competitiveness.
- **Streamline and introduce incentives for triggering structural transformation in manufacturing:**
  - Introduce functional incentives such as dedicated utility supply and reduced utility rates (e.g. power);
  - Establish a special window that is dedicated to providing loans to investment in manufacturing industries and commercial agriculture, and provide loans at reduced interest rates;
  - Preferential access to foreign exchange to manufacturing and agriculture;
  - The Industrial Investment Allowance: encourage large-scale investment by both domestic and foreign investors in specific industry sectors that manufacture certain products and goods by providing tax relief, in the form of industrial investment allowances, to strategic manufacturing projects;
  - Establish and strengthen industrial development zones: This incentive is designed to promote international competitiveness and to attract sustainable foreign direct investment and develop links between domestic and zone-based industries for the optimal use of existing infrastructure, the creation of employment and technology transfers;
  - Research and development incentives: Given the high costs involved in research and development (R&D), a tax incentive can be used as a way of indirectly subsidising research and development costs. Manufacturing industries that wish to improve their productivity through innovation or enhance their current product quality would be encouraged to benefit from this incentive;
  - Reinvestment allowance or expansion incentives: A reinvestment allowance can also be used to promote manufacturing industries that incur capital expenditure to expand, automate, modernise or diversify its existing manufacturing business within the same industry. This incentive aims at promoting automation processes in the manufacturing sector in an effort to increase productivity;
  - Industrial innovation support programme: This incentive serves to promote technological development through

the provision of financial assistance to registered enterprises in manufacturing or software development that engage in the development of innovative, competitive products and/or processes which should contribute to improving technology;

- Training expenses deduction: Some productive sectors, especially manufacturing industries, incur training expenditures before the commencement of business and could be entitled to benefit from this incentive based on certain conditions such as the trainees are employed by the company when operation commences;
- Introduce quality standards award schemes for those manufacturing firms that make use of quality and standards.
- **Improve quality of service delivery and institution**
  - Special window services to manufacturing and commercial agriculture firms;
  - Streamline and network support institutions;
  - Develop research and development support institutions focusing on adaptation and diffusion of existing technologies;
  - Establish and support establishment of laboratory inspection and standardization, and enhance the capacity of Ethiopian Quality Standards Agency;
  - Nurture industrial districts through cluster policies; and
  - Use government procurement to promote development of local and regional manufacturing industries.
- **Improve logistics efficiency:**
  - Improve coordination among the different service providers through investment in networking; Establishing a Trade Net electronic platform (e.g. that of Singapore) could help to enhanced Business to Business (B2B) and Business to Government (B2G) electronic communications;
  - Enhance and strengthen national standards on product quality, packaging, storage, and transport conditions;
  - Improve container tracking capability through IT-supported trade facilitation; and
  - Streamline and effective coordination of border clearance processes (customs procedures) and establish a dedicated window for commercial agriculture and manufacturing.
- **Improve hard infrastructure: Transport, energy and communications:**
  - Disentangling the production and power distribution activities could help to ease the current power distribution failures;

- Expand the establishment of industrial zones in major cities and towns, with supporting infrastructure;
- Build the capacity of the transport sector through linkages with universities and research institutes, and loans and technical assistance to build its capacity and usage of modern modes of transport.

- **Improve the quantity and quality of human capital:**

- Benchmark Ethiopia's education and training system against major competitors in terms of quantity, quality, and relevance and cost effectiveness, and identify areas of improvement;
- Develop a programme to link vocational training institutions and universities with industry,
- Set up training centres in industrial parks, high-tech parks and export processing zones;
- Conduct regular skills audits, particularly in TVETs;
- Encourage enterprise training through subsidized training expenditures, tax exemptions, etc.;

- **Science, technology and innovation:**

- Assess the structure, capabilities and relevance of technology institutes, including, R&D support, regional technology centres and technology financing;
- Launch a technology foresight exercise to raise awareness of industry's technological weaknesses and create consensus between industry, research institutes and the bureaucracy on measures that need to be implemented to remedy those weaknesses;
- Establish and stimulate linkages between industry and Science and Technology infrastructure (R&D laboratories and universities). These may include:
  - Restructuring and furnishing laboratories;
  - Encouraging the placing of research students in industrial establishments;
  - Joint research awards by industry and universities for work on subjects of relevance to industry; and
  - Providing incentives to university research staff to work with industry.
- Set up a technology import information service or database to collect data on foreign sources of technology. This is especially useful for SMEs for overcoming the information gaps they face in accessing new technologies; establish online links in all major industrial areas.

Finally, it should be noted that the specific nature of policies and support measures should emerge from close consultations with stakeholders in the sector since any policy that lacks the full support of the different actors is bound to have minimal impact.



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## INTRODUCTION

Contrary to initial pessimism, recent years have seen a change for the better in the performance of the Ethiopian economy. The year 1992 witnessed the introduction of a more liberalized policy regime along with significant policy and institutional reforms. A variety of market-based reforms were introduced to reverse the past policies. The incumbent government adopted an overall development strategy known as Agricultural Development-Led Industrialization (ADLI) strategy in order to stimulate farm output and rural incomes, thereby generating broad-based growth and reduce poverty. The strategy focused on increasing the production and productivity of smallholder agriculture through complementary intervention such as promotion of improved agricultural technologies, provision of credit services, development of infrastructure, and improvement of primary education and health care services (MOFED, 2002, 2005).

The focus on broad-based growth and poverty reduction has been underscored in the series of poverty reduction programs introduced since the early 2000s. The first of these, called Sustainable Development for Poverty Reduction Program (SDPRP), was implemented between 2002/03 and 2004/05. The program was founded on four pillars: namely ADLI, reform of the justice system and the civil service, decentralization and empowerment, and capacity building in public and private sectors. A second phase of the poverty reduction program, which focuses

on agriculture and sustainable development, known as Plan for Accelerated and Sustained Development to End Poverty (PASDEP), covered the period from 2005/06 to 2011/10. Unlike the previous program, PASDEP strongly positioned itself towards commercialization of agriculture and private sector development as the engines of accelerating growth and alleviating poverty. In addition, PASDEP consisted of eight key components: building all-inclusive implementation capacity; a massive push to accelerate growth; creating the balance between economic development and population growth; unleashing the potentials of Ethiopia's women; improving infrastructure; strengthening human resource development; managing risk and volatility; and creating employment opportunities.

Based on the experiences of the previous programs, the government has introduced a more comprehensive plan known as Growth and Transformation Plan (GTP) which spans between 2010/11 and 2014/15. Unlike the previous programs, the GTP gives due emphasis to promoting the manufacturing sector. This study reviews the current policy framework for manufacturing in Ethiopia, assesses the performance of the sector, analyses the constraints to its further development and considers appropriate policy responses.







# 1. THE CURRENT STATUS OF THE MANUFACTURING SECTOR IN ETHIOPIA

## 1.1 Overview of the Economy

### 1.1.1 Overall Economic Policy Framework

The Growth and Transformation Plan (GTP) is premised on a number of principles, including sustaining faster and equitable economic growth, maintaining agriculture as a major source of economic growth, and creating favourable conditions for industry to play a key role in the economy. The GTP's growth goals are ambitious: achieving 11-15% gross domestic product (GDP) growth each year over the period; this would enable Ethiopia to achieve its Millennium Development Goals (MDGs) by 2015 and to rise to middle-income status by 2020-23. The macroeconomic goals include maintaining stable price conditions and generating significant increases in the share of GDP accounted for by exports and imports, domestic savings and investment, and fiscal revenues.

To attain these goals, Ethiopia recognizes the need for a significantly expanded role of its manufacturing sector, which received little attention in the previous development programs and remains very weak. While maintaining an emphasis on the agro-processing and construction industries, the GTP also gives priority, for example, to the chemical and metallurgical industries with the motive of having these sectors play a catalytic role in the transition from agricultural-led to industrial-led growth. In general, the GTP provides support to the following sectors: labour-intensive sectors with large market potential; sectors with vertical and horizontal linkages to agriculture, such as leather, which add value to domestic agricultural products and thus help keep value chains and associated income and employment opportunities within the country; export-oriented and import-substituting sectors; and sectors that facilitate technology transfer between sectors and between countries. The GTP also gives particular support to Ethiopia's micro and small-scale enterprises, which the GTP drafters see as the foundation for the development of future medium- and large-scale enterprises.

### 1.1.2 Performance and Challenges: An overview

In the last decade, Ethiopia has experienced solid progress in terms of key economic and social indicators. The country registered an average annual real growth rate of 9.4% between 2000/01 and 2011/12, well above the population growth rate of 2.2% implying real GDP per capita increased by about 7.2% per annum.

This performance led to a reduction in both poverty and unemployment. The incidence of poverty declined from 38.7% in 2004/05 to 29.8% in 2010/11. About 3.7 million people were lifted out of poverty over the same period. The unemployment rate declined from 26.1% in 2003/04 to 17.5% in 2011/12; the reductions in unemployment were especially strong in major urban areas.

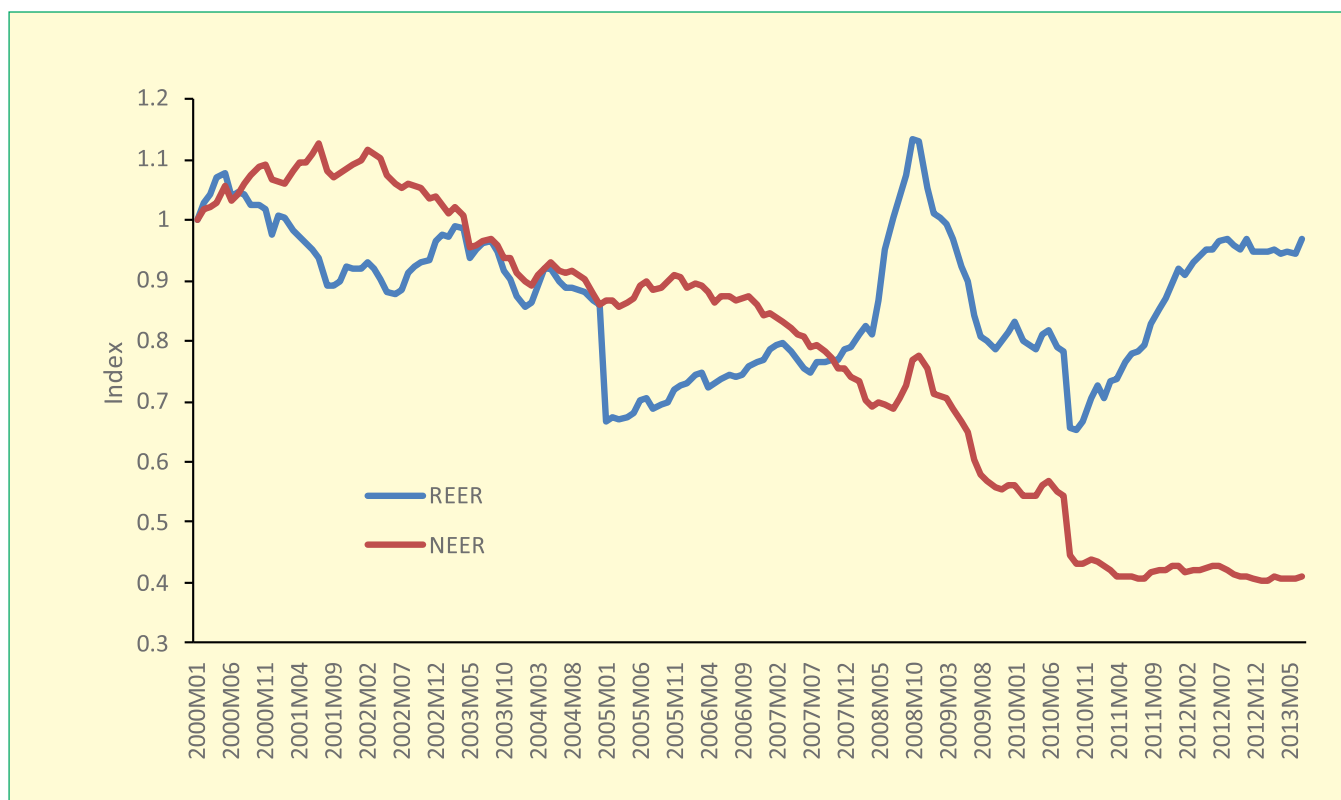
Household consumption claimed a growing share of GDP, increasing from 71.2% of GDP in 2000/01 to 76.5% in 2011/12. At the same time, Ethiopia was able to increase its investment share of GDP substantially, from 23.6% to 34.6% of GDP over the same period. This was possible because of a steep decline in government consumption spending as a share of GDP (from 15.7% to 7.0% over the period), and a significant expansion of the trade deficit (from 11.8% to 18.1%). Accordingly, at the end of the period, over half of Ethiopia's investment spending was financed by inflows of capital from abroad. This increased reliance on capital inflows reflected the inadequate growth of domestic savings: the domestic savings rate increased from 13.1% to 16.5% over the period, much less than the growth in investment.<sup>1</sup> Heavy dependence on external sources of investment financing has led to accumulation of external debt. Both exports and imports increased faster than GDP, increasing the share of total trade in Ethiopia's GDP from 36% to 46.1% over the period.

While growth performance was strong, macroeconomic stability has remained an issue in Ethiopia. Interest rates have been generally negative in real terms, while the exchange rate, despite a more or less steady downward trend in nominal terms, has generally been high and volatile in real terms (Figure 1.1). The exchange rate dynamics reflect a policy of maintaining stable nominal parities against the major currencies, with period devaluations when surges in inflation push the real exchange rate higher. The Ethiopian government has undertaken various measures to stabilize inflation such as tight fiscal and monetary policies as well as administrative measures. While fiscal measures include reducing direct domestic borrowing from banks, monetary policy measures have also been introduced such as rising the reserve requirement of banks (from 5% to 15%), increase interest rate, and reducing domestic credit. On administrative front, the then Ministry of Trade and Industry (now the Ministry of Trade) imposed a price cap on selected commodities, but subsequently price cap was lifted except in sugar, edible oil and wheat flour. This intervention was largely unsuccessful; severe supply shortage occurred and the prices of some commodities have gone up, instead. These administrative decisions were made by the government unilaterally without consultation of the business community. It appears that there was lack of research prior to the enforcement of the cap.

<sup>1</sup>Gross national saving has also increased from 22.2% of GDP in 2000/01 to 28% in 2011/12.



**Figure 1.1: Nominal and Real Effective Exchange Rates, January 2000 to August 2013, January 2000 = 1.00**



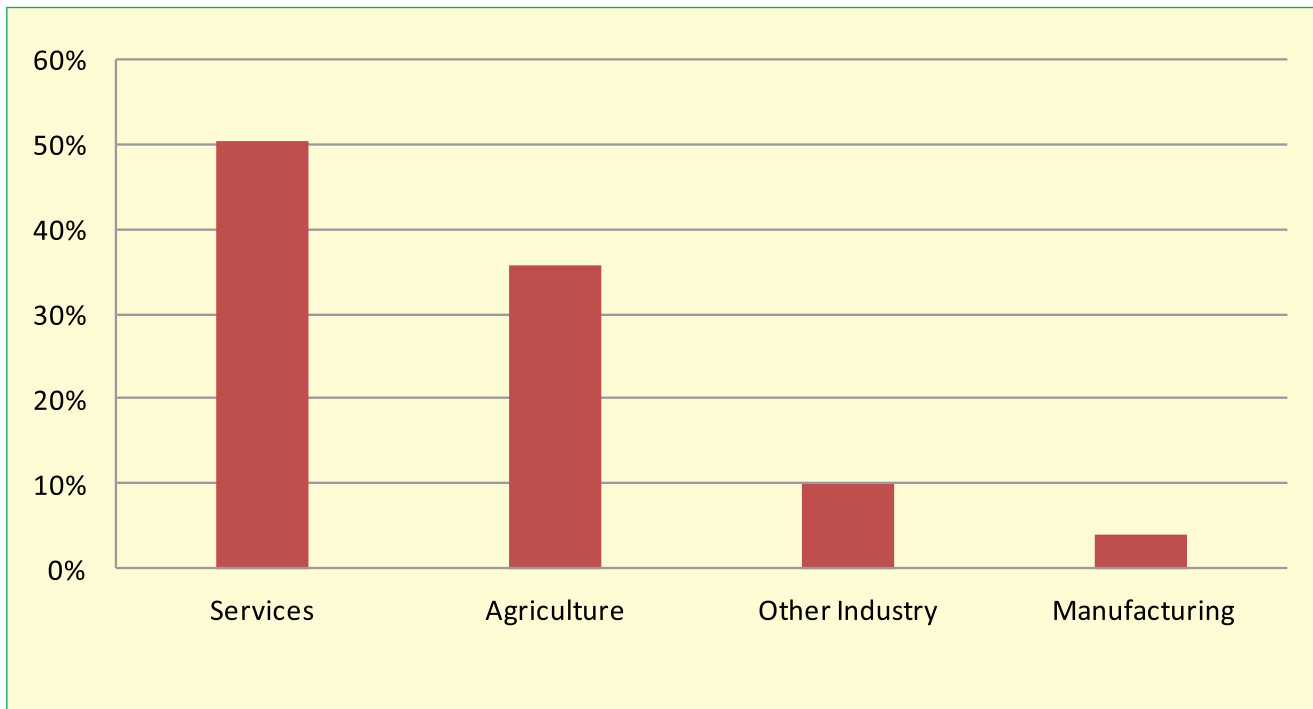
Source: Bruegel Institute

This configuration of monetary policy (negative real interest rates and a high real exchange rate) tends to undermine the competitiveness of non-resource-based industry, especially manufacturing, and to create a disincentive to savings, hence raising challenges for domestic resource mobilization to finance the investment required for sustained rapid growth as called for by the GTP. As well, it tends to undermine exports, again especially manufactured exports, and contributes to a widening of the external deficit, exposing the economy to balance of payments risks. Ethiopia's macroeconomic framework contrasts, at least in some indicators, sharply to the Asian model which features competitive exchange rates, stable inflation, high rates of domestic

savings coupled with low shares of consumption, and export orientation that favours manufacturing exports.

The service sector was the main engine of growth of the economy, accounting for slightly less than half of the growth in total value added between 2000/01 and 2011/12 (Figure 1.2). Despite the strong policy emphasis on agriculture, this sector accounted for only 38.5% of total growth over this period, substantially less than its share of GDP. The growth contribution of the manufacturing sector was minimal: it accounted for only 3.6% of total GDP growth over the same period.

**Figure 1.2: Sectoral contribution to GDP growth (%), (2000/01-2011/12)**



Source: Computed based on MoFED data, GDP by Economic Activity at Constant Prices ('000 Birr), 2010/11 Base Year

Despite agriculture's under-weight contribution to real growth, its share of GDP (in current basic prices) increased over the period due to the increase in the price of agricultural output relative to other sectors (Table 1.1). Conversely, notwithstanding its relatively

stronger contribution to growth, the share of services in 2011/12 was slightly below its share in 2000/01. Reflecting declining sectoral terms of trade, the manufacturing sector shrank from 6.2% of total sectoral value added in 2000/01 to only 3.6% in 2011/12.

**Table 1.1: Sectoral shares in GDP (%), at current prices**

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Agriculture	46.4	42.5	40.8	43.1	45.5	46.7	46.3	49.3	49.5	45.5	45.2	48.3
Manufacturing	6.2	6.1	6.1	5.7	5.2	4.9	4.8	4.3	4.0	4.2	3.8	3.6
Other Industry	6.0	7.5	7.4	7.9	7.5	7.2	7.4	6.4	5.7	6.0	7.0	6.8
Services	41.4	43.9	45.7	43.3	41.8	41.2	41.5	40.0	40.8	44.3	44.0	41.3

Source: Ministry of Finance and Economic Development: GDP by Economic Activity at Current Prices

## 1.2 Descriptive Overview

### 1.2.1 Size of Manufacturing Sector in the Economy

The size of the Ethiopian manufacturing sector can be measured using different indicators such as value added, employment,

exports, etc. Manufacturing value added (MVA) significantly grew by about 8.8% on an annual average basis in real terms, and 6.6% in per capita terms between 2000/11 and 2011/12. Nonetheless, the share of manufacturing real value added in total industrial GDP declined from 44% in 2000/01 to 36.5% in 2011/12 (Table 1.2).

**Table 1.2: Share of manufacturing value added in industrial GDP (%)**

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
MVA (Million ETB)	8147	8251	8316	8864	9998	11057	11980	13215	14415	16086	18037	20504
MVA (Per Capita)	126.17	124.35	122.16	126.91	139.92	151.26	161.94	176.44	187.46	203.77	222.55	246.40
MVA (Share of Industrial VA, constant 2010/11 prices)	44.0	41.2	39.1	37.6	38.8	39.1	39.2	39.1	38.8	38.3	36.5	36.5

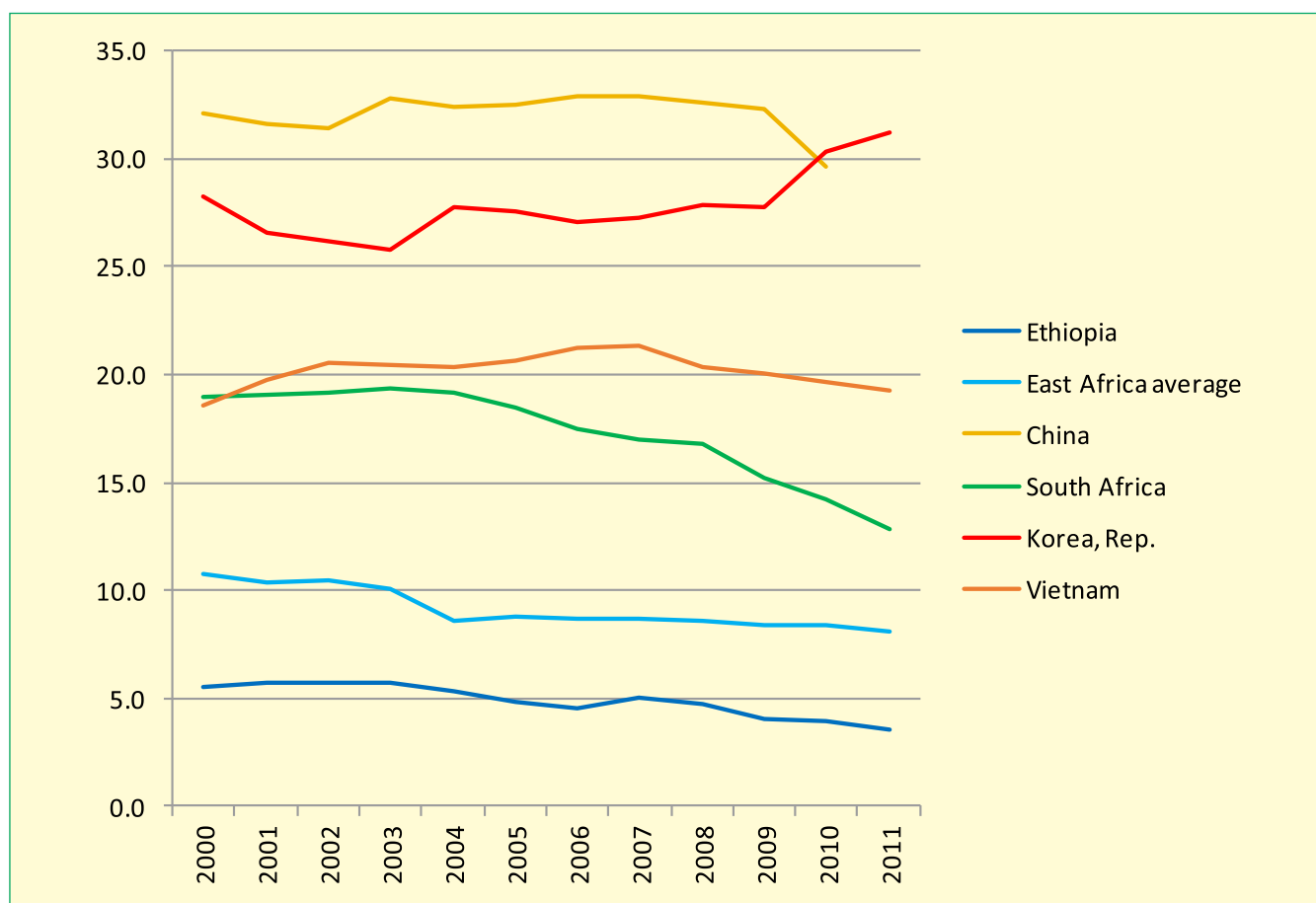
Source: GDP by Economic Activity at Constant Prices ('000 Birr), 2010/11 Base Year; and at Current Prices

# EASTERN AFRICA'S MANUFACTURING SECTOR - ETHIOPIA COUNTRY REPORT

Not only is manufacturing lagging behind other Ethiopian sectors, it is also lagging in comparison to peer economies and relative to its aspirations: both MVA share in GDP and MVA per capita in Ethiopia

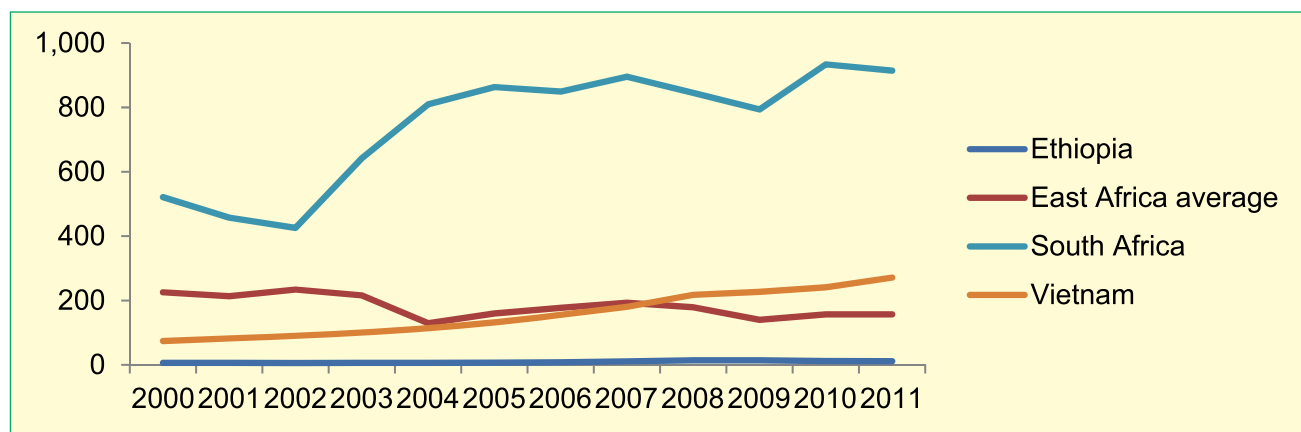
are well below the Eastern Africa regional average and selected Asian countries (Figure 1.3 and Figure 1.4).

**Figure 1.3: Share of manufacturing in GDP in Ethiopia and selected countries (%), 2000-2011<sup>2</sup>**



Source: World Bank / World Development Indicators (WDI).

**Figure 1.4: Trends in manufacturing value added per capita in Ethiopia and selected countries, 2000-2011**



Source: World Bank / World Development Indicators (WDI).

<sup>2</sup>The "East Africa average" is calculated here as the average share of the manufacturing sector in the 7 country studies (Burundi, Ethiopia, Kenya, Rwanda, Seychelles, the United Republic of Tanzania, and Uganda).

The manufacturing sector's contribution to total employment in the economy has been modest. Employment in the manufacturing sector increased at an annual average rate of 6.7% between 2000/01 and 2010/11 (Table 1.3) compared to MVA growth over the comparable period of 8.4% per annum. Growth in output per worker was 2.82% per annum over the period; this is a relatively modest figure given that Ethiopian industry would be expected to be in a catch-up mode on technology and also exploiting increasing returns to scale due to the rapid expansion of the Ethiopian economy during this period. However, as can be seen, MVA per establishment fell over the period as the number of establishments

grew, indicating growth came predominantly from an increase in the number of small and medium-sized enterprises rather than from the expansion in scale of production by existing, more mature enterprises.

Nominal wages increased by about 14.9% per year, substantially faster than the growth in MVA per employee at current prices (10.3% per year or 2.82% per year in real terms). This suggests that labour cost growth is eroding the competitiveness of the manufacturing sector.

**Table 1.3: Trends in value added, employment and establishments in the manufacturing sector**

	MVA	Manufacturing Employment	MVA/Employee	Manufacturing Establishments	Employees Per Manufacturing Establishment	MVA/Establishment
2000/01	5,032,146	93,737	53683.67	801	117	6,282,330
2001/02	5,044,362	98,986	50960.36	908	109	5,555,465
2002/03	5,117,237	101,404	50463.86	965	105	5,302,837
2003/04	5,512,192	105,381	52307.27	1,075	98	5,127,620
2004/05	6,152,385	109,150	56366.33	1,212	90	5,076,225
2005/06	6,992,192	118,468	59021.78	1,247	95	5,607,211
2006/07	7,655,202	134,963	56720.75	1,451	93	5,275,811
2007/08	8,617,869	131,803	65384.47	1,938	68	4,446,785
2008/09	9,504,445	148,817	63866.67	2,188	68	4,343,896
2009/10	10,797,131	185,086	58335.75	2,177	85	4,959,638
2010/11	12,323,846	173,397	71073.01	2,194	79	5,617,067
<b>Av growth</b>	<b>9.37%</b>	<b>6.34%</b>	<b>2.85%</b>	<b>10.60%</b>	<b>-3.85%</b>	<b>-1.11%</b>
<b>Av annual growth rate</b>	<b>9.54%</b>	<b>6.72%</b>	<b>2.82%</b>	<b>11.23%</b>	<b>-4.51%</b>	<b>-1.69%</b>

Source: CSA (Large and medium scale manufacturing survey); and Ministry of Finance and Economic Development: GDP by Economic Activity at Constant Prices (2010/11 base year).

The slow pace of manufacturing development in Ethiopia is also evident at the international level. Manufacturing exports not only represent a relatively low percentage of total merchandise exports, but also the share has shown a declining trend in recent years, falling from 16.7% in 2001 to 12.9% in 2012 (Table 1.4). Ethiopia

exports very few manufactured commodities compared with the Eastern African average and selected Asian countries (Figure 1.5), indicating both a low manufacturing production base and a lack of competitiveness of the sector.

**Table 1.4: Ethiopia's exports of manufactured products, 2001-2012<sup>3</sup>**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total manufactured exports, million USD	67.4	78.5	88.9	191.3	480.2	553.7	282.3	330.7	322.7	495	488.6	526
Share of manufactured exports in total merchandise exports (%)	16.7	18.9	17.3	31.1	51.8	53.1	22.1	20.6	19.9	21.2	18.7	12.9
Total manufactured exports as % of industrial GDP	6.3	7.3	7.4	13.5	30.1	28.8	10.9	9.5	9.3	16.2	14.6	n.a.

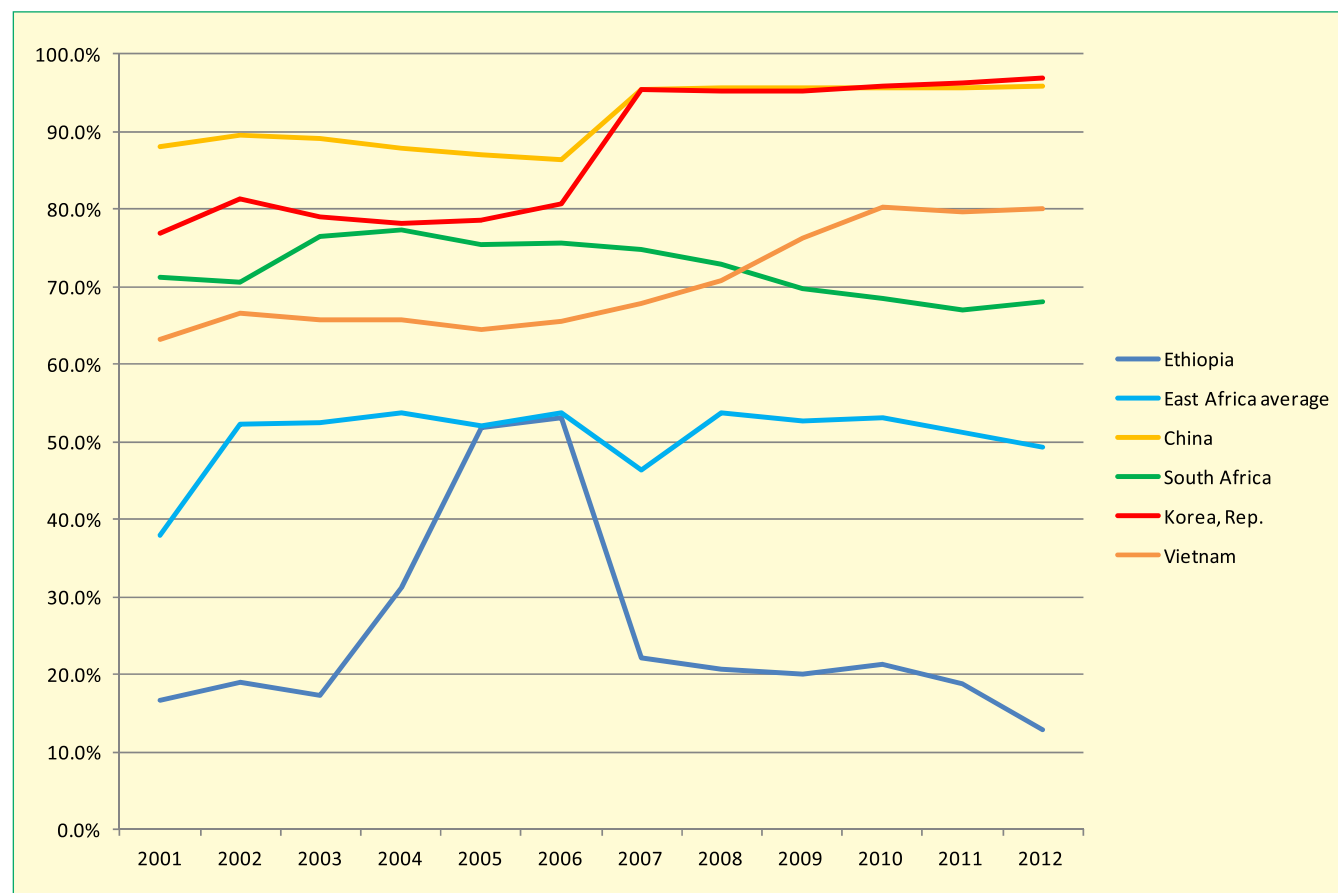
Source: International Trade Centre's TradeMap (for export data); World Bank/World Development Indicators (WDI) (for data on GDP)

<sup>3</sup>The definition of "manufacturing" applied to determine manufactured exports in this table is based on the ISIC classification (specifically, ISIC Rev. 3), i.e. chapter D – Manufacturing (sections 15–37). Other sources for international trade data – such as WDI – apply a more restricted definition of "manufactures", which comprise

"commodities in SITC sections 5 (chemicals), 6 (basic manufactures), 7 (machinery and transport equipment), and 8 (miscellaneous manufactured goods), excluding division 68 (non-ferrous metals)". In other words, they exclude processed agricultural products, beverages and others.



**Figure 1.5: Share of manufactured exports in total merchandise exports in Ethiopia and selected countries (%), 2001-2012**

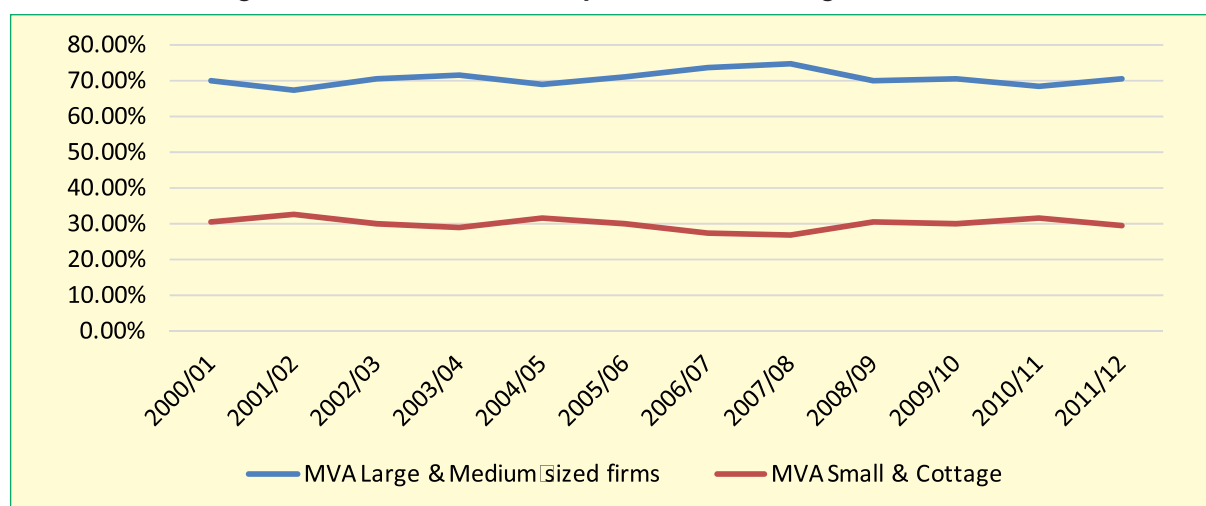


Source: International Trade Centre's TradeMap.

Ethiopia's manufacturing sector is divided, for statistical purposes, into small and cottage firms and large and medium firms. Manufacturing value added of large and medium manufacturing industries grew by about 10.1% per annum in real terms between 2000/01 and 2010/11, one and half times as fast as the MVA of the

small and cottage enterprises, which grew at 6.0% per annum. However, the small and cottage firms were able to increase prices to a greater extent; accordingly, the shares of MVA of the two groups remained more or less flat between 2000/01 and 2011/12 (Figure 1.6).

**Figure 1.6: Share of Large and Small Firms in Ethiopia's Manufacturing Sector**



Source: Ministry of Finance and Economic Development: GDP by Economic Activity at Current Prices

Employment in large and medium-sized manufacturing firms registered a growth rate of 6.8% over the same period, much lower than the urban labour force growth rate. Given the 10.1% expansion of output of these firms, this implies productivity growth of 3.3% per annum, a substantial pace faster than the 1.8% growth in overall manufacturing sector productivity.

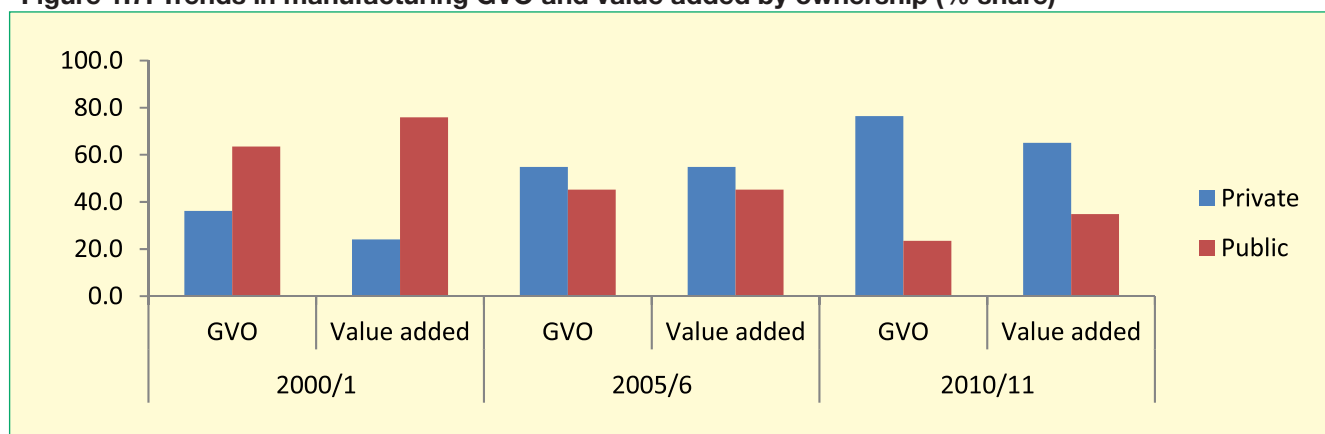
## 1.2.2 Structure of the manufacturing sector

### 1.2.2.2 Distribution of Manufacturing Firms by Public vs. Private Ownership

Data on firm ownership are restricted to large and medium-sized

firms; the small and cottage firms are privately owned. Private manufacturing firms in the large and medium-sized class greatly expanded their share of gross value of output (GVO) and value added of the large and medium-sized manufacturing group total; since 2005/06, the private sector firms have been the dominant force and this might be due to increased participation of private sector and privatization of some of public manufacturing enterprises (Figure 1.7)<sup>4</sup>

**Figure 1.7: Trends in manufacturing GVO and value added by ownership (% share)**

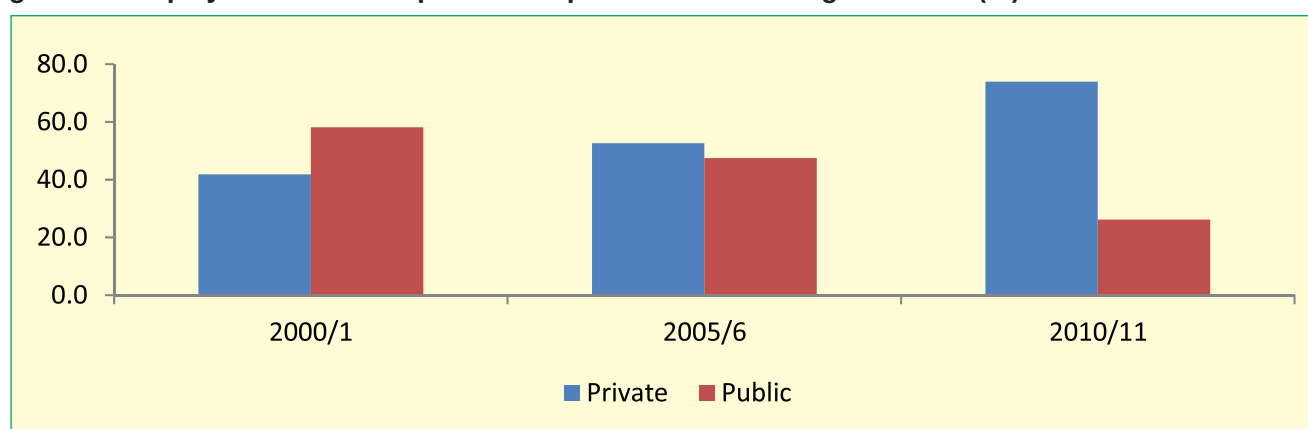


Source: CSA

A similar trend has been observed for employment (Figure 1.8). The employment share of private manufacturing industries in total manufacturing employment within the large and medium-sized

group increased from 41.9% in 2000/01 to 73.9% in 2010/11. On the other hand, the share of public manufacturing industries declined from 58.1% to 26.1%.

**Figure 1.8: Employment shares of private and public manufacturing industries (%)**



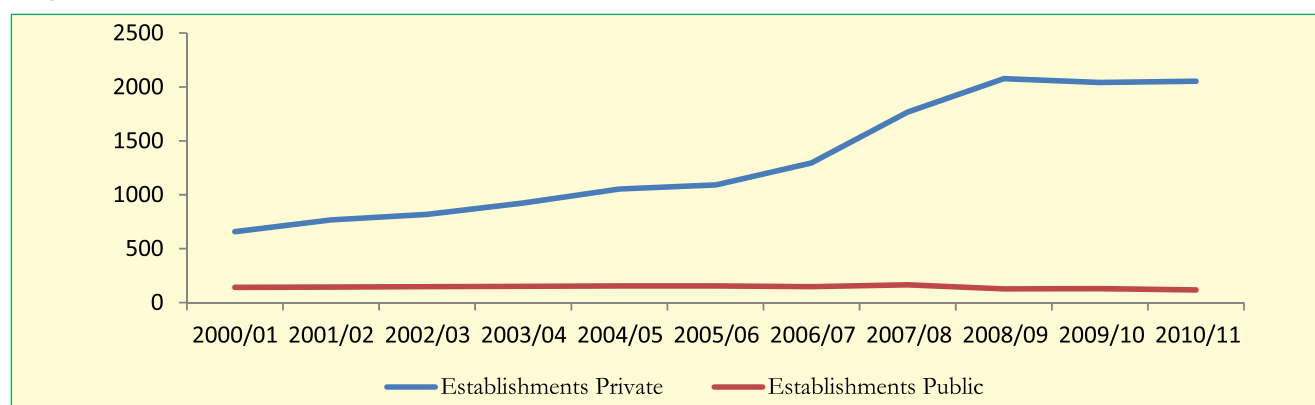
Source: CSA

<sup>4</sup>Foreign direct investment has increased in recent years: increased from 15% in 2010/11 to 16.5% of total license projects in 2011/12. Of the total licensed foreign investors, only 1.5% was operational in 2010/11, indicating low conversion rate.

The trends in output and employment shares are reflected in the number of establishments (Figure 1.9). While the number of private establishments grew by 12% between 2000/01 and 2010/11, the number of public establishments declined from 143 in 2000/01 to 129 in 2010/11. The number of private establishments increased at

a decreasing rate between 2000/01 and 2005/6; it increased at an increasing rate between 2006/07 and 2008/9. Between 2009/10 and 2010/11, the number of private establishments increased at a decreasing rate.

**Figure 1.9: Private and public establishments (number)**

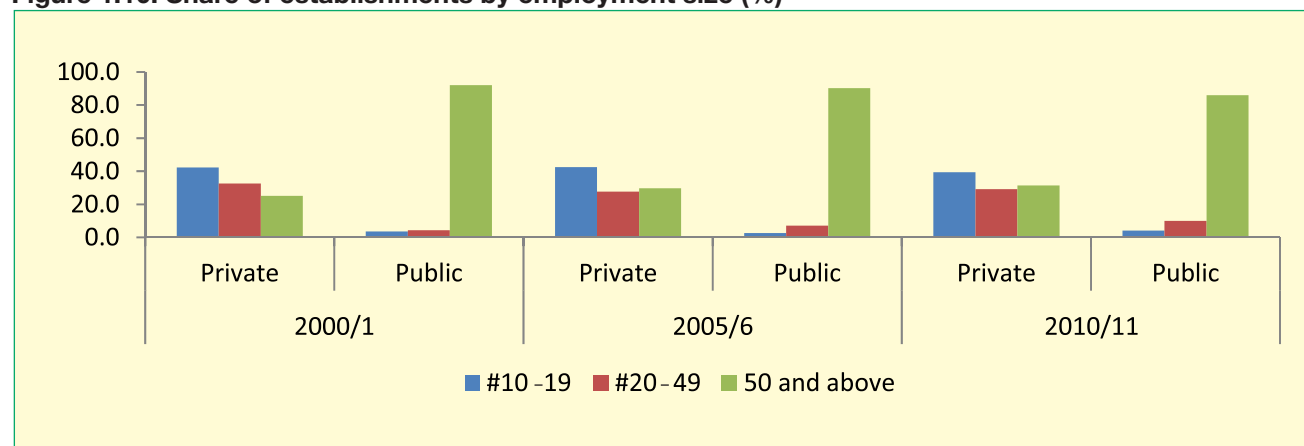


Source: CSA

The distribution of firm sizes within an industry is typically highly skewed with a few large firms and a large number of small and medium-sized enterprises. In Ethiopia, these stylized facts do not hold: within the private sector in 2010/11, there were actually more large firms (over 50 employees) than medium-sized firms (20-49 employees). In fact, the share of private establishments that employ 50 and more workers increased from 25% of total private establishments in 2000/01 to 31% in 2010/11. Moreover, there was an even more surprising decline in the number of smaller firms: in

2000/01, private manufacturing establishments that employed between 10 and 19 workers accounted for about 42.3% of total number of private establishments; by 2010/11, this share had declined to 39.4%. This seems consistent with the “missing middle” hypothesis, which holds that institutional factors in Sub-Saharan Africa result in a bifurcation of firm sizes into large and small, with an under-representation of medium-sized firms. Public firms were all large (Figure 1.10).

**Figure 1.10: Share of establishments by employment size (%)**



Source: CSA

## 1.2.2.3 Composition of Manufacturing by Subsector

As for the composition of the manufacturing sector, food and beverages constituted the largest proportion of the overall large and medium manufacturing value added between 2000/01 and

2010/11 (Table 1.5). However, the value added share of food and beverages industries declined from 50.9% to 32.5% in 2009/10. The share of chemical and chemical products meanwhile showed an increasing trend in value added share.



**Table 1.5: Share of value added of manufacturing subsectors (%)**

Sector	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Food and Beverages	50.9	45.4	46.9	45.0	41.9	40.3	36.5	38.5	37.2	32.5	47.3
Non-Metallic Minerals	8.6	9.7	13.7	12.5	8.9	15.7	22.1	23.2	16.4	10.5	16.9
Chemicals	4.6	5.3	5.7	6.7	5.4	4.8	4.9	6.0	8.9	10.1	10.7
Tanning and Leather	4.8	6.8	4.4	5.0	4.5	4.4	3.1	4.4	2.9	2.9	7.7
Rubber and Plastic	5.7	6.1	6.0	6.2	5.5	8.9	4.6	4.5	5.9	9.2	6.1
Paper and Printing	5.9	6.6	5.5	6.2	7.9	5.3	5.5	5.4	5.7	6.1	5.9
Basic Iron and Steel	2.0	3.1	2.4	3.7	7.9	3.9	2.9	2.5	3.4	1.9	4.2
Furniture	1.6	2.0	2.3	2.0	3.6	2.4	2.1	2.1	2.4	4.9	2.4
Tobacco	2.8	4.1	3.5	5.3	3.4	3.7	2.9	3.6	4.9	-0.2	1.8
Textiles	5.9	4.9	4.1	4.2	5.8	3.4	4.2	1.5	4.9	7.8	1.6
Vehicles	4.3	2.5	1.6	-1.2	0.5	2.4	4.0	2.4	1.6	2.9	1.3
Apparel	0.6	0.6	0.9	0.7	0.5	0.6	1.2	1.2	0.9	2.1	1.2
Wood Products	0.7	0.8	1.0	0.8	0.9	0.8	0.7	0.7	0.4	0.1	0.9
Machinery and Equipment	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.6	0.5
Fabricated Metal Products	1.6	2.0	1.9	2.7	3.4	3.0	5.5	3.9	4.6	8.6	-8.5
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: CSA

The share of employment in food and beverages increased from 29.1% in 2000/01 to 38.7% in 2010/11 (Table 1.6). Similarly, the employment share of rubber and plastic and other non-metallic mineral manufacturing industries increased in 2010/11. The

employment share of tanning and dressing of leather slightly increased in 2010/11. However, the textile industries experienced a significant decline in employment share: from 25.3% in 2000/01 to 7.7% in 2010/11.

**Table 1.6: Trends in employment (% of total manufacturing employment)**

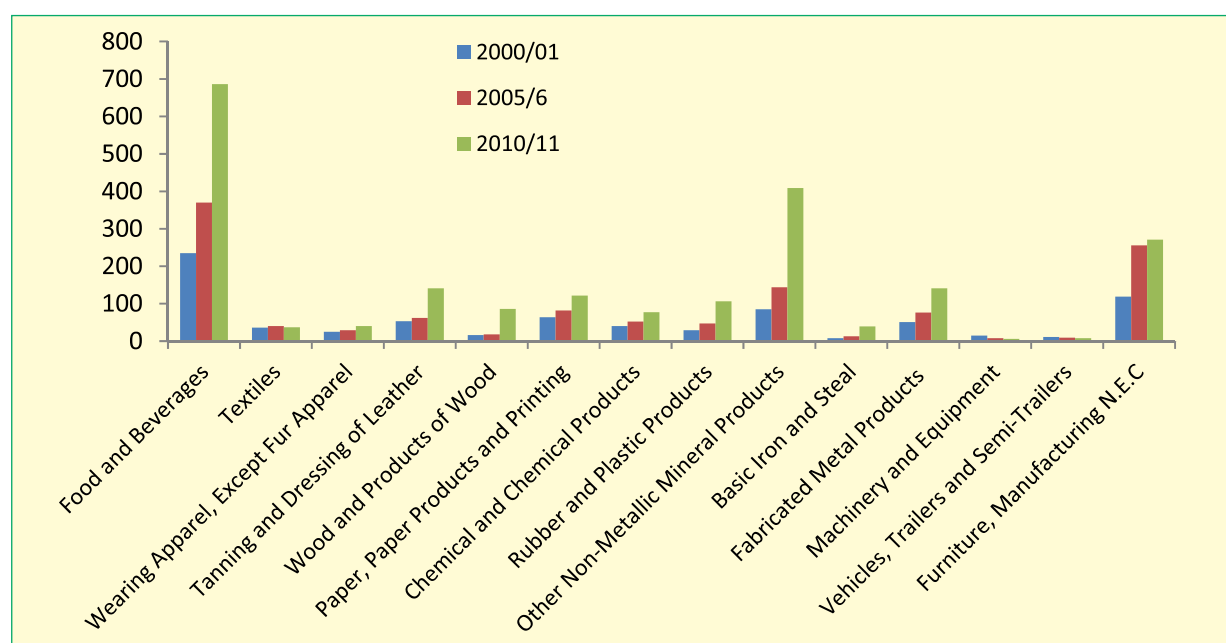
Sector	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Food and Beverages	29.1	29.4	30.1	29.8	29.0	30.1	28.6	31.3	30.2	32.5	38.7
Non-Metallic Minerals	8.0	8.4	7.7	8.7	8.3	8.5	8.9	12.8	13.3	10.5	9.9
Tanning and Leather	7.5	6.8	7.1	7.3	7.2	6.7	6.7	6.5	5.9	5.8	8.1
Textiles	25.8	22.6	21.6	21.7	19.0	18.7	17.4	9.2	12.1	11.6	7.7
Rubber and Plastic	3.6	4.4	4.4	4.2	5.2	5.8	6.1	6.6	8.0	7.5	6.3
Paper and Printing	5.9	6.2	6.3	6.6	6.9	6.8	6.6	6.8	5.9	5.4	5.8
Chemicals	4.3	5.1	5.0	4.8	5.5	4.8	5.6	5.9	5.4	6.0	5.6
Furniture	4.6	5.4	5.0	4.9	8.0	4.8	4.6	5.4	5.3	4.5	3.7
Fabricated Metal Prod.	2.8	2.8	3.4	3.3	3.5	4.9	2.8	3.9	4.0	5.4	3.5
Apparel	4.0	3.8	4.2	3.6	2.4	3.5	6.1	5.8	5.2	5.0	3.3
Basic Iron and Steel	1.2	1.5	1.4	1.6	1.6	1.8	1.5	1.0	1.1	2.2	2.8
Wood Products	1.1	1.3	1.6	1.5	1.4	1.5	1.6	2.4	1.4	1.8	2.3
Vehicles	1.1	1.1	1.0	1.1	1.1	1.2	2.5	1.3	1.1	0.9	0.9
Tobacco	0.9	0.8	0.8	0.7	0.6	0.6	0.6	1.0	0.8	0.5	0.8
Machinery & Equipment	0.2	0.2	0.2	0.2	0.2	0.3	0.1	0.2	0.1	0.5	0.4
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: CSA

A look at the subsectors indicates that all subsectors except textiles, manufacture of motor vehicles, (semi-) trailers and manufacture of machinery and equipment n.e.c. showed large increase in the number of establishments (Figure 1.11). This is

encouraging in terms of manufacturing development and of diversification as new manufacturing activity seemed to have emerged in recent years.

**Figure 1.11: Number of manufacturing establishments by subsector (private and public) (Number)**

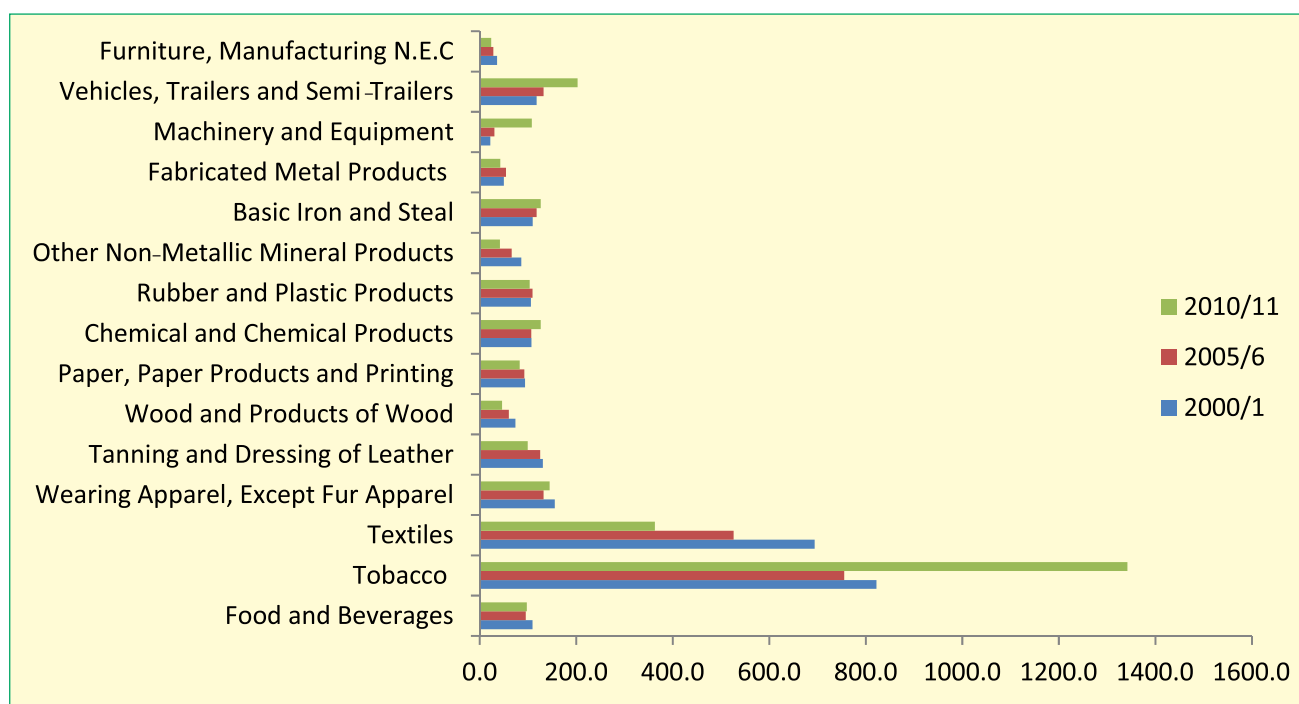


Source: Compiled from CSA data

Consistent with the overall trend in the manufacturing sector, the majority of manufacturing subsectors show a declining employment per firm. Only a few manufacturing subsectors (e.g. chemicals, basic iron and steel, machinery and equipment and

vehicles, trailers and semi-trailers) showed a rise in the average number of employees per firm. It points to the fact that the manufacturing industry is dominated by firms that employ fewer workers.

**Figure 1.12: Manufacturing employment per firm (number)**



Source: Compiled from CSA data



Large and medium manufacturing firms also generate foreign exchange earnings for the country. In particular, the contribution of tanning and dressing of leather to export earnings has remained significant. Exports of tanning and dressing of leather products accounted for more than half of the total sales value between 2000/01 and 2010/11 (Table 1.7). The share of exports of textiles

also increased from 11.5% of sales value in 2000/01 to 14.4% in 2010/11. The types of manufacturing export products increased in 2010/11, indicating emergence of some degree of diversification within the manufacturing industry. Despite this encouraging trend, many of the large and medium manufacturing firms target the local market, with limited integration into global market.

**Table 1.7: Share of exports in total sales value (%)**

	2000/01	2005/6	2010/11
Food and Beverages	6.30	11.58	5.47
Tobacco	0.00	0.00	0.47
Textiles	11.50	10.49	14.37
Wearing Apparel, Except Fur Apparel	2.21	1.05	3.58
Tanning and Dressing of Leather	58.68	60.09	52.36
Wood and Products of Wood	0.00	0.00	0.00
Paper, Paper Products and Printing	0.00	0.00	0.00
Chemical and Chemical Products	0.00	0.00	3.12
Rubber and Plastic Products	0.00	0.00	12.17
Other Non-Metallic Mineral Products	0.14	0.83	0.55
Basic Iron and Steel	0.00	0.00	1.29
Fabricated Metal Products	0.00	0.18	0.02
Machinery and Equipment	0.00	0.00	0.00
Vehicles, Trailers and Semi-Trailers	0.00	0.00	0.00
Furniture, Manufacturing n.e.c.	0.00	0.89	0.00

Source: CSA (Large and medium-scale manufacturing industries survey)

#### 1.2.2.4 Identification of Selected Key Manufacturing Subsectors

The GTP identifies the following manufacturing industries to be of particular importance to the realization of the growth and transformation goals (MoFED, 2010):

1. Textile and garment industry;
2. Leather and leather products industry;
3. Sugar and sugar related industries;
4. Cement industry;
5. Metal and engineering industry;
6. Chemical industry;
7. Pharmaceutical industry; and
8. Agro-processing industry.

These eight manufacturing subsectors identified as the focus subsectors by the Government of Ethiopia have shown tremendous expansion in recent years and offer immense growth potential including through backward linkages to Ethiopia's primary sector. The output, employment and export contribution of these

manufacturing subsectors are also significant. Table 1.8 presents a description of some of the characteristics of these strategic manufacturing subsectors in terms of key products, types and sources of raw materials.

A variety of manufactured products are produced by the key subsectors of the manufacturing sector. These subsectors use both local and imported raw materials, and these subsectors vary in terms of their dependence on sources of raw materials. While agro-processing such as food and beverages largely uses local inputs, subsectors such as metal, chemical and pharmaceutical heavily depend imported inputs. It should be noted that the various manufacturing subsectors are dependent on each other. For instance, the leather, textile and metal industries use chemicals which are produced by the chemical industry. Some of the imported raw materials, especially agricultural inputs could have been sourced domestically, but the agricultural sector could not produce in sufficient quantity and quality to meet the input demand for the manufacturing industry.



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**Table 1.8: Description of strategic manufacturing subsectors**

	Industry	Key products	Main raw materials	Sources of raw materials		Remark
				Local	Imported	
1	Food and beverages	Meat	Cattle	x		
		Milk Pasteurized	Pulses	x		
		Oil Cakes	Vegetables	x	x	
		Flour	Flour	x	x	
		Macaroni and Pasta	Wheat	x	x	
			Maize	x		
		Animal Feed	Milk	x		Milk powder is imported
		Beer, wine, other alcohols	Orange	x	x	
			Hops		x	
			Malt	x	x	
			Barley	x		
			Tea leaves	x		
2	Textiles	Cotton Fabrics	Raw cotton	x	x	
		Acrylic Yarn	Cotton yarn	x	x	
		Cotton Yarn	Fabrics	x	x	
		Blanket	Fibre	x	x	
		Bed sheet	Cotton (lint)	x		
		Wearing Apparel	Nylon yarn	x	x	
		Sweater	Chemical dyestuff	x	x	
		Sewing Thread				
		Leather and footwear	Leather Shoes and Boots	x		
			Canvas and Rubber Shoes	x	x	
3	Leather and footwear	Plastic Footwear	Leather garment	x		
		Sole (Leather and Plastic)	Plastic sole	x	x	Plastic sole is mainly imported
			Chemicals	x	x	
4	Sugar and sugar related industries	Sugar	Sugar cane	x		
		Molasses	Sugar	x	x	
			Molasses	x		
			Sugar beet	x		
5	Cement industry	Cement	Cement	x	x	
		Cement Blocks	Clay	x		
		Cement Floor Tiles	Gravel	x	x	
		Bricks of Clay	Gypsum	x	x	
		Cement Tubes	Lime stone	x		
			Pumice	x	x	
6	Metal and engineering industry	Iron Bars	Aluminum	x	x	Largely imported
		Wires	Galvanized coils		x	
		Nails	Iron bars	x		
		Iron Sheets	Steel sheets	x	x	Largely imported
		Motor Vehicle Spring	Wire rod		x	
		Metallic Door	Chemicals for metal		x	
7	Chemical industry	Soap	Paraffin		x	



	Industry	Key products	Main raw materials	Sources of raw materials		Remark
				Local	Imported	
		Oxygen	Caustic soda	x	x	Largely imported
		Paints	Natural and synthetic rubber	x		
		Vaseline	Polyethylene	x	x	
		Tyres				
		Polyethylene Products				
8	Pharmaceutical industry	Tablets	Sodium compound	x	x	
		Capsules	Paraffin		x	
		Antibiotics	Polyether polyol		x	
		Syrup				
		Injection of 100 A				

Note: 'x' indicates sources of raw materials.  
Source: Compiled from CSA data on medium and large manufacturing survey

Table 1.9 and Table 1.10 provide costs of raw materials for private and public manufacturing subsectors. In 2000/1, private manufacturing subsectors sourced 60% of their total raw materials domestically, compared with 55% of public manufacturing industries. However, the use of local inputs declined in 2010/11: 53.5% for private and 47.6% for public, indicating that these strategic manufacturing industries have become increasingly dependent on imported inputs. Manufacturing industries such as food and beverages, textiles, apparel, tanning and dressing of leather, etc. largely use local raw materials and have strong linkages with the rest of the domestic economy.

The implications of sourcing inputs from abroad are complex. On the one hand, firms that are able to access foreign inputs are able to improve the quality of their own products. On the other hand, upstream linkages within the economy are weakened and firms are vulnerable to world price fluctuations. On balance, the evidence suggests that greater ability to source inputs internationally favourably impacts a firm's ability to sell internationally. The available evidence thus indicates that Ethiopia is gradually deepening its trade integration, which is a positive indicator of growing international competitiveness.

**Table 1.9: Share of cost of raw materials for private manufacturing subsectors (%)**

	2000/01		2005/6		2010/11	
	Local	Imported	Local	Imported	Local	Imported
Food and Beverages	76.9	23.1	80.2	19.8	76.7	23.3
Tobacco	-	-	-	-	-	-
Textiles	85.6	14.4	39.9	60.1	51.5	48.5
Wearing Apparel, Except Fur Apparel	90.5	9.5	71.4	28.6	66.7	33.3
Tanning and Dressing of Leather	77.3	22.7	76.6	23.4	70.4	29.6
Wood and Products of Wood	98.7	1.3	96.9	3.1	62.3	37.7
Paper, Paper Products and Printing	48.3	51.7	11.8	88.2	16.2	83.8
Chemical and Chemical Products	25.0	75.0	19.9	80.1	23.9	76.1
Rubber and Plastic Products	3.0	97.0	7.0	93.0	6.6	93.4
Other Non-Metallic Mineral Products	95.3	4.7	82.4	17.6	70.1	29.9
Basic Iron and Steel	0.5	99.5	40.9	59.1	23.5	76.5
Fabricated Metal Products	13.3	86.7	12.8	87.2	48.8	51.2
Machinery and Equipment	59.5	40.5	0.3	99.7	13.0	87.0
Vehicles, Trailers and Semi-Trailers	5.4	94.6	6.0	94.0	11.1	88.9
Furniture, Manufacturing n.e.c.	65.3	34.7	50.2	50.2	63.7	36.3
<b>Total</b>	<b>59.7</b>	<b>40.3</b>	<b>50.0</b>	<b>50.0</b>	<b>53.5</b>	<b>46.5</b>

Source: CSA

**Table 1.10: Share of cost of raw materials for public manufacturing subsectors (% of total raw material cost)**

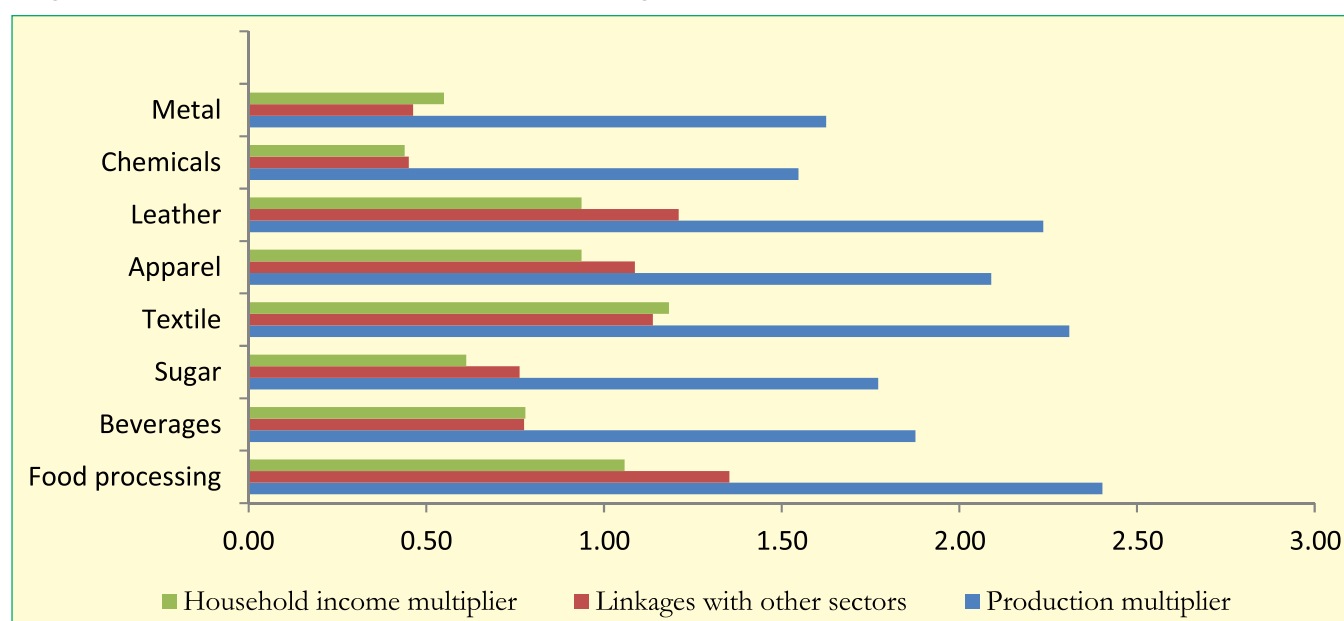
	2000/01		2005/6		2010/11	
	Local	Imported	Local	Imported	Local	Imported
Food and Beverages	83.3	16.7	78.0	22.0	54.6	45.4
Tobacco	27.4	72.6	17.6	82.4	46.7	53.3
Textiles	72.2	27.8	79.6	20.4	96.7	3.3
Wearing Apparel, Except Fur Apparel	96.8	3.2	40.1	59.9	65.9	34.1
Tanning and Dressing of Leather	85.5	14.5	87.0	13.0	72.0	28.0
Wood and Products of Wood	32.9	67.1	47.2	52.8	46.3	53.7
Paper, Paper Products and Printing	37.1	62.9	28.2	71.8	47.7	52.3
Chemical and Chemical Products	22.6	77.4	11.0	89.0	8.9	91.1
Rubber and Plastic Products	4.1	95.9	11.2	88.8	8.7	91.3
Other Non-Metallic Mineral Products	76.2	23.8	97.6	2.4	88.9	11.1
Basic Iron and Steel	2.2	97.8	5.2	94.8	8.8	91.2
Fabricated Metal Products	12.0	88.0	0.6	99.4	0.0	100.0
Machinery and Equipment	0.0	0.0	0.0	0.0	0.0	0.0
Vehicles, Trailers and Semi-Trailers	15.9	84.1	4.8	95.2	93.7	6.3
Furniture, Manufacturing n.e.c.	53.7	46.3	81.4	18.6	81.0	19.0
<b>Total</b>	<b>55.3</b>	<b>44.7</b>	<b>49.7</b>	<b>50.3</b>	<b>47.6</b>	<b>52.4</b>

Source: CSA

Note that economic transformation involves industrial development to increase agricultural productivity which in turn provides agricultural feedstock for downstream industrial development. In order to quantify the size of linkages of the manufacturing subsectors, a social accounting matrix (SAM) constructed by the Ethiopian Development Research Institute (EDRI) has been used. Manufacturing subsectors that depend mainly on local input tend to have larger output and income multiplier effects (Figure 1.13). In particular, resource-intensive manufacturing subsectors such as

food processing, textiles and leather not only have large output multiplier effects compared with other subsectors but also strong linkages with the rest of the domestic economy. On other hand, subsectors that use largely imported inputs such as metals and chemicals tend to have weak linkages with the rest of the domestic economy. Hence, expansion of subsectors that have strong induced effects is expected to exert stronger stimulus to other sectors and the economy at large.

**Figure 1.13: Multipliers of selected manufacturing subsectors**



Source: Computed from the EDRI (2009) SAM

### 1.3 Estimate of competitiveness and comparative advantage

Competitiveness and comparative advantage are distinct concepts: the former assesses whether a country can compete in global markets, given its export structure, local costs, and its exchange rate; the latter assesses which sectors in an economy are more efficient relative to other sectors in the same economy. Accordingly, competitiveness involves international comparisons while comparative advantage involves domestic comparisons across industries.

Different approaches have been employed in the economic literature to measure competitiveness or comparative advantage of a firm or an industry, including measures such as unit labour cost (ULC), total unit cost, revealed comparative advantage, etc. Costs, as the fundamental determinants of a firm's competitiveness, and the cost structure of local industries compared with their competitors, determine the extent of competitiveness in the domestic and international markets. In particular, ULC measures the cost of labour per unit of output, which is computed as the ratio of total labour cost to the value of output. Alternatively, ULC can also be defined as labour compensation per person employed relative to output per employed person.

The total unit cost approach, or simply unit cost (UC) approach, takes into account other costs such as transport costs, cost of capital including labour cost to gauge competitiveness. This approach also requires information on detailed cost structures of competitors. Although competitors' data on cost structure are hardly available, foreign cost data can be replaced by the free-trade prices of imports at the point of entry (i.e., the border price). Hence to be competitive a firm should have a UC at least equal to a similar firm amongst its competitors. The competitiveness criterion can be expressed as:  $UC \leq UC^C$ , where  $UC^C$  represents the competitor's unit cost.

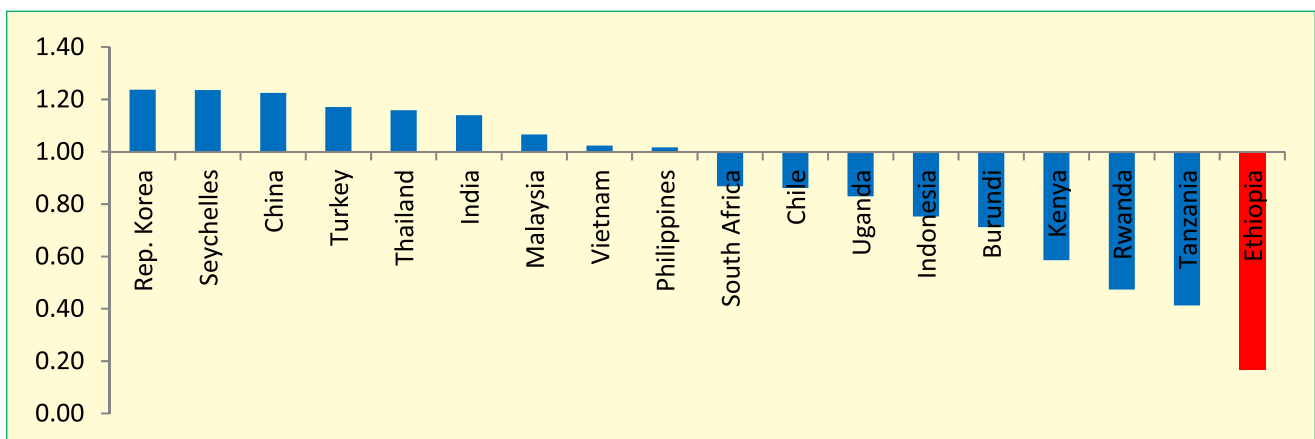
#### 1.3.1 Overall Competitiveness of the Manufacturing Sector

Labour productivity is key for improved competitiveness and for increased welfare (Smith, 1776); in the long-run, labour productivity is almost everything (Krugman, 1994). Looking at the manufacturing sector as a whole, labour productivity of the manufacturing sector grew in real terms by 3.3% per annum over the period 2001/02 to 2010/11, as documented above. Because of the real appreciation of the Ethiopian currency over this period, labour productivity grew even faster in current USD terms, at 5.7% per annum.

Similarly, average labour compensation increased at rate of 15.7% per year in nominal terms over the same period. Although both average labour compensation and labour productivity have shown an increasing trend, the former grew faster than the latter. Accordingly, unit labour cost, an indicator of competitiveness, increased from 0.15 in 2001/02 to 0.22 in 2010/11, at annual average rate of 5.4%, indicating a disappointing performance of the manufacturing sector in terms of labour cost competitiveness.

This did not serve to create comparative advantage for Ethiopia in manufacturing. Examining Ethiopia's revealed comparative advantage (RCA) in manufacturing, it can be seen that Ethiopia has a significant comparative disadvantage in manufacturing (an RCA below one, and lower than peer competitors in Eastern Africa, as shown in Figure 1.14). Moreover, Ethiopia's manufacturing RCA declined from 0.22 in 2001 to 0.17 in 2012, suggesting that the development of other export sectors (agriculture, mining and services) was stronger, thereby supporting a higher exchange rate and undermining the manufacturing sector's ability to compete in world markets.

**Figure 1.14: Revealed comparative advantage of the country's manufacturing sector compared to World, for Ethiopia and comparator countries, 2012**



Source: Computed based data from International Trade Centre's TradeMap

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Given these circumstances, achieving manufacturing competitiveness in export markets requires addressing other factors such as infrastructural deficiencies, limited access to finance, quality issues, regulatory burdens, etc. that inhibit manufacturing export competitiveness (see Section 2.3 for details on these issues).

## 1.3.2 Competitiveness of the Manufacturing Subsectors

Unit labour costs vary among manufacturing subsectors, and fell in

the majority of manufacturing subsectors (Table 1.11). Unit labour cost declined substantially in industries where productivity rose, as productivity gains offset increases in labour compensation. Unit labour cost grew by about 0.78% per year in sugar and confectionary industry due to sluggish improvement in labour productivity when labour compensation surges. Although lower labour cost remains important for competitiveness, other costs such as energy, logistics, etc. also influence manufacturing competitiveness.

**Table 1.11: Trends in unit labour cost for selected manufacturing subsectors**

	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	Percent annual change (2001/02- 2010/11)
Food and Beverage products excluding sugar and sugar related industry	0.19	0.20	0.18	0.17	0.18	0.14	0.14	0.13	0.17	0.11	-4.9
Sugar & sugar confectionery	0.15	0.10	0.11	0.13	0.14	0.18	0.19	0.26	0.10	0.09	0.78
Textile	0.62	0.57	0.62	0.44	0.58	0.40	0.44	0.29	0.23	0.53	-7.1
Wearing Apparel, except fur	0.82	0.67	0.60	0.52	0.83	0.63	0.64	0.81	0.43	0.31	-6.2
Leather ; Footwear, Luggage, Handbags	0.32	0.39	0.29	0.38	0.30	0.28	0.24	0.31	0.30	0.15	-5.83
Chemical and chemical products excluding pharmaceutical industry	0.20	0.22	0.20	0.19	0.20	0.24	0.17	0.11	0.12	0.12	-7.6
Pharmaceuticals, medicinal chemicals & botanical products	0.31	0.27	0.14	0.38	0.28	0.25	0.35	0.16	0.25	0.10	-6.73
Cement, lime and plaster	0.11	0.10	0.95	0.87	1.01	0.81	0.06	0.08	0.09	0.06	-16.6
Basic iron and steel	0.14	0.19	0.11	0.08	0.10	0.09	0.10	0.15	0.15	0.12	-0.15

Source: Computed from CSA data on Large and Medium manufacturing surveys

The competitiveness of the manufacturing industry can also be assessed by taking all costs into account. Accordingly, a manufacturing industry is competitive or having cost advantage over its competitor if its unit cost (ratio of total cost to output) is less than unity. Table 1.12 and Table 1.13 provide results for manufacturing competitiveness under two scenarios: with protection (i.e. domestic competitiveness) and without protection (i.e. international competitiveness). There is substantial heterogeneity among the various manufacturing sub-sectors in terms of their cost competitiveness. With the exception of textiles and wearing apparel, the majority of the manufacturing subsectors

have shown, on average, improved cost competitiveness under protection, i.e. tariffs provide a shield against foreign competitions. In 2010/11, wearing apparel improved its cost competitiveness with protection. A different picture has been observed under international competition. In 2010/11, for instance, four manufacturing subsectors (e.g. food and beverages, textiles, leather, and chemicals) were uncompetitive, i.e. these manufacturing industries could not compete without tariff protection. Clearly, Ethiopia is lacking in comparative advantage even in some of the priority industries, such as textiles, leather, food and beverages, and chemical sub-sectors.

**Table 1.12: Domestic competitiveness indicator for selected manufacturing subsectors (Long-run)**

Industrial Group	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	Simple average
Food and Beverage products	0.910	0.917	0.899	0.889	0.895	0.861	0.874	0.828	0.949	0.800	0.882
Sugar & sugar confectionery	0.714	0.599	0.630	0.716	0.723	0.750	0.767	0.927	0.464	0.390	0.668
Textile	1.147	1.111	1.110	1.009	1.086	0.988	1.059	0.901	0.855	1.023	1.029
Wearing Apparel, except fur	1.127	1.039	1.052	1.011	1.124	1.115	1.083	1.220	1.000	0.652	1.042
Leather ; Footwear, Luggage, Handbags	0.947	0.992	0.955	0.984	0.964	0.984	0.924	0.953	0.962	0.755	0.942
Chemical and chemical products excluding pharmaceutical industries	0.938	0.891	0.859	0.915	0.912	0.907	0.883	0.800	0.826	0.782	0.871
Pharmaceuticals, medicinal chemicals & botanical products	1.038	0.815	0.691	0.911	0.839	0.812	0.860	0.691	0.795	0.480	0.793
Cement, lime and plaster	0.772	0.803	0.820	0.905	0.740	0.610	0.585	0.698	0.535	0.681	0.715
Basic iron and steel	0.913	0.925	0.941	0.838	0.946	0.946	0.902	0.853	0.970	0.868	0.910

Source: Calculated based on CSA data



**Table 1.13: International competitiveness indicator for selected manufacturing subsectors (Longrun)**

Industrial Group	2001/ 02	2002/ 03	2003/ 04	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	Simple average
Food and Beverage products excluding sugar and sugar related industry	1.217	1.217	1.198	1.200	1.209	1.161	1.171	1.095	1.246	1.053	1.177
Sugar & sugar confectionery	0.750	0.629	0.662	0.752	0.759	0.787	0.805	0.974	0.487	0.409	0.701
Textile	1.272	1.231	1.228	1.118	1.199	1.095	1.166	0.999	1.155	1.381	1.184
Wearing Apparel, except fur	1.578	1.455	1.473	1.416	1.574	1.561	1.517	1.708	1.401	0.912	1.459
Leather ; Footwear, Luggage, Handbags	1.254	1.313	1.267	1.303	1.281	1.305	1.229	1.276	1.299	1.019	1.255
Chemical and chemical products excluding pharmaceutical industries	1.155	1.155	1.171	1.168	1.194	1.191	1.138	1.048	1.034	1.141	1.140
Pharmaceuticals, medicinal chemicals & botanical products	1.090	0.856	0.726	0.956	0.881	0.853	0.903	0.726	0.835	0.504	0.833
Cement, lime and plaster	1.081	1.125	1.148	1.267	1.036	0.854	0.819	0.978	0.589	0.749	0.964
Basic iron and steel	0.958	0.971	0.988	0.880	0.994	0.994	0.947	0.896	1.018	0.911	0.956

Source: Calculated based on CSA data

In terms of export competitiveness, the majority of manufacturing subsectors are not competitive as reflected by RCA index of less than one (Table 1.14). The only exception is the leather and footwear which has remained competitive though its global competitiveness has shown a declining trend. Although the food and beverage subsector has an RCA of greater than one in most of

years, the export competitiveness position of this subsector has deteriorated in recent years. Thus the manufacturing sector does not have a cost advantage and remained uncompetitive in the export market, and this requires an investigation of the essential (dis)enablers for the sector.

**Table 1.14: Revealed comparative advantage for selected manufactured products**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Textiles/World (ISC 17)	0.80	0.70	1.28	0.90	0.37	0.65	0.87	0.61	0.58	0.56	0.79	0.49
Apparel (Garment)/World (ISC 18)	0.07	0.02	0.01	0.17	0.12	0.08	0.07	0.14	0.07	0.26	0.56	0.42
Leather and footwear/World (ISC 19)	5.72	6.41	5.00	1.05	3.62	4.85	5.69	4.40	2.64	2.90	4.52	2.14
Chemicals/World (ISC 124 exd. 2423)	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.02	0.04	0.02	0.03	0.02
Metals/World (ISC 27 & 28)	0.18	0.13	0.00	1.56	0.64	0.74	0.55	0.62	0.77	1.02	0.57	0.54
Cement/World (ISC 2694)	0.00	0.10	0.19	0.13	0.99	0.03	0.00	0.00	0.00	0.00	0.02	0.04
Pharmaceuticals/World (ISC 2423)	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.05	0.01	0.02	0.02	0.01
Food and beverages/World (ISC 15)	0.93	1.42	1.13	3.11	9.21	9.17	1.21	1.23	0.66	0.61	0.78	0.52
Sugar/World (ISC 1542 & 1543)	0.93	12.49	7.47	0.49	3.79	0.53	4.29	2.81	2.09	0.00	0.00	0.00
Food and bev. exd. Sugar/World (ISC 15 exd. 1542 & 1543)	0.93	0.42	0.56	3.08	9.33	9.89	0.95	1.10	0.52	0.67	0.86	0.56

Source: International Trade Centre's TradeMap.







## 2. EXPLAINING COMPETITIVENESS AND COMPARATIVE ADVANTAGE

### 2.1 (Dis)enablers for the Manufacturing Industry

#### 2.1.1 Overview

Ethiopia like the emerging industrialized countries is becoming increasingly aware that building a robust and competitive economic structure crucially depends on a strong manufacturing sector. Despite having made remarkable progress, Ethiopia's development has been tested on multiple fronts: world price fluctuation of key primary export items, dependence on subsistence agriculture, increased climate vulnerability, etc. The contribution of the manufacturing sector to output, employment and export has been disappointing. This can be attributed to a variety of factors. The questions are: What have been the key constraints (e.g., regulatory, resources, institutions, etc.) on the manufacturing sector? What incentives have been provided to the sector?

#### 2.1.2 Legal and Regulatory Environment

The Constitution of the Federal Democratic Republic of Ethiopia, adopted in 1995, is the supreme law; it overrides all other legislation in the country. The Constitution, in accordance with Article 40, ensures the right of every citizen to the ownership of private property, including the right to acquire, use and dispose of such property. The legal framework for undertaking business activities in Ethiopia is articulated in the Commercial Code of 1960. The Investment Proclamation of 2002, as amended in 2003, and the Regulations on Investment Incentives and Investment Areas Reserved for Domestic Investors of 2003, as amended in 2008 and 2012 constitute the main legal framework for both foreign and domestic investment in Ethiopia.

There is no proclamation exclusively addressing manufacturing; however, the revised investment proclamation (Proclamation No. 769/2012) focuses on promotion and expansion of the manufacturing sector. In addition, the revised investment proclamation provides guarantees in respect of expropriation and nationalization of investments: such may only occur under court order, when required on public interest grounds, and in conformity with the requirement that the government provides adequate compensation corresponding to the prevailing market value of the property and that such payment be effected promptly.

Moreover, any foreign investor has the right, in respect of an approved investment, to remit profits and dividends accruing from the investment, principal and interest payments on external loans, and payments related to a technology transfer agreement out of Ethiopia in convertible foreign currency at the prevailing rate of exchange on the date of remittance. Expatriates employed in an enterprise can also remit, in convertible foreign currency, salaries and other payments accruing from their employment in accordance with the foreign exchange regulations or directives of the country.

From the international perspective, Ethiopia is a member of the Multilateral Investment Guarantee Agency (MIGA), which issues guarantees against non-commercial risks to enterprises that invest in signatory countries. Moreover, Ethiopia has signed the Convention on the Settlement of Investment Disputes between States and Nationals of Other States (ICSID Convention) that provides facilities for conciliation and arbitration of investment disputes between Contracting States and nationals of other Contracting States. The country also has currently concluded a number of bilateral investment and double taxation avoidance treaties.

#### 2.1.3 Industrial, Innovation and Manufacturing Sector Policies

The Ethiopian government designed an industrial development strategy (IDS) in 2003/04 which reflects an explicit focus on, and strong government commitment to, industrial development and transformation, and which recognizes the importance of a robust and competitive manufacturing sector. The strategy outlines the priority areas and mechanisms of interventions to hasten the development of the industrial sector. The main premise of the strategy is promotion of industries that have strong linkages with other sectors of the economy, especially with the agricultural sector (i.e. agro-processing) and that are labour-intensive. Specifically, the strategy focuses on selected manufacturing activities such as textiles (garment industry), meat, leather and leather products, which generate substantial stimulus for the economy on account of their strong linkages with the domestic economy, and in which Ethiopia has a relatively high degree of comparative advantage.

Drawing on the experiences of some selected Asian countries (e.g., Taiwan and Korea), the Ethiopian government has also focused on export-led industrialization. In so doing, due emphasis has been placed on high-value agriculture (e.g., horticulture) and agro-processing industries (e.g., leather products). In addition, a similar focus has also been given to import-substituting industries.

The IDS identifies priority areas and mechanisms of intervention to hasten the development of the industrial sector. The IDS recognizes both the crucial role of the private sector as the engine of transformation and the proactive role of the state as a developmental state to support and guide the private sector in terms of creating marketing networks, offering technological access, and infrastructure development, e.g., roads, energy, etc. (Yusuf et al., 2013). The GTP also envisages ensuring faster and sustained development of the industrial sector and enabling the sector to gradually play a key role in the economy. In this plan, particular emphasis is given to encourage the private sector to invest in labour-intensive, export-oriented as well as import substituting industries that link manufacturing and agricultural sectors.

Both the IDS and GTP outline a number of measures to encourage private sector participation in the economy in general and in the



manufacturing sector in particular. These include, among others, the following:

- easing of licensing requirements and regulations;
- enactment of an investment code, which upon successive revisions has opened up a wider range of economic activities both for domestic and foreign investors, and is accompanied by investment incentives in the form of tax holidays, duty free importation of investment goods, etc.; and
- establishment of sector-specific capacity building initiatives such as the Leather Industry Development Institute, the Textile Industry Development Institute, etc.

To encourage the transfer of science and technology, Investment Proclamation No. 769/2012 as well as the preceding proclamations and regulations encourage investment by ensuring the availability of necessary complementary resources, including financial capital and knowledge resources, by supporting entrepreneurship development schemes and intellectual property rights protection.

Currently, the Ethiopian government gives due emphasis to the development of the manufacturing sector. Following the establishment of the Ministry of Industry as independent institution, three state Ministers have been appointed to reinforce the development of the manufacturing sector. Each of the three state Ministers work on governance issues with a focus on priority areas such as on textiles and leather, industrial zone development and establishment of special economic zones, and food, beverage and pharmaceutical industries, etc.

The most serious problems in designing and executing industrial strategies are limited or lacking involvement of the business community and the lack of inter-ministerial coordination with key institutions, which together render approved strategies ineffective. Policy implementation is also a big challenge due to shortages of budgetary and human resources and the lack of proper coordinating mechanisms.

## 2.1.4 Incentives for the Manufacturing Sector

To encourage private investment and promote the inflow of foreign capital and technology, the government provides investment incentives to both local and foreign investors depending on the type and location of investment. In particular, Investment Proclamation No. 769/2012 provides an attractive set of incentives, especially for investors in priority sectors.

### 2.1.4.1 Land Allocation

Under the Constitution, land is the property of the State and the peoples of Ethiopia. Urban and rural land is available for investment on lease-hold and rental bases, respectively. In some regions, urban land is also available on a rental basis. Based on Ethiopian Investment Agency investment guidelines, urban land is divided into land for industrial use and land for other activities. Industrial-use land is given much attention by the government and a number of industrial zones with the necessary infrastructural facilities (roads,

electricity, water, and telephone) have been established in the major cities and towns in order to support the country's drive for rapid industrialization. Land in the industrial zones is allocated to investors at fixed prices. Land for export-oriented industries is generally available at concessionary rates.

Pursuant to the Urban Lands Lease Holding Proclamation (Proclamation No. 721/2011), the government has allotted land for manufacturing industries. The proclamation provides benchmark prices of urban lands; these are subject to revision every two years and land lease period. The latter varies by location. For instance, the period of urban land lease for industries is 70 years in Addis Ababa and 80 years in other urban centres. The lease may be renewed upon expiry on the basis of the prevailing benchmark lease price and other requirements. However, the lessee is not entitled to compensation where the lease could not be renewed. Once an urban land lease is permitted, a down payment which is determined in accordance with the prevailing factors of the region or the city administration of not be less than 10% of the total lease amount of the urban land is paid. The remaining balance of the lease amount shall be paid on the basis of equal annual instalments during the payment term. Interest on the land is paid on the remaining balance as per the prevailing interest rate on loans offered by the Commercial Bank of Ethiopia. A lease holder has the right to transfer the leasehold right or to use it as collateral or capital contribution to the extent of the lease amount already paid. Note that the rental value and the lease period of rural land are determined and fixed by land use regulations of each region.

However, discussions with relevant stakeholders indicate that access to land, especially in regions has remained a bottleneck due to, among others, lengthy procedures, inefficient government bureaucracy, lack of understanding of the proclamation, corruption, etc. Despite provisions in the proclamation with regard to access to land for investors in the manufacturing sector, its practical implementation has faced a serious challenge.

### 2.1.4.2 Customs Import Duty

Items imported into Ethiopia are subject to different types of taxes, which are calculated sequentially in the following order: customs duty, excise tax, VAT, surtax, and withholding tax of the cost insurance and freight value (CIF) value of an imported item. However, for investors doing business in the manufacturing sector, as well as in other sectors, the Investment Incentives and Investment Areas Reserved for Domestic Investors Council of Ministers Regulation (Regulation No. 290/2012) provides special incentives related to duty tax and other tax exemptions with certain condition. For investors in the manufacturing activity, a 100% exemption is granted on the payment of import customs duties and other taxes levied on the import of all investment capital goods such as plant machinery and equipment and construction materials. This exemption extends to the import of spare parts worth up to 15% of the value of the imported capital goods within five years from the date of commencement of a project.

The practical implementation of this incentive, as pointed out

stakeholders, has also been challenged by lengthy customs procedures, delays, lack of coordination among relevant government institutions, etc., which together reduce utility of this incentive.

#### 2.1.4.3 Income Tax Exemption

Pursuant to Investment Regulation No. 270/2012, any income derived from an approved new manufacturing investment is exempt from income (profit) tax for a period ranging from 2 to 6 years from the date of the commencement of production or provision of services, depending on the region and the industry in which the investment is made.

The exemption periods are longer in areas outside of Addis Ababa and its peripheries. Various exemption periods apply across sectors: food manufacturing 3 to 5 years; sugar 5 to 6 years; textile and textile products 3 to 5 years; wearing apparel 5 to 6 years; leather and leather products 5 to 6 years; chemical products 2 to 6 years; pharmaceuticals 4 to 6 years; and basic metals 3 to 6 years. If an investor incurs a loss within the period of income tax exemption, such loss may be carried forward following the expiry of the exemption period for a term equal to half of the income exemption period. With regard to investors who are expanding and upgrading their enterprises, additional income generated by the expansion or upgrading is entitled to income tax exemption.

#### 2.1.4.4 Exemption from Payment of Export Customs Duties

Ethiopian products and services destined for export are exempted from the payment of any export tax and other taxes levied on exports with the exception of a few products (e.g., semi-processed hides and skins). The Export Trade Duty Incentive Scheme Establishing Proclamation No. 249/2001 provides three duty incentive schemes: duty drawback, a voucher scheme, and a bonded manufacturing warehouse scheme.

Under the Duty Drawback Scheme, duty paid on raw materials used in the production of commodities is refunded upon exportation of the commodity processed, and on goods re-exported in the same condition for being not in conformity with purchase order specifications, damaged, short delivery or not in market demand. The rate for duty drawback is 95% for re-export goods and 100% for goods exported after processing or use for packing in containers. Vouchers, printed by the Ministry of Finance and Economic Development, may be used as deposit for duties and taxes payable on imported raw materials.

Under the Bonded Manufacturing Warehouse Scheme, manufacturers who have a warehouse and have complied with all requirements provided by customs laws and regulations, may import required raw materials free of duties for use in the production of manufactured exports. However, beneficiaries of this scheme are not eligible to use the voucher scheme.

#### 2.1.4.5 Export Credit Guarantee Scheme

The National Bank of Ethiopia's Directives Number SBB/38/2006 provides export credit guarantees for export financing banks. The Development Bank of Ethiopia (DBE) is responsible for implementing the scheme, which helps to safeguard export financing banks against losses resulting from export transactions they finance. In this scheme, all exported items except coffee are given a cover for the risk they face. DBE covers 80% of the outstanding loan balance and interest thereof extended to an exporter by the financing bank. The interest paid to the financing banks will be their respective prevailing lowest lending interest rate on pre- or post-shipment loans covered by the export credit guarantee scheme.

#### 2.1.4.6 Foreign Exchange Retention Scheme

Eligible exporters may retain their foreign exchange earnings in Retention Accounts A & B. Account A: 10% of an account balance may be retained for an indefinite period of time. Account B: 90% of an account balance may be retained for up to 29 days, after which the remaining balance is automatically converted into local currency by the customer's bank, using the NBE's marginal exchange rate.

Overall, generous incentives have been provided to the manufacturing sector. However, the impact of these incentives have not been periodically assessed and monitored. Manufacturers often granted incentives based on self-declared documents, but subject to assessments by the relevant institution such as the Ministry of Industry. Incentive instruments lack standardization and not based on objective measurements such as using input-output coefficients. As of writing this report, the Ministry of Industry has been coordinating a team of experts to establish a guideline for standardizing incentives given to the manufacturing sector. The bottom line is that it is long overdue to replace self-declared documents by measurable incentive instruments, and there is also a need to introduce strong monitoring and evaluation mechanisms built in the various incentive mechanisms.

#### 2.1.5 Support Institutions

The most important institutions that are directly involved in the promotion of manufacturing industries in Ethiopia are the Ministry of Trade (MOT), the Ministry of Industry (MOI), the Ethiopian Revenue and Customs Authority (ERCA), the National Bank of Ethiopia (NBE), and the recently established Micro and Small Enterprises Development Agency (MSEDA). The latter is envisaged to operate at the federal and regional government levels.

The MOI is the main institutions responsible for coordinating the formulation and implementation of industrial policy. It is also the primary institutions, at the Federal Government level, responsible for the formulation, coordination and monitoring of national and sectoral policies related to micro- and small-scale enterprises (MSEs) in general and the manufacturing sector in particular. The NBE is also a key institution in the implementation and coordination of industrial policy through its direct control and provision of foreign

exchange in the export and import process. The ERCA coordinates and monitors external trade through its custom procedures.

The Government of Ethiopia has expressed its commitment to developing the manufacturing sector by establishing new (or strengthening existing) specialised capacity building and technology institutes for subsectors (leather and leather products, textile and apparel, sugar industry, metal, dairy and meat, and horticulture), and by elaborating a detailed sector strategy for the leather industry (Altenburg, 2010; Zerihun 2008). Thus, the Leather Industry Development Institute (LIDI) facilitates the development of the leather and leather products industry through technology and knowledge transfers so as to upgrade production, quality and marketing required for international engagement. Apart from linking local leather industries with the international markets, the institute provides continuous training to sustain skills and knowledge upgrading of the various actors in the industry.

Following the implementation of the Industrial Development Strategy, the Ethiopian government established another support institute for manufacturing, the Textile Industry Development Institute (TIDI) in 2010 based on Regulation No. 180/2010. The mission of the institute is to enable the Ethiopian textile industry to be competitive in the global arena by providing sustained investment expansion, consultancy, training, a research and development laboratory, and marketing support and services.

Similarly, the Metals and Engineering Corporation (METEC) was established as a public enterprise by the Council Of Ministers Regulation No. 183/2002 to building and integrating heavier and more advanced manufacturing industries. METEC is comprised of 15 semi-autonomous, and integrated manufacturing companies operating in more than nine different sectors, including engineering, vehicle assembly, aviation, plastics, and the manufacture of turbines, generators and high voltage cable for the electricity sector. In addition to supporting key stakeholders in the public sector, the METEC companies were established to develop their respective private sector value chains and to accelerate the technological development of Ethiopian industry. Most of the METEC companies

are situated in the Addis Ababa–Adama corridor where higher education institutions, R&D, manufacturing and the supplier ecosystem are forming industry pre-clusters and clusters that are conducive for innovation. METEC is also expected to produce high value spare parts, industrial machinery and equipment, and vehicles geared towards meeting the country's mounting needs in the construction, agriculture, and transportation sectors, among others, at a reasonable price. It has been actively supporting major public investment projects across the country.

Despite establishment of these institutes, inadequate skilled manpower has remained one of the constraints facing the manufacturing sector. These institutes also do not have adequate staff effectively serve their purposes. There are limited efforts in R & D, technology generation, etc. in these institutes to support the competitiveness of the manufacturing sector.

## 2.1.6 Infrastructure: Energy, Transport and Communication

An efficient infrastructure is necessary for sustained growth and improved export competitiveness. Studies (e.g., Foster and Morella, 2011) indicate that infrastructure contributed 0.6 percentage points to Ethiopia's annual per capita GDP growth over the last decade. Recent studies (e.g., World Bank, 2011) show also that raising the country's infrastructure endowment level to that of the region's middle income countries could lift annual growth by an additional 3 percentage points.

### 2.1.6.1 Energy

Reliable energy supply is crucial for the development of the manufacturing industry. The Government of Ethiopia has made massive investments in the energy sector, especially in hydropower generation, expanding national hydropower generation capacity from 791 MW in 2004/05 to 2177 MW in 2011/12 (Table 2.1). Electricity access has increased threefold: from 16% in 2004/05 to 48.5% in 2011/12. Between 2010/11 and 2011/12, about 703 urban towns and 451 rural villages benefited for the national electric power grid. By the end of 2014/15, the total power generation capacity of the country is expected to increase to 10,000MW.

**Table 2.1: National electricity access and generation capacity**

	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12
Electricity access (%)	16	17	22	27	32	41	46	48.5
Generation capacity (MW)	791	791	814	814	874	2000	2075	2177

Source: Ministry of Finance and Economic Development, Poverty Reduction Programs, Annual Progress Reports

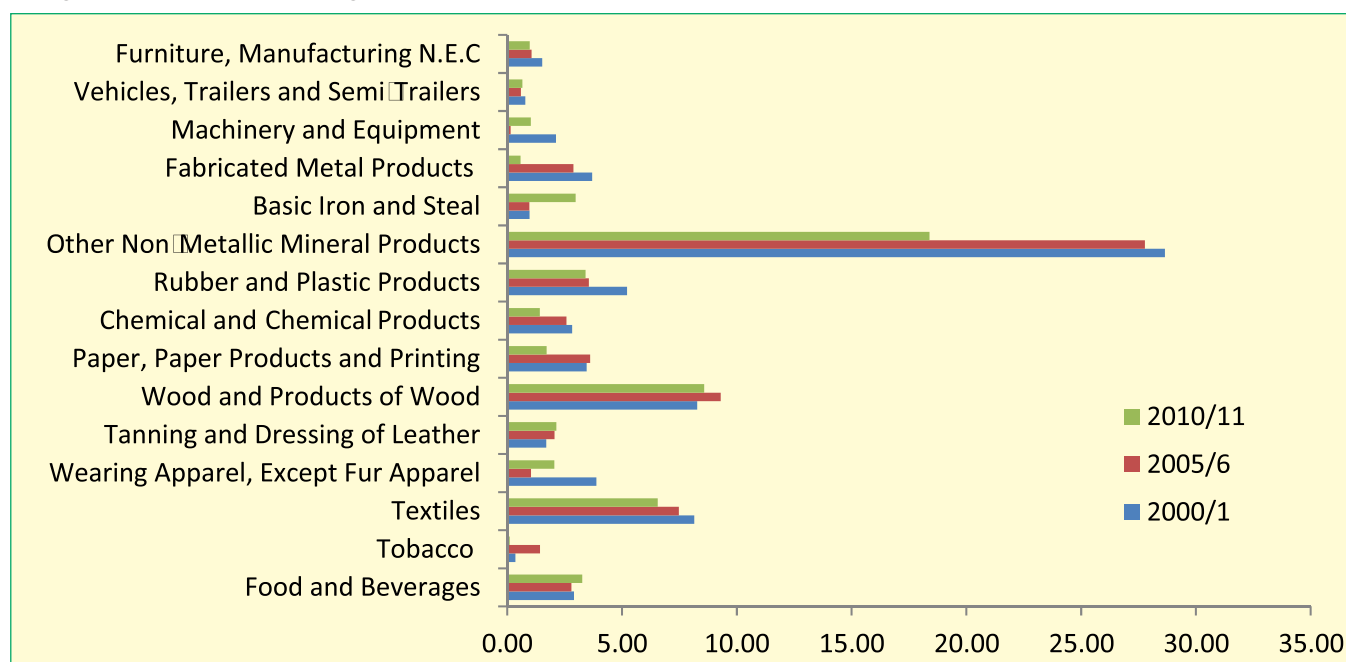
Improved supply of electricity also benefits the manufacturing industry. While energy consumption by the manufacturing industry grew by about 18.8% between 2000/01 and 2010/11, energy cost as a share of sales value decreased from 5.1% to 3.8% over the same period. In particular, non-metallic mineral, textiles, and wood

industries have relatively higher energy cost compared with other manufacturing subsectors (Figure 2.1). Although supply of electricity has improved in recent years, a recent study (Amha et al., 2012) and discussions with stakeholders indicate that frequent power interruption has been identified as a severe problem for

manufacturing firms. Long delays in accessing utilities such as electricity connections during business start-up or expansion raises production costs and waste management time. Cost of

energy is not much of the problem, but frequent interruption of electricity severely hampers manufacturing industries, i.e. power distribution failure has become a serious problem for in the country.

**Figure 2.1: Share of energy cost in total sales value (%)**



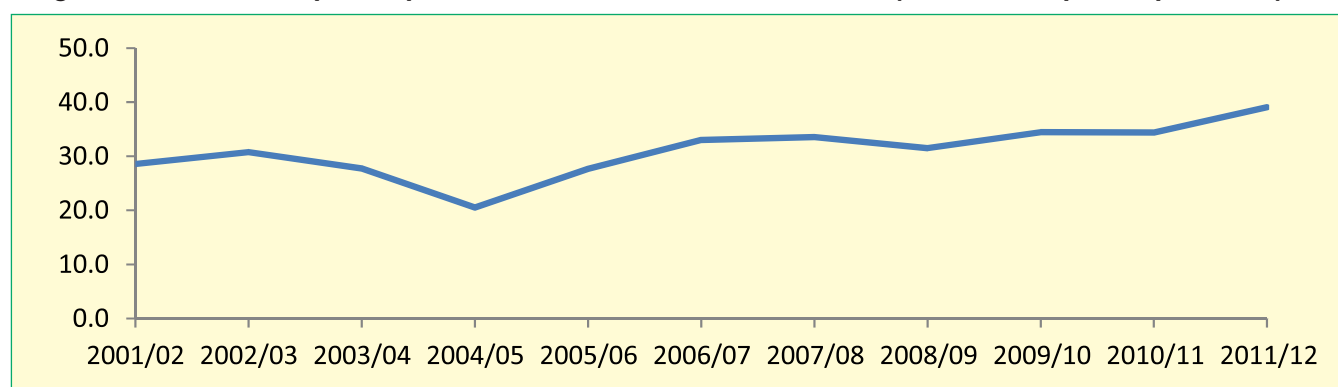
Source: CSA

### 2.1.6.2 Investment in Roads and Rail

Similar to the energy sector, road construction has been a top priority for the government as reflected in increased allocation of capital expenditure to the sector. Between 2001/02 and 2011/12,

the road sector registered an average annual growth rate in capital expenditure of 31.4%. Road construction and maintenance accounted for about 39% of aggregate capital expenditure in 2011/12.

**Figure 2.2: Share of capital expenditure allocated to the road sector (% of total capital expenditure)**



Source: MoFED (2013a)



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This huge investment resulted in expansion of the national road network from 32,871 km in 2001/02 to 56,190 km in 2011/12, increasing road density from 28.9 km per 1,000 km<sup>2</sup> in 2000/01 to 57.4 in 2011/12 and to 0.80 per 1,000 persons (Table 2.2). Road quality also improved substantially as the proportion of good condition roads increased from 28% in 2000/01 to 86% in 2011/12, an important development in terms of reducing transport costs and stimulating manufacturing.

Currently, the government is also undertaking an ambitious railway construction program. By the end of the GTP period, about 2,395 km railway network will be constructed which should facilitate bulk transportation and enhance the competitiveness of the economy. This includes a grand plan to connect the country with neighbouring countries such as Kenya, Djibouti and South Sudan through improved railway networks. Part of the plan is to renovate the old Ethio-Djibouti railway, construct a modern railway that connects Ethiopia with the port of Lamu (port of Kenya) and Juba (Capital city of South Sudan).

**Table 2.2: Road network and road density**

Indicators	2000/1	2005/6	2011/12
Total road network (kms)	32,871	37,018	56,190
Road density per 1000km <sup>2</sup>	28.9	33.6	57.4
Road density per 1000 people	0.50	0.51	0.80
Proportion of good condition roads (%)	28	30	86

Source: Ethiopian Road Authority

Note that road transport and port charges account for a large proportion of total transport costs for both exports and imports of goods in the Unimodal and Multimodal transport systems (Nathan Associates Inc., 2013). For instance, in the Multimodal system, road transport and port costs accounted for more than 85% of total cost for imports. The study also indicated that, contrary to the expectation, the Multimodal system is more expensive than the Unimodal system due to additional transport costs from dry ports to Addis Ababa.

### 2.1.6.3 Information and Communication Technology (ICT)

During the last decade, the number of mobile telephone subscribers increased from 410,000 in 2004/05 to 17.3 million in 2011/12 (MoFED, 2013a). Similarly, Internet users increased from 17,375 to 221,000. Nonetheless, Ethiopia is lagging behind its

neighbours with respect to ICT, both in terms of the level of coverage and the quality of services. Fixed and mobile telephone subscribers per 100 people, an indicator of the telecommunication infrastructure, have been the lowest compared with selected African countries (Table 2.3). Similarly, both fixed broadband Internet subscribers (per 10,000 people) and Internet users (100 people) have been not only low but also the lowest in the region (Table 2.4 and Table 2.5). Accordingly, additional efforts are required to improve the availability and quality of telecommunications services, a key competitiveness enhancing factor. Discussions with stakeholders also indicate that high cost of communication and poor quality of communication services have been identified as one of the key constraints facing manufacturing industries in reaching regional and international markets, importing inputs, delivering services, etc. This negatively affects the competitiveness of manufacturing industries.

**Table 2.3: Fixed and Mobile Telephone subscribers (per 1,000 people)**

Country	2005	2006	2007	2008	2009	2010
Tunisia	69.2	85.0	89.2	95.3	106.1	117.6
South Africa	82.0	92.8	97.0	101.3	102.9	109.2
Egypt	32.5	38.2	53.7	67.8	82.4	99.0
Ghana	14.8	25.1	35.1	50.4	64.5	72.6
Zimbabwe	7.8	9.5	12.6	16.1	35.1	64.3
Kenya	13.8	20.9	31.5	44.1	50.8	62.6
Nigeria	14.2	23.7	28.6	42.7	49.2	55.8
Tanzania	8.0	14.4	20.5	31.1	40.5	47.2
Zambia	9.1	15.0	22.7	29.3	35.3	42.8
Sudan	6.2	13.2	21.2	29.8	37.0	41.4
<b>Ethiopia</b>	<b>1.4</b>	<b>2.1</b>	<b>2.7</b>	<b>3.6</b>	<b>6.1</b>	<b>9.4</b>

Source: World Development Indicators Database



**Table 2.4: Fixed broadband Internet subscribers (per 10,000 people)**

Country	2005	2006	2007	2008	2009	2010	2011
Tunisia	17.73	43.77	94.68	221.82	359.69	459.70	513.87
Egypt	19.00	34.21	62.05	98.28	131.19	175.79	220.56
South Africa	34.58	69.34	77.39	86.38	96.68	148.21	179.75
Zimbabwe	8.10	8.14	12.19	14.46	23.35	26.25	26.66
Ghana	0.88	5.75	7.13	9.88	11.50	20.53	25.09
Kenya	1.52	4.85	4.73	0.85	2.12	1.03	10.20
Zambia	0.22	1.99	3.32	4.61	8.41	7.84	5.66
Tanzania	0.39	0.45	0.52	0.61	0.65	0.70	0.76
<b>Ethiopia</b>	<b>0.01</b>	<b>0.03</b>	<b>0.13</b>	<b>0.19</b>	<b>0.43</b>	<b>0.50</b>	<b>0.54</b>

Source: World Development Indicators Database

**Table 2.5: Internet users (per 100 people)**

Country	2005	2006	2007	2008	2009	2010	2011
Tunisia	9.66	12.99	17.10	27.53	34.07	36.80	39.10
Egypt	12.75	13.66	16.03	18.01	24.03	30.20	38.69
Nigeria	3.55	5.55	6.77	15.86	20.00	24.00	28.43
South Africa	7.49	7.61	8.07	8.43	10.00	18.00	21.00
Zimbabwe	8.02	9.79	10.85	11.40	11.36	11.50	15.70
Ghana	1.83	2.72	3.85	4.27	5.44	12.70	14.11
Uganda	1.74	2.53	3.67	7.90	9.78	12.50	13.01
Tanzania	4.30	5.80	7.20	9.00	10.00	11.00	12.00
Zambia	2.85	4.16	4.87	5.55	6.31	10.00	11.50
Malawi	0.38	0.43	0.97	0.70	1.07	2.26	3.33
<b>Ethiopia</b>	<b>0.22</b>	<b>0.31</b>	<b>0.37</b>	<b>0.45</b>	<b>0.54</b>	<b>0.75</b>	<b>1.10</b>

Source: World Development Indicators Database

### 2.1.7 Access to Credit

A transition to an industry-based economy requires a dependable financial system to allocate financial resources to productive sectors such as manufacturing. Following the 1991/92 reform, the financial system has now grown in size, changed its composition and to some extent expanded its range of products. For instance, the number of private commercial banks increased to 14 in 2011/12, bringing the total number of commercial banks to 16. The number of commercial banks branches has also increased significantly to stand at 1,289 in 2011/12, or one branch per 62,000 persons. The degree of coverage has improved considerably in Ethiopia since 2008 when Abay (2010) reported 596 branches in existence, or one branch per 125,000 persons. Similarly, the number of micro finance institutions expanded to 31 over the same period. In addition, there is one development bank which intends to guide credit allocation to different sectors, especially to agriculture and industrial sectors.

An examination of the sectoral distribution of loans reveals that the service sector is the major beneficiary, accounting for more than 45% of total loans in 2010/11 (Table 2.6). Trade alone accounted for 41% of total bank loans in 2010/11. The agriculture and industry sectors have a combined share of only 29.2%. However, the shares of total loans of the service sector and trade have been declining

while the shares of agriculture and industry have been increasing. Credit allocation has been heavily skewed towards trade finance at the expense of strategically important sectors. To curb this unbalanced sectoral loan allocation, the NBE has introduced a new directive requiring all commercial banks to allocate 27% of their loan disbursements for the purchase of government bonds in 2011/12, which would reduce the lending capacity of private banks. The Development Bank of Ethiopia provides loans to investors who wish to invest in the priority manufacturing sectors as well as in commercial agriculture. Currently, investors are required to deposit 30% of the total project cost to be able to get the remaining balance (70%) from the bank.

In spite of these efforts, it has been reported that access to finance has remained one of the major problems facing the manufacturing sector. Access to finance is comparatively much more problematic for small firms compared with medium and large firms. Although investors and exporters have preferential access to finance, limited availability of finance, high cost, lengthy bank procedures and delays have been reported as some of the problems facing exporters and investors. Note that branch expansion with no financial services and financial product improvements bound to have limited role in addressing the core finance problems of the manufacturing sector. In addition, limited supply and delays in

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accessing foreign exchange have been reported as problems facing the manufacturing firms. In times of declining foreign

exchange reserves, banks rationed foreign exchange and limit to imports of basic commodities such as medicine and petroleum.<sup>5</sup>

**Table 2.6: Sectoral distribution of bank loans (%)**

Sector	2003	2004	2005	2006	2007	2008	2009	2010
Agriculture	9.4	16.5	17.6	16.8	19.7	11.9	15.4	19.5
Industry	11.7	11.5	10.5	9.8	10.1	10.5	17.2	24.8
Domestic Trade	23.6	20.2	19.8	19.2	18.4	20.7	17.9	16.0
International Trade	26.8	31.2	28.6	28.1	33.8	32.1	28.4	25.0
Export	12.8	13.2	13.4	14.4	11.4	11.2	18.3	14.0
Import	14.0	18.0	15.2	13.8	22.4	20.8	10.2	11.0
Hotels and Tourism	0.5	0.5	0.7	1.1	0.9	1.1	1.1	0.9
Transport and Communication	7.9	3.9	8.1	9.2	4.9	3.5	3.3	4.4
Housing and Construction	6.0	6.6	9.4	10.8	7.4	15.9	13.5	6.9
Mines, Power and Water resources	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0
Others	14.1	9.5	5.2	4.9	4.6	4.4	3.2	2.5

Source: National Bank of Ethiopia

## 2.1.8 Trade Logistics

Efficient logistics improve the competitiveness of private firms by lowering transactions costs. The costs relate not only to the direct costs of transporting products; goods in transit incur indirect costs such as inventory holding costs (Hausmann, 2012). Ethiopia ranks poorly in the World Bank's Logistics Performance Index (LPI). In particular, tracking and tracing, international shipments, infrastructure, customs and logistic competence services are not

only poor but also have shown no improvements between 2010 and 2012 (Table 2.7 and Table 2.8). High logistics costs reduce the competitiveness of Ethiopian goods and services in regional and global markets (Box 1) and also raise the price of imported goods and services to domestic consumers. In particular, high transportation cost has been reported as severe problem hindering the performance of local manufacturing industries and this retards integration of industries with regional and global markets.

**Table 2.7: Logistics Performance Index (LPI) Rankings 2010/2012, Ethiopia**

Indicators	2012 Rank (out of 155 countries)	2010 Rank (out of 155 countries)	Change in Rank
Customs	139	120	-19
Infrastructure	124	145	-21
International shipments	129	89	-40
Logistics Competence	139	136	-3
Tracking & tracing	145	70	-75
Timeliness	143	144	1
<b>Overall LPI Rank</b>	<b>141</b>	<b>123</b>	<b>-18</b>

Source: World Bank's Logistics Performance Index

**Table 2.8: Logistics Performance Index, 2012**

Country	LPI	Customs	Infrastructure	International Shipment	Logistics Competence	Tracking & Tracing	Timeliness
South Africa	3.67	3.35	3.79	3.50	3.56	3.83	4.03
Senegal	2.49	2.46	2.31	2.72	2.55	2.10	2.74
Kenya	2.43	2.08	2.16	2.69	2.38	2.34	2.88
<b>Ethiopia</b>	<b>2.24</b>	<b>2.03</b>	<b>2.22</b>	<b>2.35</b>	<b>2.14</b>	<b>2.10</b>	<b>2.54</b>
Zimbabwe	2.55	2.31	2.20	2.67	2.27	2.50	3.27
Tanzania	2.65	2.17	2.41	2.91	2.64	2.77	2.97
Rwanda	2.27	2.19	1.88	2.27	2.06	2.39	2.76

Source: World Bank (2012)

<sup>5</sup>When the country's foreign exchange reserves declined to three weeks of import coverage in the last quarter of 2012, foreign exchange was allowed only to import basic commodities such as medicine and petroleum and the Commercial Bank of Ethiopia suspended opening letters of credit (LC) for other commodities (Nathan Associates Inc., 2013).

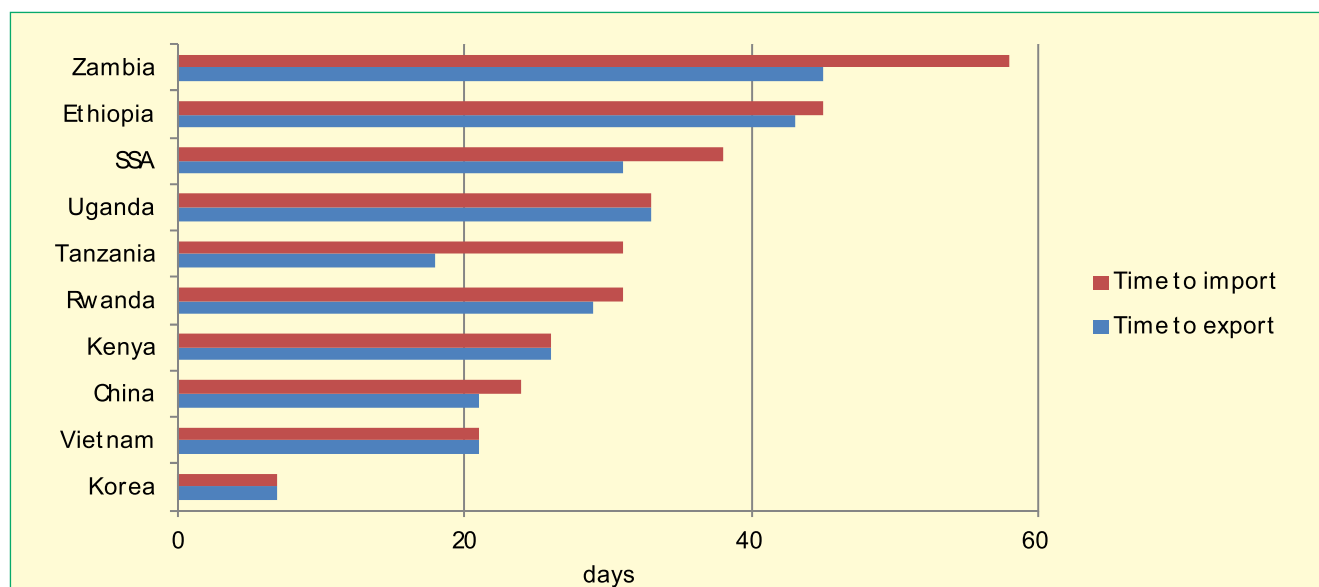


While there seem some improvements in the time to export since 2010, the time to import is getting longer since 2009 (World Bank, 2013). The country performs badly in terms of the time to export and import, lags behind its neighbouring countries and the Sub-Saharan African average (Figure 2.3). A recent study (Nathan Associates Inc., 2013) indicates that a container spends on average 912 hours (or 38 days) at the Djibouti port, compared with

12 days in Mombasa in neighbouring Kenya.

A key prospective development is the completion of the Ethio-Djibouti railway project, which is currently under construction. The impact of this project on industry and export growth is expected to be huge as rail transport is cost effective compared to road transport.

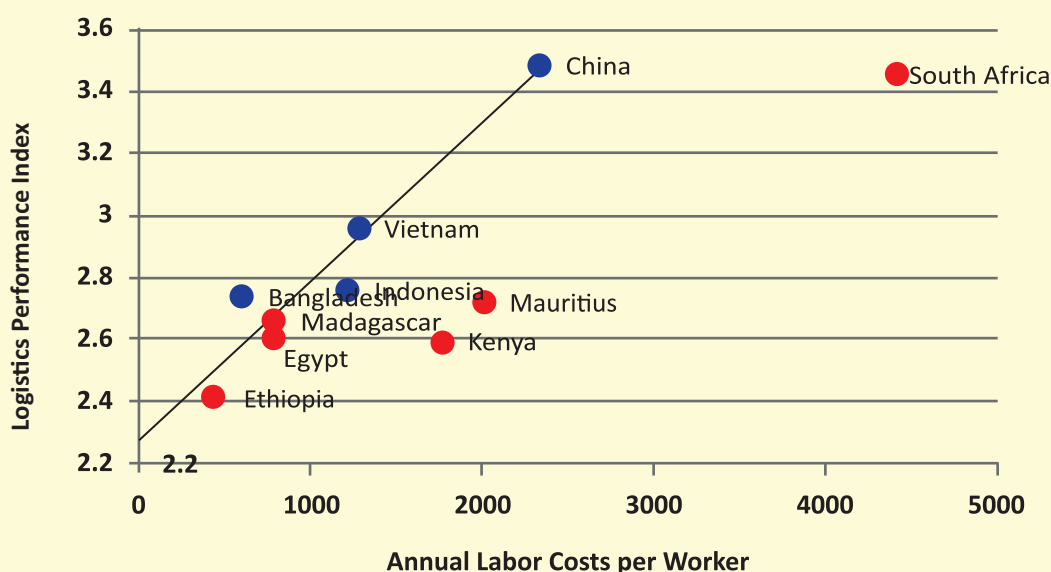
**Figure 2.3: Number of days to export and import (2013), Ethiopia and peer countries**



Source: World Bank (2013)

### Box 1: Trading off in Logistics and Factory-Floor Costs among Exporting Firms

Comparing average labour costs per worker and LPI in selected countries indicates that for a given LPI, labour costs are higher in Mauritius, Kenya and South Africa compared with Bangladesh and Vietnam. There seems a trade off between lower labour cost and higher logistics cost in countries such as Ethiopia, Madagascar, and Egypt. Note that lower cost alone cannot make countries competitive since it is just one of the costs of production; other conditions are also important.



Source: World Bank (2011)

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In summary, the Ethiopian government has been providing incentives to energize the manufacturing sector, but the impacts of these subsidies and fiscal incentives have not been properly assessed. Note that the provision of these incentives can affect both entry and competitiveness of manufacturing firms (Macchiavello and Morjaria, 2010). Although incentives can help firms enter new markets and generate positive externalities (e.g. Knowledge spillovers), it may also weaken competitiveness by protecting inefficient firms. Discussions with stakeholders indicate that subsidies and fiscal incentives are very attractive in terms of quality and coverage, but strong monitoring mechanisms are lacking. It has also been indicated that incentives need to be designed based on a thorough understanding of the manufacturing sector and close consultation with manufacturers. Then a strong monitoring mechanisms needs to be put in place to evaluate those incentives. In addition, inadequate foreign exchange and finance have been identified as the main challenges facing manufacturing firms. The problems manifest in the forms of limited availability of finance and foreign exchange as well as delays in processing requests. All these will increase the cost of doing business which reduces the competitiveness of the manufacturing sector both in

the local, regional and global markets.

## 2.2 Product Diversification and Structural Transformation of the Manufacturing Sector

Export diversification is an intrinsic feature of economic development (Imbs and Wacziarg 2003). Diversification of exports mitigates the economic risks of dependence upon a few commodity exports in terms of price volatility and associated instability in foreign exchange earnings, as well as in terms of secular and unpredictable declines in the terms of trade.

Ethiopia's manufacturing export profile has been dominated by traditional products such as semi-processed leather and skin (Table 2.9). Leather, textile & apparel, footwear, prepared foods, and chemicals (e.g., animal vaccines and sulphuric acid) are the top five leading manufacturing exports. Although the contribution of leather exports has declined, it has maintained its leading position. On the other hand, there has been an encouraging progress in the textile, footwear and processed food sectors. Between 2000 and 2011, it appears that there seems some degree of manufacturing product diversification, although the pace has been sluggish.

**Table 2.9: Contribution of export items (% of total manufacturing receipt)**

Export Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Leather	96.64	92.52	95.03	92.14	89.64	84.87	82.34	75.04	73.00	60.45	59.73	59.89
Textile & Apparel	1.23	1.97	3.08	3.72	5.69	6.36	7.23	8.51	7.51	10.06	11.75	21.95
Foot Wear	0.15	0.14	0.09	1.56	0.56	1.10	2.99	6.56	7.68	9.31	6.97	4.18
Prepared Food	0.73	0.01	0.03	0.28	0.21	0.79	0.61	0.55	1.15	3.26	4.36	3.58
Chemicals	0.27	0.32	0.47	0.41	0.27	0.43	0.64	0.99	2.46	3.65	3.95	2.78
Wood products	0.03	0.18	0.03	0.06	0.08	0.10	0.23	1.88	2.49	5.40	1.37	2.47
Beverages	0.29	0.26	0.35	0.57	0.52	1.67	0.55	0.40	0.67	1.51	1.76	1.83
Plastics & Rubbers	0.00	0.00	0.04	0.11	0.15	0.10	0.75	1.69	1.72	1.21	0.53	0.48
Artides of Leather	0.01	0.02	0.04	0.07	0.13	0.05	0.04	0.19	0.06	0.68	0.53	0.32
Others	0.65	4.58	0.85	1.09	2.73	4.51	4.63	4.19	3.26	4.47	9.03	2.52

Source: ERCA

In manufacturing, notwithstanding some encouraging signs of diversifications in the manufacturing export mix, the pace of diversification has been slow (Table 2.10). The concentration ratio

of the top 10 export commodities for Ethiopia has shown a declining trend, but remains relatively high.

**Table 2.10: Concentration of Ethiopia's manufactured exports, by product (2001-2012)**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Concentration ratio <sup>6</sup>	0.79	0.85	0.81	0.87	0.90	0.90	0.61	0.65	0.64	0.68	0.68	0.67
HHI <sup>7</sup>	0.1432	0.1287	0.1025	0.2206	0.4111	0.4247	0.0485	0.0828	0.1015	0.1510	0.1038	0.1419

Source: International Trade Centre's TradeMap

The Herfindahl-Hirschman export concentration index (HHI) also shows that there has been very limited improvement between 2001 and 2012 (Figure 2.4). A comparison of HHI scores with some

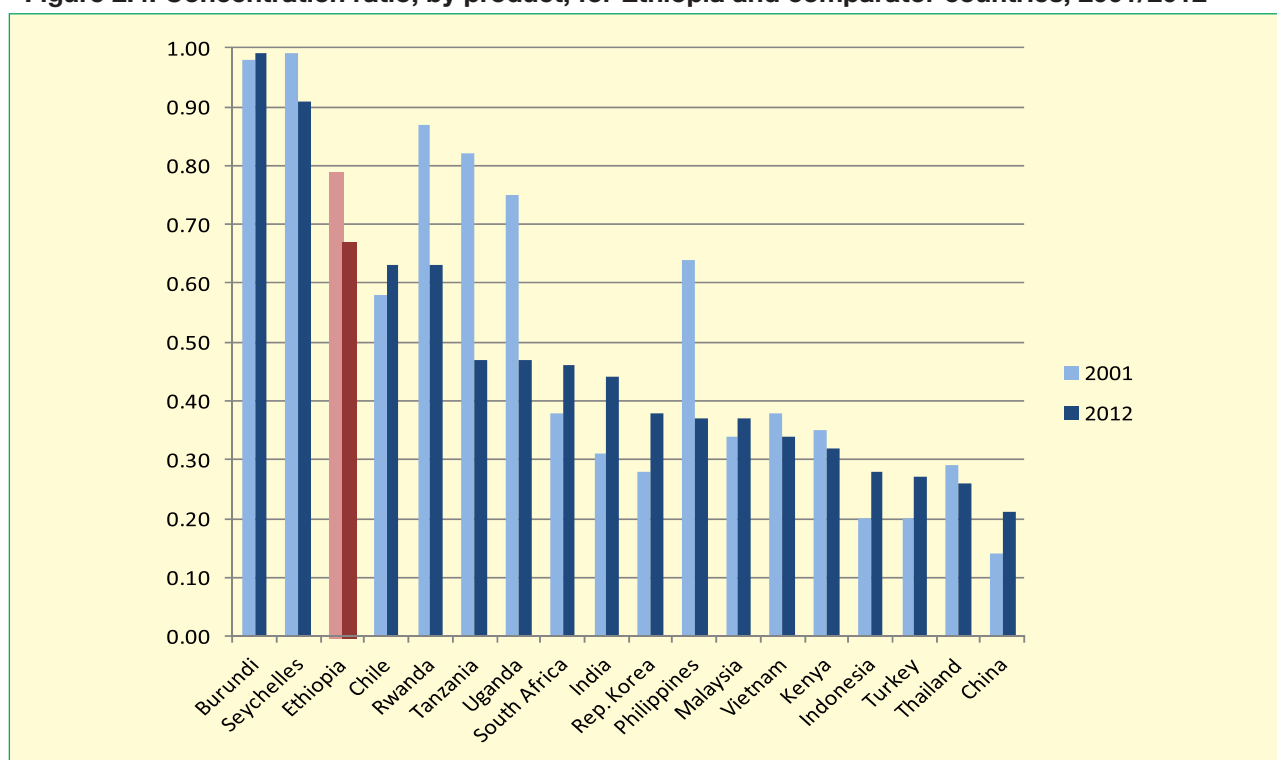
benchmark countries reveals that the pace of diversification in Ethiopia is one of the slowest.

<sup>6</sup>The concentration ratio is calculated here as the share of the 10 most important manufactured export products (at HS6-digit level) in total manufactured exports.

<sup>7</sup>HHI =  $\sum s_i^2$  (where  $s_i$  is the share of export product  $i$  in total manufactured exports, in percent).



**Figure 2.4: Concentration ratio, by product, for Ethiopia and comparator countries, 2001/2012<sup>8</sup>**



Source: International Trade Centre's TradeMap

Cross country comparison in terms of the diversification measured by HHI by product shows that Ethiopian export structure is one of the least diversified (Figure 2.5). The progress towards

diversification in Ethiopian manufacturing has been very sluggish as indicated by limited improvement between 2001 and 2012.

**Figure 2.5: Herfindahl-Hirschman Index for the manufacturing sector, for Ethiopia and comparator countries, 2001/2012<sup>9</sup>**

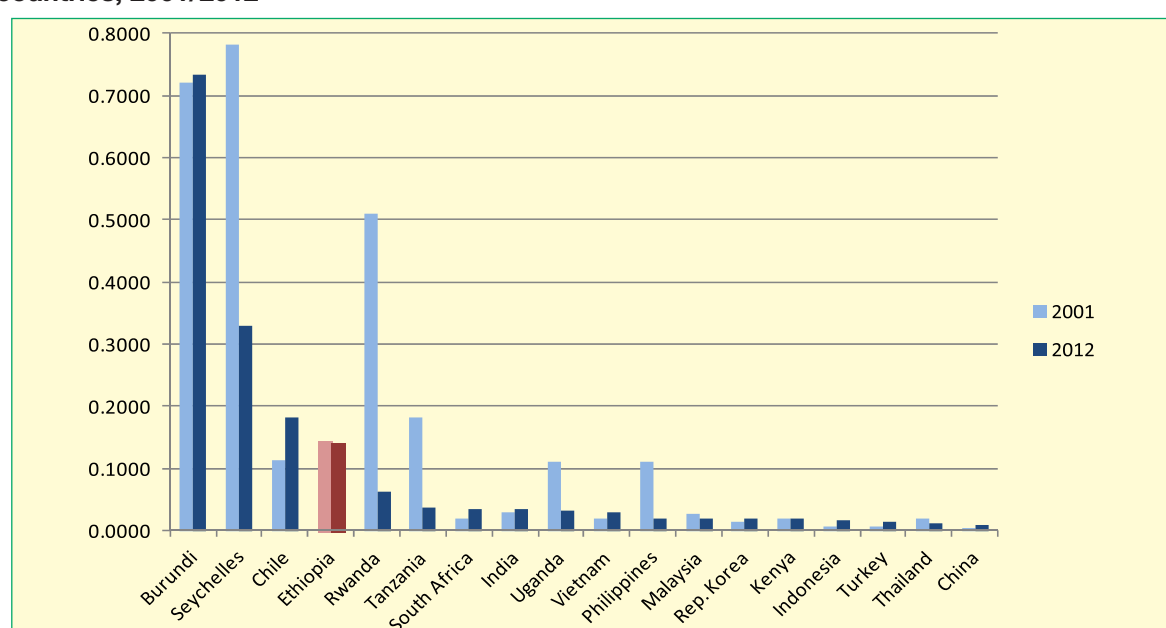


Figure 1.1: Nominal and Real Effective Exchange Rates, January 2000 to August 2013, January 2000 = 1.00

<sup>8</sup>For Burundi, 2003 data has been used instead of 2001 data.

<sup>9</sup>For Burundi, 2003 data has been used instead of 2001 data.

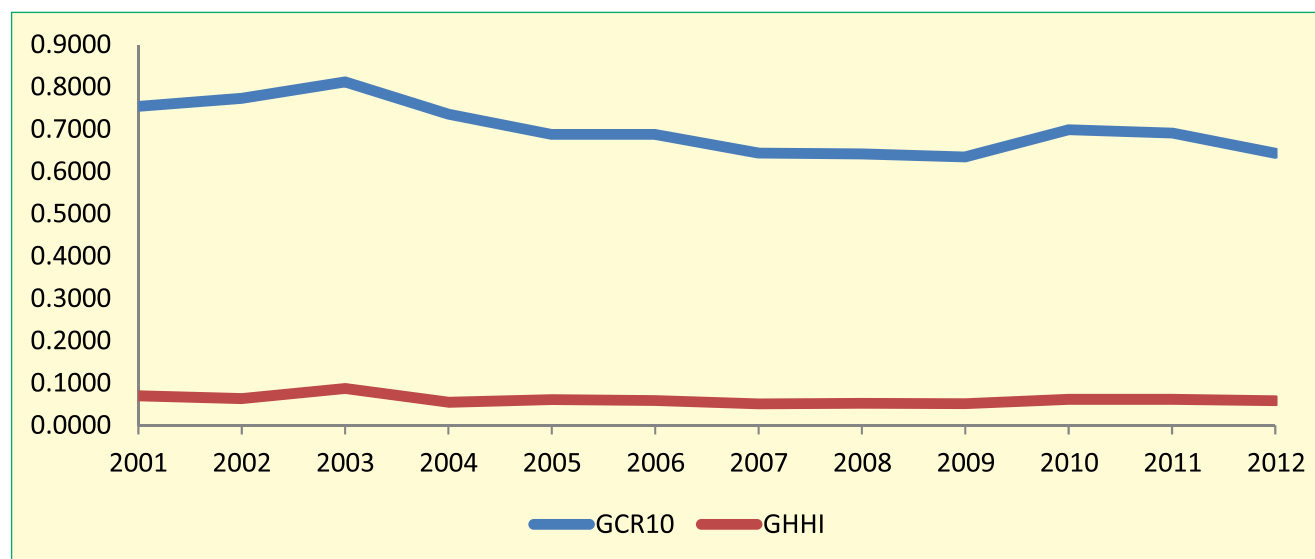


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In terms of export market diversification, Ethiopia exports to a large number of countries as reflected by smaller values of the HHI export

concentration index by country of destination (GHHI) (Figure 2.6).

**Figure 2.6: Trends in geographic (destination) export concentration (2000-2012)<sup>10</sup>**

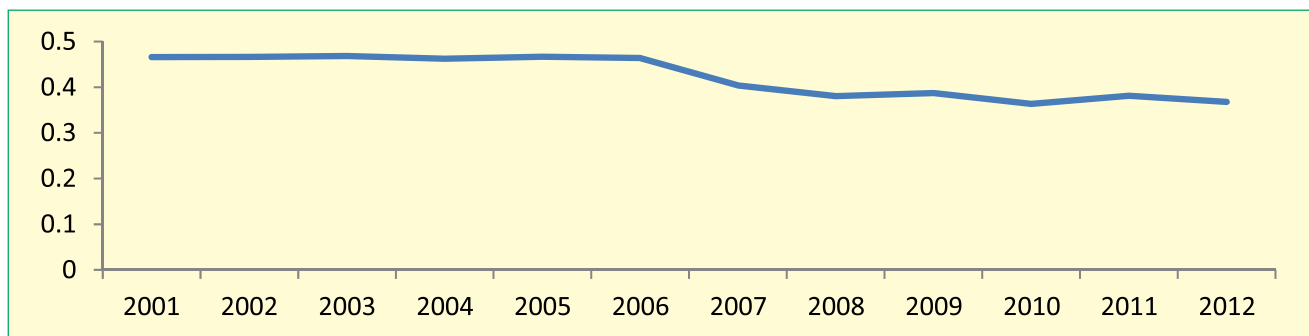


Source: International Trade Centre's TradeMap

In terms of manufactured product diversification, Ethiopia has shown some improvements between 2001 and 2012 as reflected

by declining manufacturing product diversification index (MPDI) (Figure 2.7).

**Figure 2.7: Manufactured Product Diversification Index (MPDI)**



Source: International Trade Centre's TradeMap

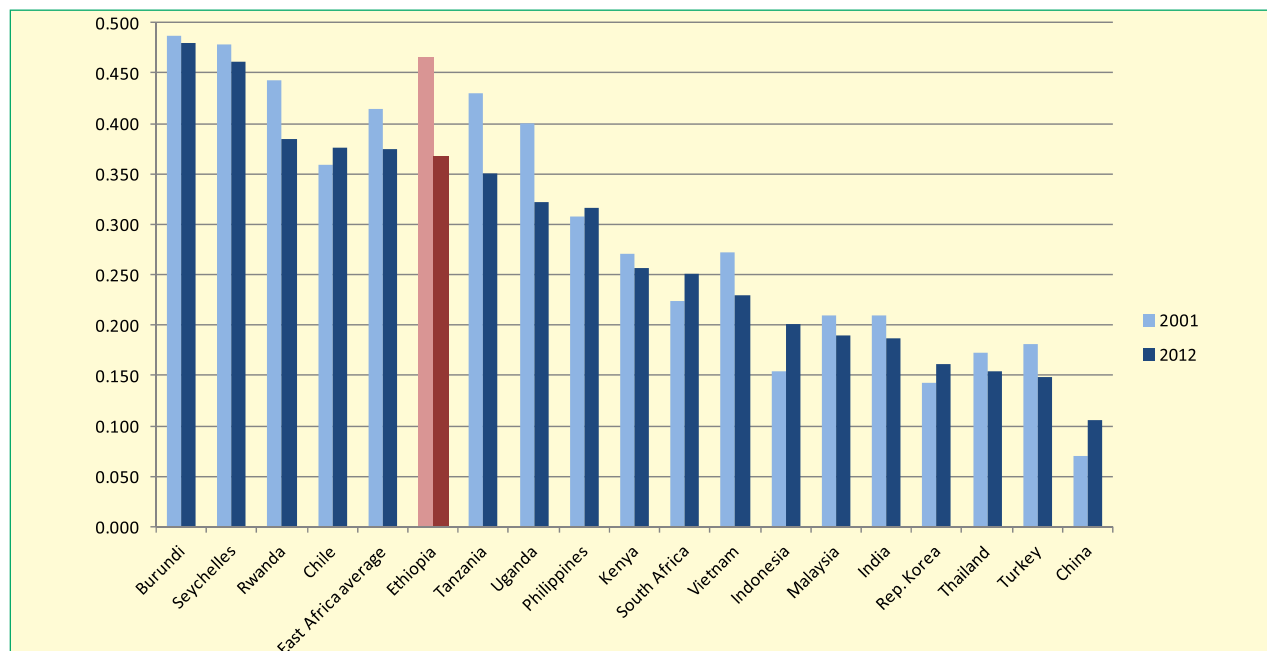
Comparison of the country's MPDI with selected countries indicates that the country is lagging behind its global competitors (Figure 2.8). In 2012, the country's MPDI was slightly below the Eastern African average, suggesting some progress towards

diversified manufactured products. However, the country performs poorly compared with selected Eastern African countries such as Kenya, Uganda, and Tanzania.

<sup>10</sup>PHHI refers to the product concentration Herfindahl index and GHHI refers to geographic (destination) Herfindahl concentration index. An index close to 1 indicates that there is less diversification. PCR10 refers to concentration ratio calculated by adding

the top 10 major export commodities and GCR10 stands for concentration ratio of countries considering the top 10 major destination countries.

**Figure 2.8: Manufactured product diversification index for Ethiopia and comparator countries, 2001-2012**

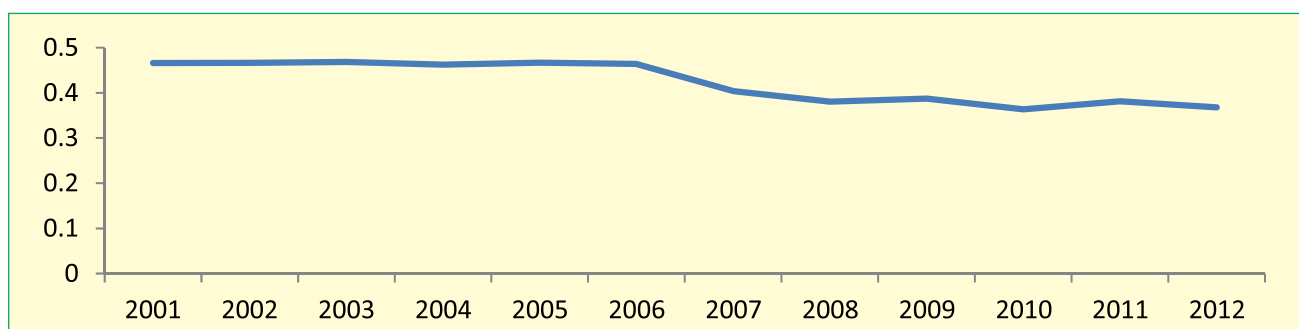


Source: International Trade Centre's TradeMap

There has been a structural change in the Ethiopian manufactured exports away from resource-based exports but at a very slow pace (Figure 2.9). The share of resource-based manufactured exports

has shown a declining trend over time while the share of medium and high technology-based exports increased in recent years.

**Figure 2.9: Structural changes in Ethiopian manufacturing exports (2002 - 2012)**

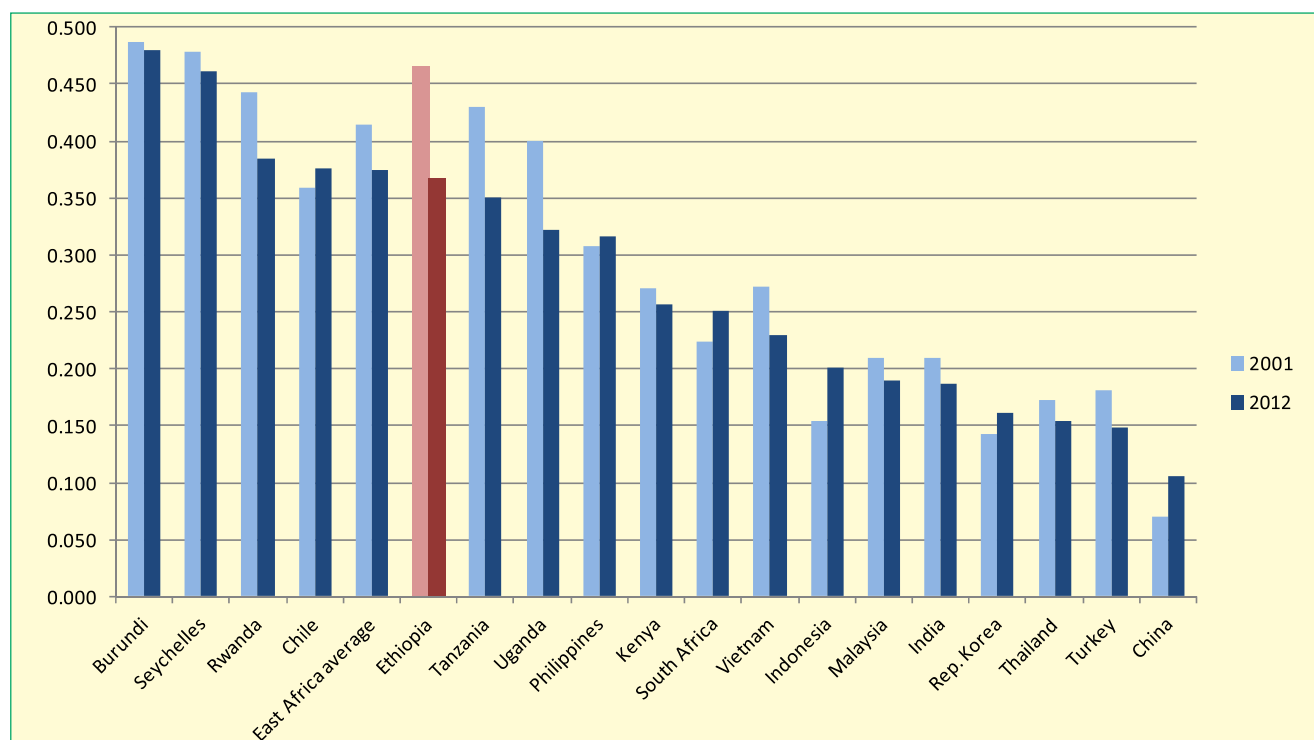


Source: International Trade Centre's TradeMap

Note, however, that the contributions of high and medium technology-based exports to total manufactured exports have remained low in the Ethiopian manufacturing export profile.

Although Ethiopia fares better than the Eastern African average, the Ethiopian manufactured exports are dominated by low technology-based exports (Figure 2.10).

**Figure 2.10: Structure of manufactured exports by technology classification for Ethiopia and comparator countries, 2012**



Source: International Trade Centre's TradeMap

Overall, Ethiopia's manufacturing export has been identified as one of the least diversified compared to its potential global competitors. Moreover, there has been comparatively little progress in diversifying the export mix. This slow change in the export dynamics may have been due to the low level of market and product innovation of entrepreneurs in the priority areas as reflected by the dominance of resource-based manufacturing exports. Knowledge and technological progress have become more important to the realisation of product and process diversification which lead to economic prosperity within an integrated world economy as witnessed by the experiences the Asian countries. For instance, the first generation of the newly industrialized Asian economies (i.e., South Korea, Taiwan, Singapore and Hong Kong) have had sustained rapid manufactured export growth through diversifying exports based on an increasing share of technologically complex manufacturing products in total exports. A second generation of NIEs (e.g., Malaysia, Thailand, Philippines, Mexico, Chile and Israel) have also witnessed rapid manufacturing export growth but with varying achievements in high technology exports.

## 2.3 SWOT analysis of manufacturing subsectors in Ethiopia

### 2.3.1 Textile and garment Sector

The modern textile industry of Ethiopia dates back to 1939 with the establishment of the Dire Dawa Textile mills. According to the Textile Industrial Development Institute (TIDI), there are now 61 textile and garment factories. Of these, 26 are textile factories, 31 are garment

assembly plants operating on the basis of cut-make-trim (CMT) manufacturing, and the remaining 8 are vertically integrated textile and garment factories. The textile sector includes spinning, weaving and finishing of textiles; manufacture of cordage, rope, twine and netting; and knitting mills. The textile and garment sector contributed about 6.5% and 2.8% of the total value added of manufacturing in 2000/01 and 2010/11, respectively. In terms of export earnings, the sector has contributed on average 2.3% to Ethiopia's total export earnings between 2000 and 2012.

The CMT sector is believed to be the easiest and least expensive segment of the textile and garment industry to develop, especially for countries with abundant cheap labour. According to GDS (2010), many developing countries, including Bangladesh, Vietnam, and Indonesia, have successfully generated millions of jobs and substantial export earnings from this sector. For example, Vietnam, whose textile sector consists 80-95% of CMT manufacturing, employs about 1.2 million workers in this area and has become the fourth largest apparel exporter; it shows the possibilities for countries to enter at the low end of the apparel industry value chain.

Ethiopia has much strength to enable it to succeed in the textile and apparel sector. It is endowed with abundant cheap labour, cheap electricity, arable land suitable for cotton growing, and the necessary water resources; this creates the potential for the growth of a competitive CMT garment sector. Vertical integration further provides firms a cost advantage in procuring direct inputs.

As regards raw inputs, Ethiopia is endowed with a total arable land area of 2.6 million hectares for growing cotton. Moreover, Ethiopia is well endowed with water resources. Ethiopian cotton, if well cultivated, gives high quality and internationally accepted staple lengths. However, studies (e.g., Sutton and Kellow, 2010) indicate that only 2.8%, or 73,000 hectares, is utilized for production of cotton. Moreover, yields are low due to low productivity, insufficient incentives for farmers, poor irrigation management, and poor handling technology. Although inefficiency drives up costs (GDS, 2010), the production cost of Ethiopian cotton is 66.3% that of Chinese cotton, 57.3% that of American cotton, and 90.8% that of Indian cotton. Thus, there is considerable scope for expansion of cotton planting and increased yields which would improve the domestic supply of raw material for the textile industry at globally competitive prices.

Moreover, Ethiopia is the second most populous country after Nigeria among sub-Saharan countries, having a large cohort of young workers between ages 15 and 40. This demographic structure not only provides cheap labour but also creates a huge potential domestic demand for the output of the sector. Currently, the government of Ethiopia is expanding tertiary level education, which will fill the existing gap in the supply of skilled labour. Meanwhile, Technical and Vocational Education and Training (TVET) centres are providing on-the-job training at the semi-skilled level.

In terms of utilities, the price of electricity is US\$0.047 per KWH, which is a quarter of the price in the case of China and Vietnam (GDS, 2010).

The key weakness is technology. Existing textile mills in Ethiopia are relatively weak and the sector is not in a position to produce world class competitive fabric due to a low level of technology and obsolete machinery, lack of skilled human resources, financial constraints to acquire adequate technology, and suboptimal capacity utilization. A key requirement is to attract foreign investors to provide frontier technology and knowhow to local industries. To

attract investors, the Ethiopian government has implemented a one-stop-shop at the Ethiopian Investment Agency (EIA) for many services. The services given include: issuance of investment permit (6 hours), issuance of commercial registration certificate (6 hours), issuance of business license (6 hours), issuance of work permit (2 hours), registration of technology transfer agreement (1 hour), and registration of export oriented non-equity based foreign collaboration (1 hour). The Agency also facilitates the acquisition of land and utilities (EIA).

A second key weakness is poor and high cost of logistics and trade infrastructure. Currently, sea freight is handled by Ethiopian Shipping Lines (ESL). This flag carrier has limited capacity and charges high prices at Djibouti port. According to GDS (2010), inland freight companies of Ethiopia also charge higher prices compared to neighbouring countries like Uganda and Kenya. The high costs of inland and sea freight erodes the cost advantage gained from lower factor costs. Cognizant of this problem, the Ethiopian Government has started a multimodal system very recently to lessen this entrenched hindrance factor.

In terms of opportunity, Ethiopia has favourable trade agreements with the major global markets, including AGOA, EBA, and preferential tariff rates under COMESA agreements. Moreover, in terms of global structure of production, activity in the textiles and clothing sector is starting to shift as the larger, more advanced emerging markets are facing increasing factor costs and are focussing on moving up the value chain, creating room in this segment of the production chain. There are also threats: climate change creates risk for agricultural production and market access conditions will change with the end of AGOA in 2015.

The basic factors that determine the competitiveness of the textiles and garment subsectors, structured in the form of the strengths, weaknesses, opportunities and threats (SWOT) framework, are presented in more detail below (Table 2.11 and Table 2.12).

**Table 2.11: SWOT analysis of the textile sector**

Opportunities	Threats
<ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Availability of abundant labour at competitive wage</li> <li>◦ Competitive factor costs including land, electricity, water, etc.</li> <li>◦ Special access to finance</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Rising domestic demand</li> <li>◦ Growing and unsatisfied demand both regionally and globally</li> <li>◦ Preferential market access to EU, USA and regional market (e.g. COMESA)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Low labour productivity and lack of skilled manpower</li> <li>◦ Technological obsolescence</li> <li>◦ Shortage of foreign exchange for imports of capital goods and inputs</li> <li>◦ Limited access to credit and foreign exchange</li> <li>◦ Low level of automation and workstation engineering</li> <li>◦ Lack of access to international information</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Marketing problems, i.e. weak foreign outlet</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Limited value addition and linkages with other sectors</li> </ul> </li> </ul>

Opportunities	Threats
<ul style="list-style-type: none"> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Availability of local raw material (cotton)</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Export Trade Duty Incentive Scheme, namely: Duty drawback scheme, voucher scheme and Bonded manufacturing warehouse scheme</li> <li>◦ Priority sector in government's development plan</li> <li>◦ Specialized institute to support the sector (e.g. Textile Industry Development Institute, TIDI)</li> <li>◦ One-stop services for investors</li> </ul> </li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Improved supply of skilled labour force</li> <li>◦ Improved supply of energy at lower price</li> <li>◦ Rising investment in the sector by government and foreigners</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Growing domestic and international market</li> <li>◦ Growing demand in international markets for the sector</li> <li>◦ Duty free access to EU and USA markets</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Potential higher value addition of textile, garment and home textile sector</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Relocation of firms from high cost economies which would enhance competition both nationally and regionally;</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Development of industrial zones and clusters</li> <li>◦ Improvements in infrastructure, especially in railway</li> <li>◦ Improvements in inter-country infrastructure</li> <li>◦ Improvements in regional integration through free trade (e.g. COMESA)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◦ Logistics and transportation disadvantages</li> <li>◦ Lack of raw material (like spare parts, dyes and chemicals) and accessories</li> <li>◦ Weak product development, design or research development capabilities and little diversification</li> <li>◦ Poor quality of raw cotton produced in the country</li> <li>◦ Shortage of other raw material other than raw cotton (e.g. polyester, silk, Lycra, nylon, etc.)</li> <li>◦ Lack of local cotton production expansion</li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ High tariff on inputs used in textile industry</li> <li>◦ Fragmented industry, i.e. absence of cluster in the sector</li> <li>◦ Inefficiency created by the bureaucratic system of custom and clearance delays</li> </ul> </li> </ul> <p><b>Threats</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Climate change</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Weak economy performance in EU which will negatively impact on demand for textiles products</li> <li>◦ End of AGOA by 2015, adverse impacts on the sector</li> <li>◦ Increasing demand for fashion sensitive product varieties</li> <li>◦ Shrinking of western economies</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Strong competition, especially in lower medium segments with international competitors</li> </ul> </li> </ul>

**Table 2.12: SWOT analysis of Garment Sector**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Availability of easily trainable work force at low cost</li> <li>◦ Low production cost</li> <li>◦ Availability of factor costs at a competitive price (e.g. land, electricity, etc.)</li> <li>◦ Access to credit</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Growing domestic demand</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Shortage of technical and qualified supervisor and managers</li> <li>◦ Lack of access to adequate finance</li> <li>◦ Limited innovation and design input in production</li> <li>◦ Limited awareness of international market trends, designs and product development</li> <li>◦ Lack of information about needs of buyers in export market and benchmark of successful</li> </ul> </li> </ul>



- Rising regional and global demand
- Duty free access to EU and USA markets
- **Related and support industries:**
  - Sufficient local cotton supply
  - Local availability of yarns for knitwear as well as cotton fabrics in basic qualities for downstream sectors -value chain advantage
- **Firm strategy, structure and rivalry:**
  - Emerging dynamic group of entrepreneurs with international orientation and experience
- **Government:**
  - Facilitation of market access for competitive suppliers through TIDI
  - Preferential duties (duty free) for knitwear and specific cases for woven garment as well
  - One-stop-shopping for services

- products and companies at the market
- Limited awareness of costing and pricing strategies
- Lack of marketing skill, customer service, customer acquisition, finance management, business planning, communication etc.
- **Demand conditions:**
  - Weak domestic demand due to poor quality
- **Related and support industries:**
  - Lack of conducive logistics and relatively high costs of inland transportation and sea freight makes exporting firms uncompetitive in the international market, high lead time to deliver orders
  - Weak product development, design or research development capabilities and little diversification
  - Lack of domestic supply of trims (buttons, zippers, interlining etc.) accessories or packaging materials
  - Inferior quality of cotton/cotton variety deviates from demand trend in international markets
  - Raw material and accessories problems:-few local knitted fabrics for garment industries
  - Unreliable supply of quality dyed yarn with adequate variety
  - Absence of designers or Design Colleges and design consultants
  - Underutilization of existing technical equipment
  - Promotion of marketing and communication activities is very minimal.
- **Firm strategy, structure and rivalry:**
  - Strong competition with imports
  - Weak domestic firms capability
- **Government:**
  - High tariff rate on yarn
  - Inefficient government support services including customs

#### Opportunities

- **Factor conditions:**
  - Skilled labour supply as a result of expansion of educational infrastructure (Universities, and TVET colleges)
  - Improvements in infrastructure particularly power
  - Investments by government and foreigners
- **Demand conditions:**
  - Rising local and regional demand
  - Rising costs in china and India
- **Related and support industries:**
  - Potential for expanding domestic cotton production
- **Firm strategy, structure and rivalry:**
  - Rising competition in the domestic, regional and global markets
- **Government:**
  - Investment in industrial zones and clusters
  - Investment in infrastructure (e.g. railway, dams)
  - Improvements in regional integration through free trade (e.g. COMESA)

#### Threats

- **Factor conditions:**
  - Long delay in realization of infrastructural improvement
  - Climate change
- **Demand conditions:**
  - Increasing international competition mainly from china, south Asia and eastern Europe
  - Shrinking of western economies
- **Related and support industries:**
  - Shortage of local raw material (e.g. cotton)
  - Increasing costs of import-export transportation and logistics
  - Dependence on third country port



## 2.3.2 Leather Industry

The basis for a modern leather industry in Ethiopia was laid when the modern tanning industry was established in the mid-1920s. This sector was originally developed in the context of an import-substitution policy designed to produce footwear to meet domestic demand (EIA, 2008). According to the Leather Industry Development Institute (LIDI), the leather industry has a total of 23 tanning, four footwear, and eight leather goods and garment factories.

The main raw material for this sector, hides and skins, is generated from domestic resources. Unblemished Ethiopian sheep and goat hides are of relatively high quality because of tensile strength and compact fibre structure and are sold at premium prices in the international market. These high quality hides are used for the production of high quality leather, dress gowns, sport shoes, and garments, both in the domestic and international leather manufacturing sectors.

Ethiopia has a very large potential in terms of raw hide production for the leather sector. According to FAO (2009), Ethiopia is ranked 6th globally in the size of the cattle population having a 3.6% share of world cattle population; and 8th in the size of the population of goats having a share of 2.5% of the world total. According to CSA (2012), Ethiopia is endowed with 52.1 million cattle, 24.2 million sheep, and 22.6 million goats. However, having such a resource by itself does not necessarily benefit the country unless there is a high off-take rate and the quality of hides and skins meets the desired standard. In the case of Ethiopia the off-take rate for cattle is 10% (which is below the African average of 13%), 31.7% for sheep, and 32% for goats (closer to the African average of 35% but far below China's 71%) (GDS, 2011). This conveys that the livestock sector does not yield a supply of skins commensurate to its size. Moreover, a considerable portion of the skins processed is not suitable for export because of defects due to ectoparasites which

attack the animals while they are alive, scarring the hides.

Notwithstanding the large potential, the existing firms in the tanning industry are operating at below half of their utilization capacity due to lack of suitable raw hides and skins. In 2008, the Ethiopian government imposed a tax of 150% on the export of raw hides and skins, wet blue and pickled hides and skins in order to encourage domestic value addition.

Ethiopia's large population is an advantage for the leather industry. It creates high domestic demand and is also a source of supply for the labour force. In the leather industry, labour costs are low: skilled: US\$41 – US\$96/month; unskilled: US\$16 - US\$33/month. These rates are two to three times lower for skilled labour and 14 times lower for unskilled workers than comparable Chinese wage rates (GDS, 2010). Though labour costs are low, high labour absenteeism and high turnover rate create challenges for the industry.

In addition, the prices of other factors are relatively cheap compared to other countries. For instance, while the land lease price in Addis Ababa for 60 years ranges from US\$15.22 to US\$ 256.7 per square meter, in regional towns the lease fee is in the range of US\$ 0.58 to 1.01 per square meter for 80 years.

Like other sectors this industry is also subject to challenges because of poor logistics, complicated customs procedures, and lack of access to hard currency to finance imported inputs and spare parts. Since the sector is one of the prioritized sectors, the government has held regular meetings with the private sector, which has partially mitigated the hindrance factors that investors face.

Table 2.13 provides a more detailed SWOT analysis of the leather industry.

**Table 2.13: SWOT analysis of leather industry**

### Strengths

#### ◦ Factor conditions:

- Presence of cheap and trainable workforce
- Improved infrastructure such as roads, energy
- Availability of other factors at low cost such as land
- Targeted access to credit

#### ◦ Demand conditions:

- Growing domestic demand
- Availability of international and regional market access through AGOA, EBA and COMESA

#### ◦ Related and support industries:

- Relatively cheaper supply of hides and skins
- value addition by tanning sectors from semi-processed leather to finished leather increase creates an input for downstream sectors of

### Weaknesses

#### ◦ Factor conditions:

- Low labour productivity
- lacks the necessary production skill leads to high rejection and wastage rates
- insufficient working capital and difficulties to access sufficient capital goods for investments
- Poor quality of electricity services
- Limited management skills
- Limited designing skill
- Lack of international market information
- Old technology, obsolete equipment & lack of spare parts

#### ◦ Demand conditions:

- Weak marketing: weak promotion and advertising, weak market information services



leather industries including footwear glove manufacturing

- Availability of finished leather due to presence of fully mechanised tanning facilities
- Education and training by LIDI to have sufficient knowledge on downstream value chain products and modern manpower-training capacity

◦ **Government:**

- Export-led industrialization strategy, backed by the government
- Institutional infrastructure to support quality, standardization and other services (QSAE)

◦ **Related and support industries:**

- Weak linkages between suppliers and buyers
- Lack of Transfer technology and market linkages of local producers to international market
- longer leads teams at port for imported commodity, lead to low capacity utilization
- Weak product development, design or research development capabilities and little diversification
- absence of commercial production of livestock
- Limited vertical integration
- Lack of quality of finished leather from tanning industries
- Low quality of leather and leather products to meet international standards or demand

◦ **Firm strategy, structure and rivalry:**

- Slow responsiveness to changing world markets
- Lack of consistent and timely delivery
- lack of benchmarking on other industrial engineering techniques
- Insufficient international exposure
- Low capacity to respond to the international demand in terms of quantity and time.
- Limited or no investment in research and Development (R&D)
- Price maximization strategy rather than maximizing market share like Chinese firms

◦ **Government:**

- Absence of technology incubation centers
- Weak university-industry linkages
- Poor government support services (e.g. customs, shipping lines, etc.)

**Opportunities**

◦ **Factor conditions:**

- Skilled labour supply as a result of expansion of educational infrastructure (Universities, and TVET colleges)
- Improvements in infrastructure particularly power
- Investments by government and foreigners

◦ **Demand conditions:**

- Growing domestic, regional and international markets

◦ **Related and support industries:**

- Clustering and networking between formal and informal sector (e.g. Ethio-international footwear cluster) is evolving.
- The establishment of a trade mark or product image "Made in Ethiopia" (currently, ASSC is practicing it).

◦ **Firm strategy, structure and rivalry:**

- Rising wages and production costs in China and India reallocation of factories to those developing countries-enhances competition
- Due to "high pollution and high energy consumption" of the sector, some countries such as China has limited licence to investors in the sector.

◦ **Government:**

- one-stop-shopping for services to begin business
- establishment of industrial zones and clusters
- Investment in industrial zones and clusters
- Investment in infrastructure (e.g. railway, dams)
- Improvements in regional integration through free trade (e.g. COMESA)

**Threats**

◦ **Factor conditions:**

- Climate change

◦ **Demand conditions:**

- The large volumes of uncontrolled imports of footwear from Asia and second hand shoes from Europe and North America which are seriously affecting the local shoe manufacturing industry
- Shrinking of western economies

◦ **Related and support industries:**

- Finished leather quality problem due to the growing spread of ectoparasites ("Ekek").

◦ **Firm strategy, structure and rivalry:**

- Competition from Asian Countries with cheap imports of leather products, without the application of quality standards
- Fast changing fashion trends are difficult to adapt easily with the existing knowhow

## 2.3.3 Basic Metals

The basic metal and engineering industry, one of the priority manufacturing subsectors, is expected to contribute to import substitution for metal and metal products. The manufacturing of basic iron and steel and fabricated metal products has contributed about 2.8% of manufacturing sector value added each in the last five years. The main products include basic construction materials such as bars, hollows, tubes, pipes, and corrugate sheets.

Like other subsectors, this industry is also performing poorly due to, among other things, lack of raw materials, which are mainly imported. According to CSA (2012), the import intensity for basic iron and steel was about 87% between 2006/07 and 2020/11. However, Ethiopia does have some domestic iron ore potential. Studies such as the Japan International Cooperation Agency (JICA) and Ethiopia's Metal Industry Development Institute (MIDI) conclude that the Bikilal iron ore deposit located in the Western part of Ethiopia with an estimated 22 million tons of iron ore could be commercially feasible at current and prospective elevated minerals prices based on direct reduced iron (DRI) processing which involves a minimum efficient scale commensurate with the level of production in Ethiopia currently.

Currently, there are significant constraints on the import of raw materials such as access to credit and hard currency. In addition, the government imposes a 10% surtax and a 5% duty tax on steel. Since the industry's input is reliant on imports, logistical and transportation inefficiencies add additional burdens which contribute to the sector's lack of competitiveness.

Production of basic metal and metal products also requires more technically skilled labour and engineers; such personnel are scarce in Ethiopia.

In terms of demand, since the country is at the early stage of development, there is strong demand for basic metals and fabricated metal products from the construction, power and communication sectors of the economy to mention just a few. As is the case with other sectors, low labour and other factor costs (land, electricity and water) are sources of competitive advantage for the metals sector. Table 2.14 provides a detailed SWOT analysis of the basic metals sector.

**Table 2.14: SWOT analysis of basic metal and metal products**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Long experience in manufacturing basic metal products</li> <li>◦ Low labour and power costs</li> <li>◦ Improved infrastructure such as roads, energy</li> <li>◦ Availability of other factors at low cost such as land</li> <li>◦ Targeted access to credit</li> </ul> </li> <li>◦ <b>Demand condition:</b> <ul style="list-style-type: none"> <li>◦ Fast-growing domestic market</li> <li>◦ Growing regional demand (due to booming construction sector)</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Existence of engineering factories with substantial hardware</li> <li>◦ Low local value chain</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Limited competition in the domestic market</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ High support from the government</li> <li>◦ Presence of an institution which controls quality standard – Quality Standards Authority of Ethiopia</li> <li>◦ Establishment of support institutions such as Metal Industry Development Institute and Metal and Engineering Corporation</li> </ul> </li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ High input costs</li> <li>◦ Low skilled labour such as design engineers</li> <li>◦ Lack access to finance and difficult to access hard currency</li> <li>◦ Obsolete equipment</li> <li>◦ Poor quality of power supply</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Limited conventional downstream products such as basic construction materials</li> <li>◦ High logistics cost</li> <li>◦ Low ICT development</li> <li>◦ Absence of bulky transport systems</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry</b> <ul style="list-style-type: none"> <li>◦ Low capacity utilization</li> <li>◦ Lack of managerial capability</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ High import tariffs</li> <li>◦ absence of manufacturing of basic metal clustering</li> </ul> </li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Presence of Iron ore deposits</li> <li>◦ Expansion of hydro-energy create available power for the high demand of the sector</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Growing domestic and regional demand</li> </ul> </li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ High cost of initial capital</li> <li>◦ Climate change</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Weakening of western economy</li> </ul> </li> </ul>

### 2.3.4 Agro-Processing

Agro-processing refers to processing, preservation and preparation of agricultural production for intermediate and final consumption (UNIDO, FAO, IFAD, 2008). Thus, the scope of the agro-processing industry encompasses all operations from the stage of harvest till the material reaches end users in the desired form, including in terms of packaging, quantity, quality and price.

Agro-processing industries are important for Ethiopia's economic development both as a source of income and employment and through their backward linkages with agriculture. Cognizant of these effects and of the fact that the livelihood of over 85% of the population lies in agriculture, the government of Ethiopia has made agro-processing a priority sector in the GTP. The sector has been among the beneficiaries of sector-specific incentives, particularly for production for exports.

The GTP agro-processing strategy focuses on food and beverage preparations such as processing and preserving meat products, fish and fish products, fruits and vegetables, integrated production and processing of dairy products, processing of starch and starch products, processing of animal feed, processing and bottling of mineral water, brewing and wine-making and so on.

Ethiopia has unique advantages in terms of climatic conditions that position it to produce a wide range of fruits and vegetables. Geographical proximity to the Middle East and Europe, and the availability of competent air cargo provided by Ethiopian Airlines, have enabled the development of a strong presence in the cut flower sector. This highlights the possibilities for agro-processing more generally and makes attractive for investment.

Although Ethiopia is among the top ranked countries in Africa in terms of cattle, sheep, goats and herbs, the country has been importing significant quantities of processed food (Table 2.15). Given that Ethiopia is the second most populated country in Sub-Saharan Africa with a fast growing household incomes, the domestic market would likely provide immediate and sustaining demand for agro-processing sector products. This domestic demand for home-produced products predominantly would mean a useful import-substitution function as well as allowing companies to build their knowledge and capacity in processing. Nevertheless, in the short run, the volume of processed food import will continue to grow with the growth of domestic consumption demand as the domestic food supply capacity falls short of demand for processed food products.

**Table 2.15: Food imports in Ethiopia (% of total import expenditure)**

Food commodities imported	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Pasta	0.57	0.05	0.03	0.03	0.04	0.03	0.04	0.04	0.04	0.07	0.09	0.31
Meat & edible meat offal	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fish and crustaceans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Milk	0.19	0.16	0.16	0.20	0.15	0.14	0.16	0.10	0.09	0.11	0.19	0.11
Other dairy produce, eggs	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01
Edible oils	0.91	1.03	0.60	1.39	1.35	1.64	0.97	1.45	2.74	2.90	2.70	4.13
Other oils & fats	0.75	0.66	0.57	0.98	0.60	0.40	0.51	0.50	0.28	0.25	0.39	0.32
Vegetables	0.21	0.06	0.08	0.31	0.80	0.82	0.34	0.30	0.34	0.53	0.46	0.35
Fruits & vegetable juices	0.08	0.09	0.08	0.06	0.14	0.09	0.08	0.10	0.19	0.11	0.11	0.24
Food products n.e.c.	1.46	3.13	2.02	3.70	1.62	1.43	1.36	1.01	2.13	1.55	1.02	1.59
<b>Total food (% total import expenditure)</b>	<b>4.20</b>	<b>5.20</b>	<b>3.56</b>	<b>6.71</b>	<b>4.71</b>	<b>4.56</b>	<b>3.49</b>	<b>3.50</b>	<b>5.82</b>	<b>5.54</b>	<b>4.97</b>	<b>7.07</b>

Source: ERCA

Despite ambitious government targets and many competitive advantages (like availability of a cheap labour force, a large livestock sector, year-round harvesting potential to supply raw materials,

favourable geographical location and a large domestic market), the agro-processing industry has not performed well. Table 2.16 provides a detailed SWOT analysis of the agro-processing sector.

**Table 2.16: SWOT analysis of agro-processing industry**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Round the year availability of raw materials</li> <li>◦ Cheap and trainable labour forces</li> <li>◦ Following the expansion of universities and TVET programmes, the availability of skilled and semi-skilled labour</li> <li>◦ Suitable climate conditions</li> <li>◦ Availability of cultivable agricultural land</li> <li>◦ Targeted access to credit</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Rising domestic demand</li> <li>◦ Growing regional and global demand</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Improved transport services</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Limited domestic in the local market</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ An important area and support from the government</li> <li>◦ Availability of incentives (fiscal and non-fiscal) for investors who invest in the sector</li> <li>◦ There is an incentive package of employing foreigners so that productivity can be increased by employing experienced foreigners in the sector</li> </ul> </li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ High requirement of working capital particularly for some agro processing industries</li> <li>◦ Limited knowhow and use of modern technology</li> <li>◦ Lack of sophisticated and better accuracy instruments and equipment</li> <li>◦ Inadequate automation with respect to information management</li> <li>◦ Less attractive remuneration for talented workers in comparison to contemporary disciplines which discourage innovation and adoption of technologies</li> <li>◦ Limited finance</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Lack of export infrastructure for perishable commodities (e.g. storage facilities)</li> <li>◦ Logistics inefficiency due to delay of clearances of custom for export and imports</li> <li>◦ Frequent power interruption</li> <li>◦ Limited or absence of linkages between agro-processing industries, technology institutions, laboratories, Universities and R&amp;D facilities.</li> </ul> </li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Large crop and resource base for agro-processing industries</li> <li>◦ Suitable climate condition</li> <li>◦ Integration of developments in contemporary technologies such as electronics, material science, computer, bio-technology etc. offer vast scope for rapid improvement and progress</li> <li>◦ Geographically strategic to Europe and Asia, particularly to Middle East</li> <li>◦ Organic food and beverages</li> <li>◦ Improvements in the supply of energy</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Vast domestic market</li> <li>◦ Large and rising global markets</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Improvements in transport infrastructure (e.g. railway)</li> </ul> </li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Land competition for biofuels</li> <li>◦ Climate change</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Slowdown in international demand</li> <li>◦ Environmental issues- some importing countries may impose environmental issues as a barrier to entry</li> </ul> </li> <li>◦ <b>Firm strategy and, structure and rivalry</b> <ul style="list-style-type: none"> <li>◦ Competition from global players</li> <li>◦ Rapid developments in contemporary and requirements of the industry may lead to fast obsolescence</li> <li>◦ Subsidized production in developed nations- some developed countries subsidized their industries which brings unfair competition</li> </ul> </li> </ul>



### 2.3.5 Sugar Industry

Sugar production in Ethiopia started in 1954/55 when the Wonji Sugar Factory was commissioned and produced 15,843 tons of white sugar in the first campaign (EIA, 2008). Ethiopia is endowed with large areas of suitable lowlands, rivers and a climate conducive for sugarcane production. According to EIA (2008), various pre-feasibility and feasibility studies of sugar projects conducted by the Ethiopian Sugar Industry Support Center Share Company (ESISC) indicate that there are potential sites at the main river basins which are suitable for sugarcane plantation. However, the total area developed for the production of sugarcane in the country is only about 8% of the total identified suitable areas (EIA, 2008).

Like other countries, sugar production in Ethiopia supplies direct household consumption and serves as an intermediate input for other industries such as pastries, soft drinks, and breweries. Per capita sugar consumption in Ethiopia is about 5 kg, which is well below other Eastern African countries such as Kenya and Tanzania and indeed one of the lowest in the world (Table 2.17). With the increase in the purchasing power of domestic consumers due to a rise in per capita income and changing consumption pattern in the urban and rural areas, domestic demand for sugar is expected to increase in the future as well.

**Table 2.17: Average per capita sugar consumption (kgs)**

	2005	2006	2007	2008	2009	2010	2011
<b>Ethiopia</b>	<b>4.4</b>	<b>4.7</b>	<b>4.8</b>	<b>4.9</b>	<b>5.1</b>	<b>5.1</b>	<b>5.1</b>
Kenya	22.6	21.4	19.9	21.5	21.8	21.3	21.4
Ghana	9.6	9.8	9.8	10.0	10.2	10.5	10.8
Nigeria	9.2	9.0	9.3	11.2	8.7	7.1	7.9
South Africa	32.9	36.3	36.7	37.0	37.5	38.5	39.8
Tanzania	7.2	8.0	7.8	7.9	11.0	11.0	11.0
India	19.6	18.0	18.4	19.6	20.7	19.3	18.9
China	9.0	9.1	10.2	11.1	11.2	11.1	11.0
Korea, Rep. of	27.1	24.5	24.6	26.6	25.9	27.2	24.3
Indonesia	18.3	19.3	20.6	22.2	21.9	21.5	22.9
Vietnam	11.0	14.0	15.4	15.9	13.4	14.0	13.2
<b>World (average)</b>	<b>23.4</b>	<b>23.5</b>	<b>23.9</b>	<b>24.5</b>	<b>24.0</b>	<b>24.1</b>	<b>23.7</b>

Source: ISO Sugar Year Book, 2012

Table 2.18 presents trends in sugar production and consumption in Ethiopia. Sugar consumption exceeded production since 2007, leading to increased sugar imports. As a result of increased

consumption demand, export of sugar ceased after 2010. Currently, the sugar industry is monopolized by the government

**Table 2.18: Sugar production and consumption 2004-2011 (million metric tons)**

Year	Production	Imports	Exports	Consumption	Ending Stocks
2004	325	33	17	295	194
2005	345	0	15	320	204
2006	360	25	15	350	224
2007	340	67	26	370	236
2008	340	137	73	390	249
2009	320	1	28	415	127
2010	320	101	0	425	123
2011	350	88	0	440	121

Source: ISO Sugar Year Book, 2012



To fill the domestic demand supply gap, the Ethiopian government has developed a package of incentives for investors engaged in

new enterprises and expansions. Table 2.19 provides the SWOT analysis of the sugar industry.

**Table 2.19: SWOT analysis of the sugar industry**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Cheap and trainable labour forces</li> <li>◦ Availability of skilled and semi-skilled labour due to expansion of universities and TVET programs</li> <li>◦ Cheap lease price of land for sugar cane cultivation.</li> <li>◦ Rising stock of infrastructure</li> <li>◦ Suitable climate conditions</li> <li>◦ Targeted access to credit</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Growing domestic demand</li> <li>◦ Rising regional and international demand</li> <li>◦ New and emerging demand created by biofuels</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Improved transport services</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Missing competition in the domestic market</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Priority industry and receives government support</li> <li>◦ A specific institution called Sugar Corporation has been established to support the industry</li> <li>◦ Incentive packages both fiscal and non-fiscal for investors who invest in the industry</li> </ul> </li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ High requirement of working capital particularly for some agro processing industries</li> <li>◦ Limited knowhow and use of modern technology</li> <li>◦ Lack of sophisticated and better accuracy instruments and equipment</li> <li>◦ Inadequate automation with respect to information management</li> <li>◦ Less attractive remuneration for workers which discourage innovation and adoption of technologies</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Logistics inefficiency due to delay of clearances of custom for export and imports</li> <li>◦ Frequent power interruption</li> <li>◦ Limited or absence of linkages between agro-processing industries, technology institutions, laboratories, Universities and R&amp;D facilities</li> <li>◦ Absence of bulk transport facilities</li> </ul> </li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Suitable land for sugarcane cultivation</li> <li>◦ Geographically strategic to Europe and Asia, Particularly Middle East</li> <li>◦ Improvements in the supply of energy</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Emerging demand for biofuels</li> <li>◦ Vast domestic market</li> <li>◦ Large and rising global markets</li> <li>◦ Growing economy</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Improvements in bulk transport facilities (e.g. railway)</li> </ul> </li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Land competition for biofuels</li> <li>◦ Climate change</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Slowdown in international demand</li> <li>◦ Environmental issues-some importing countries may impose environmental issues as a barrier to entry</li> </ul> </li> <li>◦ <b>Firm strategy and, structure and rivalry</b> <ul style="list-style-type: none"> <li>◦ Competition from global players</li> <li>◦ Rapid developments in contemporary and requirements of the industry may lead to fast obsolescence</li> <li>◦ Subsidized production in developed nations-some developed countries subsidized their industries which brings unfair competition</li> </ul> </li> </ul>



### 2.3.6 Cement Industry

Cement is one of the basic ingredients for the construction industry and it is also a critical commodity for society's needs of housing and basic infrastructure such as bridges, roads, water treatment facilities, schools and hospitals. The ingredients required to make cement are limestone, shell and clay. These raw materials are crushed, and then heated at temperatures in excess of 1000°C in a rotating kiln to become clinker (Lasserre, 2007). At the next level, clinker is mixed with gypsum and ground to a fine powder to produce the final grade of cement. The industry is highly energy intensive.

Cement, being a basic input in infrastructure development, plays a crucial role in economic development. Per capita cement demand and consequently production of cement follow a bell curve pattern in which emerging countries during their high growth phase consume a large quantity of cement because of their needs for infrastructure. Therefore, demand for cement is a derived demand and it is dictated by the state of the construction industry's performance which in turn is related to the country's GDP growth, population growth, and rate of urbanization.

Globally, cement production has grown substantially, driven by robust demand from construction activity in China and other developing parts of Asia as well as in Eastern Europe and Latin

American countries. Cement production in China increased from 1.25 billion tons in 2006 to 1.88 billion tons in 2010. Next to China, India retained the second position with an increasing share over the last five years producing 160 million tons in 2006 and 210 million tons in 2010. Production of cement in countries such as Vietnam, Brazil, and Kenya also showed an increasing trend.

Ethiopia's cement production is comparatively low in global comparison, but has been expanding rapidly, driven by the major infrastructure expansion program currently being undertaken by government and the private sector. In fact, Ethiopia's cement production more than doubled in the past decade, from 945 thousand tons in 2000 to more than 2 million tons in 2010.

The major raw materials required for the production of cement including limestone, sand stone, clay, gypsum and pumice are abundant in Ethiopia. Like other sectors, cement production in Ethiopia also benefits from the large pool of labour and low wages compared to other countries. Reliable power has been a problem with supply being erratic and subject to frequent interruptions. However, the cost per KWH is low and the prospects for adequate supplies of cheap energy are very promising, particularly after the completion of the Great Renaissance Dam. Furthermore, like other sectors, this industry also benefits from a package of incentives to encourage private investment. Table 2.20 describes the industry's strength, weakness, opportunities and threats in detail.

**Table 2.20: SWOT analysis of the cement industry**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Availability of local raw material (limestone, sand stone, Clay, Gypsum and Pumice)</li> <li>◦ Availability of abundant inexpensive labour at low wage</li> <li>◦ Competitive factor costs including land, electricity, water</li> <li>◦ Targeted access to credit</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Growing domestic demand</li> <li>◦ Rising regional and global demand</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Growing transport providers</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Limited competition in the domestic market</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Priority sector in the development plan</li> <li>◦ Availability of investment incentives</li> </ul> </li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Low labour productivity and lack of skilled manpower</li> <li>◦ Lack of supervisory and managerial skills (i.e. Lack of professional expertise within the industry)</li> <li>◦ Shortage of foreign exchange for imports of capital goods</li> <li>◦ Lack of innovation and technology Development centers</li> <li>◦ Limited access to finance as the industry requires high capital</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Erratic and inadequate power supply</li> <li>◦ Absence of bulk transport services</li> <li>◦ Logistics and transportation disadvantages Transportation of cement – mostly by roads in Ethiopia -- from plants (located near limestone reserves) to end users is an expensive process</li> </ul> </li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Expansion of tertiary education-basis for growing skilled labour force</li> <li>◦ Massive investment infrastructure such as railway, dams, etc.</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Growing domestic demand for cement</li> <li>◦ Rising regional and global demand</li> </ul> </li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Increasing fossil fuel price which tends to increase the transportation cost</li> <li>◦ Climate change</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Regulatory tightening for quarrying of limestone over environmental issues.</li> </ul> </li> </ul>

## 2.3.7 Pharmaceutical Industry

The pharmaceutical sector is a high-technology and knowledge-intensive industry based on development of new products emerging from research breakthroughs and general developments in scientific knowledge (Allen Consulting Group, 2005). Modern pharmaceutical manufacturing facilities are capital intensive, R&D intensive, and require highly skilled labour. As a result, the pharmaceutical industry is characterized by a high level of concentration with a few multinational companies dominating the industry. The sector has three linked activities: manufacture of active pharmaceutical ingredients and intermediates, production of finished dosage forms from active pharmaceutical ingredients and excipients, and final packaging of finished dosage forms or repackaging of bulk finished products (EAC, n.d.).

Ethiopia's pharmaceutical sector is guided by the National Drug Policy (NDP), which was developed in 1993. The pharmaceutical

sector is regulated by the Drug Administration and Control Proclamation No. 176/99. The health policy of the country emphasizes preventative health care and thus access to appropriate medicines is of paramount importance to prevent diseases. With Ethiopia being the second most populated Sub-Saharan African country and experiencing rapid population growth, the demand for medicines and health supplies is expected to grow.

Demand for generic essential medicines is driven by the absolute size of the disease burden and interventions to reduce this burden. Malaria remains the leading killer disease and the demand for malaria medicines continues to grow both in the public and private sectors in Ethiopia. HIV prevalence, although reduced recently, is still a big threat as the number of people requiring HIV/AIDS treatment and care is increasing. There are interventions to scale up HIV/AIDS treatment and care services. Table 2.21 provides the SWOT analysis of the pharmaceutical industry.

**Table 2.21: SWOT analysis of the pharmaceutical industry**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Expansion of tertiary education-basis for growing skilled labour force</li> <li>◦ Massive investment infrastructure such as railway, dams, etc.</li> <li>◦ Availability of relatively inexpensive skilled and semi-skilled labour</li> <li>◦ Competitive factor costs including land, electricity, water</li> <li>◦ Rising stock of hard infrastructure</li> <li>◦ Suitable and varied climate</li> <li>◦ Access to credit</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Inelastic demand for medicines</li> <li>◦ Rising domestic demand</li> <li>◦ Growing regional and international demand</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Improved transport providers</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Limited competition in the domestic market</li> <li>◦ Low participation of the private sector</li> <li>◦ Weak competition in the regional market</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Investment Incentive Scheme</li> <li>◦ Priority sector in the development plan; strong government initiatives to promote local pharmaceutical production</li> </ul> </li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Inadequate resources for new product development (i.e. low R&amp;D budget)</li> <li>◦ Requires high capital and knowledge</li> <li>◦ Shortage of foreign exchange for imports of capital goods and other inputs</li> <li>◦ Lack of innovation and modernized technology development;</li> <li>◦ Continuous rise of imported inputs increases the cost of production</li> <li>◦ Limited financial capital</li> <li>◦ Rising cost of raw materials</li> </ul> </li> <li>◦ <b>Demand conditions:</b> <ul style="list-style-type: none"> <li>◦ Slow economic growth in advanced and emerging countries</li> </ul> </li> <li>◦ <b>Related and support industries:</b> <ul style="list-style-type: none"> <li>◦ Erratic and inadequate supply of utilities (e.g. power and water)</li> <li>◦ Absence of bulk transport services</li> <li>◦ Logistics and transportation disadvantages</li> <li>◦ Laboratories and research institutes involved in preclinical and clinical testing</li> <li>◦ Poor and under-funded health infrastructure</li> </ul> </li> <li>◦ <b>Firm strategy, structure and rivalry:</b> <ul style="list-style-type: none"> <li>◦ Strong competition from imports from industries enjoying economies of scale</li> <li>◦ New entrants threatens domestic manufacturers</li> </ul> </li> <li>◦ <b>Government:</b> <ul style="list-style-type: none"> <li>◦ Weak regulatory system of pharmaceuticals and medical supplies</li> </ul> </li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ Increasing political stability</li> <li>◦ Rising level of skilled labour</li> <li>◦ Rapid development in infrastructure</li> </ul> </li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>◦ <b>Factor conditions:</b> <ul style="list-style-type: none"> <li>◦ High investment costs</li> <li>◦ Climate change</li> <li>◦ Regional political instability</li> </ul> </li> </ul>



- Climate change
- Support from development partners
- **Demand conditions:**
  - Rising population
  - Existence of domestic, regional and global pharmaceutical market
  - Changing pattern of lifestyle and urbanization
  - Rising regional and global demand
  - Growing economy
- **Related and support industries:**
  - Improvements in transport providers
- **Firm strategy, structure and rivalry:**
  - Low competition in the domestic market
- **Government:**
  - Establishment of Product Patent law

- Continued emigration of trained medical personnel
- **Demand conditions:**
  - High cost of locally manufactured products compared to imports
  - Counterfeits and diverted medicines
  - The tendency of people to use traditional and spiritual medications
  - Slowdown in economic growth in advanced and emerging economies
  - Limited purchasing power
- **Related and support industries:**
  - Lack of local supply of active pharmaceutical ingredients and primary raw materials
  - Poor distribution network for medicines
- **Government:**
  - Weak regulatory and monitoring mechanisms
  - Unregulated parallel pharmaceutical trade









### 3. POLICY OPTIONS: HARNESSING OPPORTUNITIES AND EASING THE CONSTRAINTS TO MANUFACTURING

#### 3.1 Long-term Vision

Industrial development is triggered by ‘drivers for structural change’ that cause fundamental changes in the structure of the economy. These drivers include factors such as technological change and innovation, increased competition and the emergence of new competitors, significant shifts in consumer demand, changes in legislation/regulation (e.g., safety and environmental legislation), increased availability of inputs, improved market access, etc. The Growth Commission’s report assessed the experience of 13 countries that achieved annual growth rates of seven percent or more for at least 25 years. The report identified “committed,

credible, and capable governments” as one of five characteristics of high-performing countries. Additional elements central to transforming the industrial sector include: mid- to long-term vision for development strategies; flexibility in responding to a changing environment; and close ties between the government and the private sector, which enable the harnessing of the private sector’s capacity to the maximum.

Ethiopia’s long-term economic vision is well articulated in the GTP: “building an economy which has a modern and productive agricultural sector with enhanced technology and an industrial sector that plays a leading role in the economy, sustaining economic development and securing social justice and increasing per-capita income of the citizens so as to reach the level of those in middle-income countries” (MoFED, 2010:21).

The GTP sets medium-term targets that envisage triggering structural change under base case and high growth path scenarios (Table 3.1).

**Table 3.1: Projected real GDP and its components (%), base case scenario**

Sector	2009/10 (Base)	2013/14		2014/15	
		Base case	High case	Base case	High case
Agriculture & Allied Activities	7.6	8.6	17.1	8.7	18.4
Industry	10.6	23.0	23.7	23.7	27.9
Services	13.0	9.5	11.8	9.0	10.9
<b>Real GDP</b>	<b>10.4</b>	<b>11.2</b>	<b>15.6</b>	<b>11.4</b>	<b>16.6</b>

Source: MoFED (2010)

However, the IMF has questioned the Government of Ethiopia’s GDP growth data for the period since 2008 since many of the requisite factors for double-digit growth have not been in evidence in Ethiopia. The GTP’s projected GDP growth figures are therefore open to question on the same grounds. Moreover, in the first two years of the GTP period, there have been significant deviations from the targets, with disappointing performances from the agricultural and industrial sectors. The agricultural sector grew by 4.9% in 2011/12, below the base case scenario (8.5%). Similarly, the industrial sector grew by 11.1% over the same period, compared with the base case growth rate of 17.9%. Accordingly, the realism of the targets indicated in the plan is open to question.

In the GTP, the manufacturing sector has been accorded due attention. The development of the manufacturing sector has been recognized as key for structural change and sustained growth and development. However, the aggregate growth targets are not supported by more detailed explanations concerning variables such as total factor productivity, skill set requirement, labour

productivity, etc. While there is a productivity target for agricultural yields, there are no productivity targets for the manufacturing sector.

The manufacturing sector has also under-performed compared to GTP targets. The Government of Ethiopia has recognized this. In a recent mid-term evaluation, the Ministry of Industry has acknowledged the shortfalls in progress and indicated that it has adopted new strategies for the remaining years of the GTP period to meet the manufacturing targets (see MoFED, 2013b for details)<sup>11</sup>

#### 3.2 Product Relatedness and Structural Transformation

Ethiopia’s economy has not undergone a significant structural change over the last two decades. The potential of its industrial sector to compete internationally and to generate employment opportunities remains largely unfulfilled. Manufactured exports have grown relatively sluggishly and the value per capita remains relatively low, even by Sub-Saharan African standards.

<sup>11</sup>See Ethiopia Investor “Ministry of Industry to Increase Efforts to Make Manufacturing the Leading Sector of the Economy”. In addition, the Ministry of Industry is developing an industrial development roadmap for the country. A key aspect of the roadmap is that it contains details and implementation plans classified in phases, but it lacks analytical foundation.

## 3.2.1 Agricultural Resource Base

To achieve the transformational objective, the government has developed sectoral targets for the plan period. Industrial

transformation would be difficult to envisage without transformations in the agriculture and service sectors. Table 3.2 indicates targets for the agriculture and rural development in the planning period.

**Table 3.2: Targets for agriculture and rural development under the GTP**

Description of Targets	2009/10	2014/15
<b>Cultivated land</b>		
° Total cultivated land utilised by major food crops (mln ha)	11.25	12.17
° Production of cereals (mln ha)	9.1	9.6
° Cereals productivity (qt/ha)	17	22
<b>Coffee production and productivity</b>		
° Cultivated land by smallholder farmers (ha)	462,000	815,000
° Coffee production (tons)	341,000	831,000
<b>Livestock development</b>		
° Cattle feed production (qts)	50,000	145,000
° Improved cattle breeds (%)	10.3	37
° Production and distribution of improved livestock gene (mln doses)	0.35	2
° Proportion of livestock vaccinated (%)	40	65
° Proportion of low-grade hides and skins (%)	50	15
° Production of improved animal fodder seeds (qts)	50,000	145,000
<b>Agricultural inputs supply</b>		
° Supply of improved seeds (mlnqts)	0.56	3.6
° Supply of chemical fertilizers (both DAP and Urea) (mln tons)	0.83	1.66
<b>Improving soil fertility</b>		
° Areas under Vertisol development (mln ha)	0.60	3
° Acidic land treated with lime (ha)	2210	37850
<b>Small Scale Irrigation Program</b>		
° Land developed under small scale irrigation (mln ha)	853	1850
° Production of coffee, tea, and other export crops (mln tons)	0.251	1.81
° Transfer nearly 3.3 mln ha of land to commercial farming investors in transparent and accountable manner		

Source: MoFED (2010)

## 3.2.2 Population Growth and Workforce

With an estimated population of 83.2 million in 2011/12, Ethiopia is the second most populous country in Africa. About 54% of the population is of working age and each year approximately an additional 1.2 million people join the workforce every year (MoFED, 2010). Ethiopia has also been improving its human capital: the skilled and semi-skilled labour force is growing owing to the expanding TVET and tertiary education in the country. The quality of human development is also improving due to improved access to education and to health services. The country's human development index (HDI) score increased on average by about 5.4% per year between 2005 and 2012.

## 3.2.3 Urbanization

Ethiopia's urbanization rate is about 16%, which is by far lower than the average sub-Saharan African urbanization rate of 30%. The degree of urbanization is, however, expected to continue to increase in the coming decades. Given the importance of

urbanization for manufacturing development, urban development has been given due emphasis by the government. Efforts have been made to expand urban centers and to improve basic infrastructure in urban centers.

## 3.2.4 Other Resource Development

Mineral exploitation is of paramount importance to different sectors of the economy, including agriculture, industrial development, construction, energy and others. According to geological studies, Ethiopia has substantial deposits of gold, tantalum, platinum, nickel, potash, and soda ash. It also has large deposits of minerals that are crucial for the construction and industrial sectors, such as marble, granite, limestone, clay, gypsum, gemstone, iron ore, coal, copper, silica, diatomite, etc.

The country also has huge potential for renewable and non-renewable energy resources. Nine of its major rivers are suitable for hydroelectric power generation. Feasible hydropower potential is

estimated at 45,000 MW and total electricity generation is expected to increase to 10,000 MW by the end of the GTP period (2014/15). In addition, the country has large potential geothermal energy resources. There are also opportunities for oil and natural gas exploration and development in the major sedimentary basins, such as the Ogaden, the Gambella, the Blue Nile, and the Southern Rift Valley. Currently, the Ethiopian government is undertaking massive investment in developing hydropower as well as geothermal and wind energy.

### 3.2.5 The Case for a Manufacturing Development Framework for Structural Transformation

In line with Ethiopia's economic vision, as well as its resource endowment, there is a need for a well-articulated forward-looking manufacturing development framework. The GTP's framework intends to provide direction to the development path of the manufacturing sector in the short, medium, and long term. In the short term, priority can be given to low-technology and resource-based manufacturing. These industries include food processing and beverages, textiles and garments, leather and leather products, cement, and sugar and sugar-related industries. These industries use local resources (e.g., agricultural products and electricity) and are less skill-intensive, consistent with Ethiopia's current endowments. This is a reasonable approach to the first stages of the transformation.

In the medium term, the manufacturing framework needs to focus on medium-technology manufacturing industries, such as metals and engineering, machinery and equipment, chemicals, etc. With rising skill-intensity and capacity, the transition from resource-based and low-technology manufacturing industries opens avenues for more competitive manufacturing industries with strong inter-sectoral linkages.

The last phase of manufacturing industry development involves a move towards high-technology, skill-intensive manufacturing industries, such as pharmaceuticals, organic chemicals, and automotive products, enabled by the accumulation of capabilities. The manufacturing development framework entails diversification and structural transformation through sequential and focused implementation of the different phases of industrialization.

## 3.3 Harnessing Technology, Innovation, Productivity, and Linkages

The major constraints for the functioning and growth of the industrial sector have been mainly inadequate human resource capabilities, such as technical and managerial skills; shortages of foreign exchange to import important raw materials, spare parts, and other inputs; electrical power supply disruptions; managerial deficiency; and constraints on access to efficient and effective credit and other services. The transition from an agricultural to an industrial economy involves both adoption of existing technology and adaptation of existing technology to suit local conditions, which, in turn, depend on the level of human capital and domestic capabilities. These properties enable an economy to master

imported technologies, adapt them to local conditions, make improvements, and finally use them as a base for creating innovations locally (Wolf, 2007).

### 3.3.1 Education and Training

Education and training play a pivotal role in technology transfer and innovation. Despite massive investment in education and training, especially in TVET and tertiary education, the quality of Ethiopian university graduates has remained a concern. One issue is the mismatch between the skills taught and those demanded by the manufacturing sector, which is reflected in the rising share of the educated unemployed (Broussard et al. 2012). Discussions with stakeholders also indicate that there is a gap between the quality of graduates' vis-à-vis labour demand required by the manufacturing sector. There is weak or absence of active and functional university-industry linkages in the form of research (e.g. between industry actors and research centres of universities), student internship within industries, etc. Another issue is inadequate or unavailability of laboratory equipment for science and engineering students. The Ethiopian government has introduced a new rule for public university entrants to address the skill needs of the economy: 70% of all new entrants will be allocated to engineering and natural science programs while 30% will be placed in social science and business programs.

Specific measures to address the human resources issues in Ethiopia include:

- Benchmark Ethiopia's education and training systems against major competitors in terms of quantity, quality, relevance, and cost effectiveness, and identify areas of improvement;
- Develop a program to link vocational training institutions and universities with industry;
- Set up training centers in industrial parks, high-tech parks, and export processing zones;
- Conduct regular skills audits, particularly in TVETs; and
- Encourage enterprise training with subsidies and tax exemptions.

### 3.3.2 Science, Technology, and Innovation Policy

In 2010, Ethiopia adopted a science, technology, and innovation (STI) policy to support technology adoption (e.g., leveraging technology transfer through public procurement, FDI inflows, and intellectual property protection). At the highest level, the implementation of the policy framework is overseen by the Science, Technology, and Innovation Council, which is led by the Prime Minister. This Council evaluates annual progress in the area of technology and innovation and provides awards and recognition certificates. The Ministry of Science and Technology (MoST) is responsible for facilitating importation of appropriate technologies, establishing technology transfer systems using FDI, diffusing imported technology into local industries, and setting up necessary institutions to address issues such as intellectual property rights (IPR) and industry standards.

The STI policy considers universities, government research institutes, and industries as major actors in the national innovation system. In particular, it focuses on priority manufacturing industries for technological capacity-building activities. However, the role played by STI policy in Ethiopia's development has been limited. Although it is too early to evaluate existing initiatives, there seems very little awareness about STI policy within public institutions such as universities and research institutes. Furthermore, explicit targets are not indicated in sectoral government strategies and plans.

A key feature of the country's institutional landscape is the weakness of links among institutions, including between higher education, research institutes, and the private sector. There are no university-linked clusters; accordingly, universities are unable to support local industries in overcoming technical challenges.<sup>12</sup>

FDI is a key instrument for technology transfer and capability-building, as witnessed in Asian countries. However, the inflow of FDI to Ethiopia has been low. Policies and institutions for attracting FDI are therefore a key tool in technology transfer and domestic capability building.

For Ethiopia to transition from a "factor-driven" to an "innovation-driven" economy, it must substantially narrow these critical gaps related to science, technology and innovation.

- Examine the structure, capabilities, and relevance of technology institutes, including R&D support, regional technology centers, and technology financing;
- Launch a technology foresight exercise to raise awareness of industry's technological weaknesses and create a consensus between industry, research institutes, and the public sector on required measures to remedy those weaknesses;
- Establish a program to stimulate linkages between industry and science and technology infrastructure (R&D laboratories and universities), including by restructuring and furnishing laboratories, by encouraging the placing of research students in industrial establishments, by creating joint research awards for industry and universities to encourage collaboration on subjects of relevance to industry, and by providing incentives to university research staff to work with industry;
- Set up a technology import information service or database to collect data on foreign sources of technology and design technology screening mechanisms; such services are extremely active in the "tiger" economies with online links in all major industrial areas. SMEs find such services particularly helpful for overcoming information gaps they face in accessing new technologies;
- Establish technology incubation centers;
- Initiate a technology finance system, either by setting up a

venture capital company or by establishing technology "windows" in existing financial institutions. However, technology financing requires special skills and a very different orientation from normal banking, so this would call for very careful handling, as the banking system in Ethiopia has not developed well.

### 3.3.3 Improving the Business-Enabling Environment

Ethiopia does not perform well on many of the Doing Business indicators, such as starting a business, trading across borders, getting credit, registering property, etc. Ethiopia's "dis-enabling" business environment reduces the competitiveness of its manufacturing firms by significantly raising transaction costs for its enterprises relative to those in competitor economies. This calls for improving the business environment across the board to increase competitiveness.

#### 3.3.3.1 Infrastructure

The quality of transport infrastructure affects enterprise performance in various ways. Improved transport infrastructure can lower production costs and raise the productivity of firms. Despite massive investments in road infrastructure, both the extent and quality of Ethiopia's road network remains low. Freight costs, including custom clearances, comprise a significant share of the final price of manufactured products. Inefficient logistics services impede trade by imposing extra costs on firms. Ethiopia's telecommunications capacity and quality remain low, impeding connectivity of the enterprise sector to the global economy. Despite considerable potential and large ongoing investments, power supply remains haphazard. And there are still relatively few modern industrial parks where the concentration of activity encourages learning spillovers, including from foreign-invested enterprises to locally owned enterprises.

- Given that both Ethio-Telecom and Ethiopian Electric Power Corporation are state-owned, it is crucial to increase efficiency of service delivery by giving autonomous management power to managers to act like private companies;
- Disentangle the production and distribution of power to address power distribution failures;
- Expand industrial zones in major cities and towns, including by developing supporting infrastructure;
- Encourage and promote a multimodal transportation system and enhance competition;
- Build the capacity of the transport sector by creating linkages with universities and research institutes; Increase the use of modern modes of transport by providing loans and technical assistance; and
- Connect major regions of the country through investment in

<sup>12</sup> Addis Ababa University is in the process of establishing a Business School and a business incubation centre within the university premises with support from the European Union.



railway infrastructure.

### 3.3.3.2 Finance

Firms in Ethiopia have complained both about the lack of access to investment capital needed to expand their operations and about the difficulty in obtaining working capital needed for their operations. Private sector access to finance in Ethiopia is extremely limited. The Development Bank of Ethiopia (DBE) plays a key role in financing the manufacturing industry, especially through the favourable terms of its 70:30 loan policy for priority industries. However, many firms have reported challenges in accessing capital through this route.

Three issues are worth mentioning regarding the financial sector. First, because of Ethiopia's limited capital supply, banks simply do not have sufficient funds, especially to lend to firms undertaking large investments. Second, the banking sector is very underdeveloped, owing to its relatively short history, limited exposure to international best practices in cash flow based lending, and lack of sophisticated lending products. Third, foreign exchange delays can significantly exacerbate challenges related to importation of key manufacturing inputs.

Specific measures to improve access of manufacturing firms to finance include:

- Provide special incentives (including suspending some restrictions) to enable banks to provide loans to priority sectors;
- Establish a special window dedicated to providing loans to priority manufacturing industries;
- Encourage the DBE to provide loans to import-substituting and export-oriented manufacturing firms;
- Increase the domestic savings rate and find ways to access foreign capital through FDI;
- Improve the quantity, quality, and type of exports to ameliorate the foreign exchange problem (in the short run, this can be done by prioritizing public policy support for exporters and suppliers to exporters); and
- Provide a supportive regulatory environment to foster development of non-banking financial institutions (NBFIs) such as factoring houses. NBFIs play an important role in finance by providing new and different types of lending products. As well, competition from NBFIs can help spur banks to evolve their approach.

### 3.4 Scope for Benefits from Regional Integration

Ethiopia is engaged in both multilateral and various regional trade negotiations in which it is being pressed to substantially reduce the level of border protection and to bring its trade policy into conformance with WTO rules, including its non-tariff measures. These negotiations include accession to the World Trade Organization (WTO), the Economic Partnership Agreement (EPA) with the European Union, the Common Market for Southern and Eastern Africa (COMESA), the Tripartite free trade area (TFTA) (consisting of COMESA, the EAC, and Southern African Development Community (SADC) member countries), the Inter-governmental Authority for Development (IGAD), and the Sana'a Forum for Co-operation (SFC). Being a least developed country (LDC), Ethiopia enjoys duty-free and quota-free access (DFQF) to major export markets, including the US through the African Growth and Opportunities Act (AGOA)<sup>13</sup> and the EU under the Everything but Arms initiative (EBA).

The basic idea of using regional integration as a stepping stone to global competitiveness is that, within a region composed of small economies with low levels of technology and limited market size, regional integration enables local firms to access learning by doing and scale effects which help prepare them to face global competition. From a manufacturing policy perspective, it is an important question whether intra-regional trade is more manufacturing-intensive than international trade in general. If so, regional trade agreements can accelerate the development of industrial capabilities.

Consistent with expectations based on comparative advantage, Ethiopia exports to advanced countries such as the EU and the United States consist mainly of unprocessed commodities. In 2012, for instance, the top five export commodities to the EU were coffee, flowers, pulses, apparel and accessories, and leather products, which together accounted for 28% of Ethiopia's total merchandise exports. Similarly, coffee, oilseeds, shoes and other footwear, apparel and accessories (textiles), and animal products were the top five exports to the United States over the same period.

About one quarter of Ethiopia's exports are to its immediate neighbours and regional COMESA partners (Table 3.3). Between 2008 and 2012, exports to this group grew faster than any to any major market except China, and by 2012 accounted for just under 25% of Ethiopia's global exports, a significant increase from the corresponding share five years earlier.

<sup>13</sup>Market access opportunities through AGOA will expire in 2015. Initial indications suggest this opportunity will be renewed for some time.



**Table 3.3: Ethiopia's exports to selected markets, 2008-2012**

	2008	2009	2010	2011	2012	2008-2012 Average Growth
World	1,601,835	1,618,166	2,329,793	2,614,892	4,066,781	26.2%
Export Values (US\$ '000)						
EU28	561,325	485,435	711,005	881,456	1,384,316	25.3%
Regional Partners	229,403	286,053	497,830	564,799	1,005,931	44.7%
COMESA	152,487	151,340	273,708	321,488	481,825	33.3%
Somalia	76,916	134,713	224,122	243,311	524,106	61.6%
Shares of Total						
EU28	35.0%	30.0%	30.5%	33.7%	34.0%	
Regional Partners	14.3%	17.7%	21.4%	21.6%	24.7%	
COMESA	9.5%	9.4%	11.7%	12.3%	11.8%	
Somalia	4.8%	8.3%	9.6%	9.3%	12.9%	

Source: International Trade Centre Trademap

EU member countries are the main sources of market for the country's exports, accounting for on average 30% of total merchandise exports between 2001 and 2012. Although the share of EU has shown a declining trend, especially between 2006 and 2009 due to the recession, it is still the main destination of the

country's export commodities. In 2012, the top five export commodities to EU were coffee, flowers, pulses, wearing apparels and accessories, and leather products, which together accounted for 28.2% of total merchandise exports compared with 20.9% in 2001 (Table 3.4).

**Table 3.4: Share of top ten commodities exported to EU (% of total merchandise exports)**

Export product	Share in merchandise export in 2001	Export product	Share in merchandise export in 2005	Export product	Share in merchandise export in 2012
Leather	12.10	Coffee	25.22	Coffee	18.59
Coffee	6.53	Leather	4.27	Flowers	6.11
Textiles & Related Materials	0.72	Prepared Food stuffs	3.58	Pulses	1.38
Chat	0.48	Pulses	1.76	Wearing Apparels & Accessories (textile)	1.27
Pulses	0.45	Oilseeds	1.22	Leather	0.82
Oilseeds	0.40	Flowers	0.94	Chat	0.52
Animal Products	0.09	Textiles & Related Materials	0.46	Oilseeds	0.38
Wearing Apparels & Accessories (textile)	0.06	Chat	0.41	Textiles & Related Materials	0.14
Spices	0.06	Wearing Apparels & Accessories (textile)	0.24	Shoes & Other	0.09
Shoes & Other Footwear	0.02	Spices	0.23	Footwear	0.06
				Animal and Vegetable Oils, Fats & Waxes	0.06

Source: ERCA

Between 2001 and 2012, COMESA absorbed about 10.9% of the country's total merchandise exports. In 2012, the top ten export commodities to COMESA member countries accounted for only 8.1% of the total exports (Table 3.5). The top five export commodities were live animals, chat, pulses, coffee, and spices.

The country exports mainly unprocessed or primary commodities to COMESA countries, which the country has little to benefit. Within the COMESA trading bloc, Sudan, Djibouti, Egypt, Libya and Kenya were the top five importers of Ethiopia's products in 2012.



**Table 3.5: Share of top ten export commodities to COMESA countries**

Product	Share in total exports in 2001	Product	Share in total exports in 2005	Product	Share in total exports in 2012
Chat	8.07	Chat	2.94	Live animals	3.78
Coffee	4.67	Coffee	0.95	Chat	1.50
Leather	1.22	Live animals	0.93	Pulses	0.11
Oilseeds	0.95	Oilseeds	0.78	Coffee	1.00
Vegetables, Potatoes, Roots & Other Tubers	0.87	Vegetables, Potatoes, Roots & Other Tubers	0.62	Spices	0.73
Prepared Food stuffs	0.29	Pulses	0.57	Vegetables, Potatoes, Roots & Other Tubers	0.33
Fruits	0.28	Spices	0.29	Oilseeds	0.27
Spices	0.24	Prepared Food stuffs	0.26	Wearing Apparels & Accessories (textile)	0.13
Pulses	0.23	Fruits	0.20	Animal products	0.12
Textiles & Related Materials	0.17	Animal products	0.10	Fruits	0.11

Source: ERCA

Ethiopia's exports to its regional partners also consist chiefly of basic agricultural and mineral commodities, albeit to a somewhat lesser extent than its exports to the rest of the world: for example, in 2012, exports of basic agricultural products (HS chapters 1 and 2) plus raw hides, cotton and gold constituted 90.6% of Ethiopia's exports to COMESA partners but 96.5% of Ethiopia's exports to the rest of the world, with the difference explained in good measure by Ethiopia's growing share of assembled motor vehicles exports in its COMESA trade. Accordingly, value chain linkages are weak and "learning by exporting" opportunities are relatively scarce in Ethiopia's export production both regionally and globally, although in a relative sense more so globally.

The top five main imports were mineral fuels, machinery, vehicles (other than railway), electrical equipment, and iron and steel, accounted for on average 54% of total imports between 2001 and 2012. Ethiopia's imports consist largely of capital goods and manufactured consumer goods from advanced and emerging economies. Thus, regional integration, in which Ethiopia has hesitated to participate, would provide a modest advantage in developing its manufacturing sector, but it is likely that Ethiopia must also look to global value chain participation in light manufactures to more rapidly move up the technology ladder.

**Table 3.6: Ethiopia's main imported products (% Share in total merchandise imports), 2001-2012**

Product label	2001	2005	2010	2011	2012
Mineral fuels, oils, distillation products, etc.	17.72	15.57	19.09	18.34	19.65
Machinery, nuclear reactors, boilers, etc.	10.46	14.39	12.97	12.93	13.10
Vehicles other than railway, tramway	9.44	9.36	9.72	10.05	11.07
Electrical, electronic equipment	6.54	10.37	13.13	7.04	7.66
Iron and steel	4.56	6.05	3.71	5.09	5.83
Fertilizers	2.47	2.40	2.86	3.83	4.94
Cereals	8.43	5.67	4.35	5.30	3.56
Animal, vegetable fats and oils, deavage products, etc.	1.70	1.88	3.03	4.40	3.45
Pharmaceutical products	2.10	3.52	2.91	1.36	3.41
Artides of iron or steel	2.87	3.15	3.96	2.37	3.27
Plastics and artides thereof	2.64	3.20	2.59	3.19	2.91
Rubber and artides thereof	2.89	1.82	1.94	1.81	1.77
Sugars and sugar confectionery	0.21	0.45	1.35	2.06	1.42
Optical, photo, technical, medical, etc.	1.73	1.81	1.47	1.52	1.32
Miscellaneous chemical products	1.57	0.93	1.18	1.15	1.17
Artides of apparel, accessories, not knit or crochet	1.22	1.29	0.90	0.94	1.04
Manmade filaments	1.79	1.60	1.11	1.16	0.97
Paper and paperboard, artides of pulp, paper and board	2.01	1.35	0.99	1.19	0.95
Furniture, lighting, signs, prefabricated buildings	1.05	1.13	0.86	1.25	0.88

Source: UN COMTRADE

Three considerations support the argument for focussing first on global integration, at least in the short-run. First, many countries in the region produce and export similar products (mainly agricultural commodities). Second, border infrastructure is under-developed, including truck roads and railway lines. The major project to upgrade the 710 km rail and road corridor from Addis Ababa to Djibouti, which includes the implementation of six smart corridor modules to facilitate trade along that corridor, promises to be in place at an early date and will greatly facilitate Ethiopia's participation in global markets and value chains. Third, regional integration on the FTA or Customs Union model that falls short of free circulation of goods does not result in a seamlessly integrated regional market due to complex and restrictive rules of origin. The capacity of regional firms to utilize preferences for goods with higher levels of processing and complexity is limited by the need to import inputs from more advanced countries, and by the challenges of meeting the documentary requirements of rules of origin in terms of tracing and accounting for regional input content given scarcity of skilled workers and the limited penetration of formal business accounting and record-keeping practices in the region. Most importantly, as the literature on preference utilization demonstrates, smaller trade transactions tend to pay the MFN tariff because the fixed costs of compliance with ROOs can outweigh the benefits. Accordingly, in Ethiopia's context, where most manufacturing firms are small and trade transactions in the region are likely to also be small, the propensity to utilize preferences will be commensurately small.

This is not to say that regional integration would be without benefit. Given the size of the population and the rapidity of economic growth in the COMESA region, regional integration could in principle induce greater demand for regionally manufactured goods, intensify competition, and enable learning by doing in basic industrial processes. These potential benefits of regional integration cannot be realized to a significant extent, however, unless infrastructural constraints are relaxed through regional planning and investment and regional integration progresses to the free circulation model. If the current economic performance of many African countries continues, then there will be a huge market for Ethiopia's products. In order to exploit this opportunity, the country needs to develop its manufacturing sector and should be able to supply products that could penetrate the regional market.

### 3.5 Lessons from Experience

In East Asia, early-stage industrial development models varied from country to country, but all featured export orientation, sound macro management, and building a good base of skills (Lall 2004). Other common factors include the adoption of a mid- to long-term vision for development and strategies, flexibility in responding to a changing environment, and close ties between government and the private sector, which enabled public policy to harness the private sector's capacity to the maximum. At the same time, although there were similarities in some policy instruments, each country pursued different objectives and used different interventions which resulted in differing patterns of industrial and export growth.

#### South Korea:

- Adopted the most interventionist strategies to energize the industrial sector, covering almost all markets;
- Actively promoted indigenous enterprises and strengthened domestic technological capabilities;
- Supplemented the domestically driven technological upgrading by inviting inward FDI as a vehicle to import foreign proprietary technology;
- Sheltered the domestic market from unfettered trade competition;
- Provided both quantitative and tariff protection to infant industries to develop their capabilities;
- Relied primarily on capital goods imports, technology licensing, and OEM agreements to acquire technology;
- Used reverse engineering, adaptation, and own product development to build domestic capabilities (Lall 2004; Westphal 1990);
- Actively promoted industrial R&D; and
- Provided, in addition to direct interventions to support local enterprises, selective and functional support by building a massive technology infrastructure and creating general and technical skills.

One of the unique attributes of South Korea's industrial strategy (akin to Japan's) is its deliberate creation of large private conglomerates. Their government handpicked successful exporters to receive various subsidies and privileges (e.g., restrictions on MNC entry) in return for furthering the setting up of capital and technology-intensive activities geared to export markets.

#### Singapore:

- Used highly interventionist policies to promote and deepen industry, but in a more liberalized economic setting. The industrial sector received strong policy support;
- Relied heavily on MNCs and inward FDI to achieve its objectives;
- Selected and targeted activities for promotion;
- After initially following import substitution policies, moved into FDI-driven export-oriented industrialization;
- Acted firmly to upgrade the industrial structure after a decade or so of light industrial activity;
- Guided MNCs to activities with higher value-added, narrowly specialized, and integrated into their global operations;
- Intervened extensively to create the specific skills needed; and
- Set up public enterprises to undertake activities considered to be in the country's strategic interest, where foreign investment was unfeasible or undesirable.

#### Taiwan:

- Employed import protection and directed credit (Lall 2004; Wade 2000);
- Selectively welcomed FDI into activities in which domestic industry was weak and lacked world-class capabilities;



- Supported indigenous skill development;
- Developed technology and strongly promoted exports;
- Supported industry with a variety of R&D collaboration, innovation inducements, and extension assistance;
- Actively supported SMEs, by helping them to locate, purchase, diffuse, and adapt new foreign technologies;
- Built a large public sector in manufacturing;
- Set up facilities where private firms were unwilling or unable to do so; and
- Invested in joint ventures in technologically difficult areas, such as semiconductors and aerospace.

The following messages can be drawn from East Asian industrial development policies and strategies:

- Selective rather than open-ended, indiscriminate promotion of all industrial activities;
- Picking activities and functions that offer significant

technological benefits and linkages;

- Investing massively in skill creation, infrastructure, and support institutions, all carefully coordinated with interventions in product markets;
- Giving the lead role in productive activity to private enterprises, but using public enterprises to fill gaps and enter exceptionally risky areas. Experiences of countries indicate that developmental state does not exclude the private sector, instead they work together to achieve a shared vision;
- Using FDI selectively to build local capabilities (by restricting FDI or imposing conditions on it) or to tap into dynamic, high technology value chains;
- Improving the quality of bureaucracy and governance, collecting relevant information, and learning lessons from technological leaders;
- Ensuring policy flexibility and learning; and
- Involving the private sector in strategy formulation and implementation.









## 4. CONCLUSIONS, RECOMMENDATIONS, AND ACTION PLAN

### 4.1 Conclusions

Ethiopia has registered solid economic growth since 2003/04, but growth slowed down in 2011/12 due to weak performance of the agriculture and industrial sectors. This growth has led to a reduction in income poverty and improvements in other social indicators. However, the country's growth acceleration in recent years has not been associated with diversification and structural change. In particular, the performance of the manufacturing sector has not been satisfactory.

The following factors have been identified in Ethiopia's manufacturing industry based on analytical and situational assessments, stakeholder consultations and previous studies (ASTU, 2013):

- (a) Unfavourable business environment;
- (b) Inadequate macroeconomic management;
- (c) Inadequate physical infrastructure;
- (d) A poor manufacturing technology development system;
- (e) A lack of critical mass of sufficiently skilled workers;
- (f) Inadequate availability and underdeveloped industrial inputs; and
- (g) Weak market diversification and development.

Given the importance of the manufacturing sector for sustaining growth and generating employment, it is imperative to have a forward-looking strategy to promote structural change. This study suggests strategies through which industrial transformation consistent with the country's economic vision can be realized. The development of an industrial base involves a major transformation of the economy, including internal migration through urbanization, a change in the job descriptions of a significant portion of the working population with associated changes in skills requirements, new infrastructure demands, and the emergence of new sets of firms that (a) constitute the new industrial sector, (b) serve as suppliers of industrial inputs (including services inputs); and (c) provide demand for its products.

### 4.2 Broad Implementation Strategies for Stimulating Manufacturing Transformation

A new manufacturing strategy is needed to face four emerging challenges, which have emerged from the gradual erosion of Ethiopia's manufacturing competitiveness. First, the manufacturing sector's growth rate has been uneven and, moreover, has slowed down in 2011/12. Second, with rapid globalization and trade liberalization, the manufacturing sector is facing increasingly stiff competition in its traditional export markets and with its traditional export products. Additionally, domestic firms are competing against increasing inflows of imported

manufactured goods. Third, Ethiopia's traditional exports are losing market shares internationally, as world demand for its exports stagnates or declines. Finally, the manufacturing structure, already at odds with Ethiopia's structure of comparative advantage, is facing renewed pressure from the impact of trade liberalization on its ailing industries. In addition, the manufacturing sector suffers from a host of long-standing weaknesses, including a poor investment climate and business environment, inadequate physical infrastructure, underdeveloped industrial technology development system, and low skills and education levels. These weaknesses continue to constrain manufacturing investment and have yet to be adequately addressed.

#### 4.2.1 Creating a Conducive Business Environment for Manufacturings Development

Manufacturing development and transformation requires an enabling business environment for both local and foreign direct investment. It is crucial to rectify barriers to businesses by setting and properly enforcing legal frameworks, removing bureaucratic constraints, ensuring good governance, and providing efficient service. Streamlining regulatory frameworks (e.g., customs and licensing) and redressing coordination failures are crucial to energize manufacturing development.

#### 4.2.2 Stable and Predictable Macroeconomic Management

Sound macroeconomic management that ensures stable inflation, a competitive exchange rate, consistency, predictability, and clarity of policies, laws, and regulations, and flexibility in macroeconomic management are key for encouraging long-term investment in the manufacturing sector. Given the centrality of the private sector for long-term economic development, policies and strategies need to be designed with broader participation and consultation of stakeholders. In addition, medium-and long term policies and strategies should be based on a thorough understanding of the national, regional and global economic perspectives.

#### 4.2.3 Inadequate Physical Infrastructure

Infrastructure development has a profound impact on stimulating manufacturing development. Given Ethiopia's existing infrastructural deficit, improvements and investments in physical infrastructure are crucial for enhancing the competitiveness of the manufacturing sector. Changes in the management of the utility sector are also needed in order to address the manufacturing sector's and the public's growing dissatisfaction with service delivery. A well-developed network of transport, port, and administrative infrastructure must also be established. Infrastructure planning at all levels should be integrated with urban or rural planning to facilitate and support the manufacturing sector in order to ensure that essential infrastructure requirements are met. In doing so, inter-sectoral collaboration, as well as co-ordination with line agencies, stakeholders, and infrastructure facility providers, are essential from the beginning of planning.

## 4.2.4 Raising Education Quality and Improving Skills

The manufacturing sector suffers from a lack of quality human resources; to redress this situation a significant improvement in the quality of education delivery is required. The manufacturing industry and private businesses, as beneficiaries of the human capital generated by the education and training system, need to support the allocation of additional resources to this system. In particular, the tertiary education system needs to emphasize quality of education and professional training. It should also strive to impart general, transferable skills, including problem solving skills.

## 4.2.5 Developing Technological Development and Capabilities

The manufacturing sector's transformation and competitiveness depend increasingly on technology development and its underlying knowledge, skills, and organizational capability. Because of limited technology deepening, the manufacturing industry runs the risk of further competitive weaknesses as globalization and liberalization proceed. Specific interventions are required to stimulate both the supply of and demand for technology development on the part of manufacturing industries. A training support system that helps build technology using and assimilating skills to underpin the deepening of technology development capabilities must be established. For example, a flexible grant-based subsidy scheme can be designed and implemented to assist firms in investing in training concerned with design, engineering, and R&D.

Accordingly, technology transfer and development through technology adoption and adaptation must be encouraged, technology parks must be established, reverse engineering must be promoted, and innovation and intellectual property rights must be set up.

There are a number of public science and technology universities and institutes in Ethiopia. A comprehensive evaluation of these facilities with a focus on industrial development should be undertaken, together with recommended actions for efficient and relevant manufacturing services.

## 4.2.6 Improving the Supply and Quality of Industrial Inputs

A competitive manufacturing sector depends on the availability and quality of local inputs including raw materials. In particular, the development of the agricultural sector is crucial for supplying inputs for the agro-processing manufacturing industries. The government must thus attract and encourage investments in commercial agriculture to improve the supply of agricultural raw materials. The development of the agricultural sector in turn depends on improved agronomy, input supply, and infrastructure (e.g., roads, energy, irrigation facilities, etc.). Efforts are also needed to improve the availability of other industrial inputs (e.g., iron ore, etc.). Therefore,

the transformation of the manufacturing sector requires the development of other sectors as well. Furthermore, formation of industrial zones would also help to improve the supply of industrial inputs by linking industries that need inputs with those that supply them.

## 4.3 Horizontal Policy Recommendations

### 4.3.1 Incentives for the Manufacturing Sector

Functional incentives are more appropriate than sub-sector or product-specific incentives. Functional incentives linked to, for instance, skills upgrading, technological upgrading, and export performance are more efficient than general tax incentives for the production of specific goods. Manufacturing industries that participate in a promoted or priority activity or produce a promoted product can benefit from the following:

- Loans at reduced interest rates,
- Preferential access to foreign exchange, and
- Dedicated utility supply lines and reduced utility rates (e.g., power)<sup>14</sup>

The aim of these incentives is to encourage investment in specific activities and specific areas.

**The Industrial Investment Allowance:** to encourage large-scale investment by both domestic and foreign investors in specific industry sectors that manufacturing of certain products and goods by providing tax relief, in the form of industrial investment allowances, to strategic manufacturing projects.

**Industrial development zones:** This incentive is designed to promote international competitiveness and to attract sustainable foreign direct investment and develop links between domestic and zone-based industries for the optimal use of existing infrastructure, the creation of employment and technology transfers.

**Research and development incentive:** Given the high costs involved in research and development (R&D), a tax incentive can be used as a way of indirectly subsidising research and development costs. Manufacturing industries that wish to improve their productivity through invention of new product lines or enhance their current product quality would be encouraged to benefit from this incentive.

**Reinvestment allowance or expansion incentive:** A reinvestment allowance can also be used to promote manufacturing industries that incur capital expenditure to expand, automate, modernise or diversify its existing manufacturing business within the same industry. The aim of this incentive is to promote automation processes in the manufacturing sector in an effort to increase productivity.

<sup>14</sup>Discussions with stakeholders indicate that utility costs are not a problem for the manufacturing sector; rather access to and unreliable utilities such as power supply.

Increased exports of locally manufactured products: to promote the export of higher value-added goods, manufacturing companies could be granted a tax exemption based on the extent of value addition.

**Industrial linkage programme:** focused on vendors that manufacture inputs to promoted products. It aims at developing small and medium-sized businesses to be competitive and capable suppliers of parts and components to multinational companies.

**Industrial Innovation support programme:** This incentive serves to promote technological development through the provision of financial assistance to registered enterprises in manufacturing or software development that engage in the development of innovative, competitive products and/or processes which should contribute to improving technology.

**Training expenses deduction:** Manufacturing industries incur training expenditure before the commencement of business could be entitled to benefit from this incentive based on certain condition such as the trainees are employed by the company when operation commences.

#### Support institutions

- Special window services to manufacturing firms;
- Streamline and network support institutions;
- Develop research and development support institutions focusing on adaptation and diffusion of existing technologies;
- Establish and support establishment of laboratory inspection and standardization, and enhance the capacity of Ethiopian Quality Standards Agency; introduce quality standards award schemes for those manufacturing firms that make use of quality and standards;
- Establish and strengthen specialized training centers;
- Nurture industrial districts through cluster policies, and
- Use government procurement to promote development of local and regional manufacturing industries.

These various incentive schemes need to be based on certain conditions and be time bounded. Appropriate indicators should be developed to monitor and evaluate the effectiveness of the various incentives. Although there are some incentives already in place in Ethiopia (e.g., tax holidays, customs duty exemptions, etc.), their impacts have not been assessed and evaluated.

#### 4.3.2 Infrastructure: Energy, Transport, and Communication

Provision of public economic infrastructure to reduce logistical and other operating costs for firms requires investment in hard infrastructure (such as roads and railways), improvements in the coverage and quality of communications (such as mobile phones

and internet), and improvements in the supply and quality of energy to the manufacturing sector through dedicated windows.

#### 4.3.3 Trade Logistics

Priority actions in this area to improve quality of service, and lower costs include developing and implementing a coherent national transport strategy, integrating institutions to handle trade and transport issues, and modernising trucking regulation.

- Improve coordination among the different service providers through investment in networking. For example, establishing a Trade Net (e.g., like Singapore's) could help to enhance business to business (B2B) and business to government (B2G) electronic communication;
- Enhance national standards on product quality, packaging, storage, and transport conditions;
- Improve container tracking capability through IT-supported trade facilitation;
- Improve customs procedures through streamlining and coordination of border clearance processes and establishing a dedicated window for manufacturing; and
- Ensure adequate product quality testing and certification methods.

#### 4.3.4 Access to Finance

- Modernize the banking system to allow banks to make loans to prioritized sectors with minimum collateral requirements;
- Foster the development of non-banking financial institutions (NBFIs);
- Promote capital finance development, including by reforming banking laws regarding collateral and security, etc.; and
- Provide preferential financing by encouraging public and private banks to direct credit to specific sectors and firms.

#### 4.3.5 Education, Training, and Skills Level

- Increase the efficiency of TVET centers to increase the availability of skilled and semi-skilled labour; Invest in education and training to ensure a supply of skilled workers, including workers with tertiary education and technical industrial skills, and managers with the necessary skills to grow companies and move them up the technological ladder; and
- Develop artisan skills and high technical skills to promote the growth of the industry.

#### 4.4 Sectoral Policy Recommendations

Given that manufacturing sectors are highly heterogeneous, sector-specific strategies and interventions are required to ensure policy alleviates binding constraints and leverages industrialization. Table 4.1 provides some sectoral policy interventions.

**Table 4.1: Sectoral policy recommendations**

Sector	Recommendations
<b>Textile and Garments</b>	<ul style="list-style-type: none"> <li>◦ Improve cotton supply chain.</li> <li>◦ Expand and upgrade existing textile and garment factories.</li> <li>◦ Encourage cotton plantation and productivity.</li> <li>◦ Strategically invest to attract entrepreneurial skill and promote technology transfer</li> <li>◦ Encourage and build strong domestic capabilities in textile and garment production.</li> <li>◦ Develop design and branding capabilities in garment production.</li> </ul>
<b>Leather and Footwear</b>	<ul style="list-style-type: none"> <li>◦ Encourage leather production to meet global standards.</li> <li>◦ Improve supply chain management.</li> <li>◦ Upgrade and expand existing leather and tanneries industries.</li> <li>◦ Invest in entrepreneurial skill formation and technology transfer.</li> <li>◦ Build strong domestic capabilities in leather and garment production.</li> <li>◦ Improve the supply of local hides and skin through integrated livestock development.</li> <li>◦ Encourage investment in product diversification and quality.</li> <li>◦ Develop domestic design capacity.</li> </ul>
<b>Agro-processing</b>	<ul style="list-style-type: none"> <li>◦ Improve domestic input supply and quality by developing commercial agriculture.</li> <li>◦ Improve yields and productivity of agriculture.</li> <li>◦ Improve supply chain management and marketing.</li> <li>◦ Encourage an increase in product variety and quality through R&amp;D.</li> <li>◦ Develop domestic capability in food technology research.</li> <li>◦ Develop and strengthen food safety testing and certification facilities.</li> <li>◦ Promote knowledge- and capital-intensive agro-processing industries.</li> </ul>
<b>Sugar</b>	<ul style="list-style-type: none"> <li>◦ Develop and expand sugarcane plantation.</li> <li>◦ Upgrade and expand sugar factories to meet global standards.</li> <li>◦ Develop a domestic capability in sugar industry.</li> <li>◦ Encourage investment in product diversification and quality.</li> <li>◦ Establish domestic R&amp;D capability.</li> </ul>
<b>Pharmaceutical</b>	<ul style="list-style-type: none"> <li>◦ Upgrade and expand scale of the industry.</li> <li>◦ Attract experienced and innovation- based capital-intensive investment.</li> <li>◦ Establish and encourage investment in R&amp;D.</li> <li>◦ Strengthen and develop supply and quality of inputs.</li> <li>◦ Develop domestic human capital in the industry.</li> <li>◦ Develop and establish quality control and testing facilities.</li> </ul>
<b>Cement</b>	<ul style="list-style-type: none"> <li>◦ Upgrade and promote existing cement industries.</li> <li>◦ Improve the quality and quantity of local inputs.</li> <li>◦ Establish local capacity in R&amp;D.</li> <li>◦ Improve product quality and standards.</li> </ul>
<b>Chemical</b>	<ul style="list-style-type: none"> <li>◦ Improve the supply and quality of inputs.</li> <li>◦ Develop domestic capability in R&amp;D.</li> <li>◦ Develop and establish chemical safety, handling, and testing facilities.</li> <li>◦ Encourage light and agro-chemical factories (e.g., plastics, soap and detergent, etc) and bio-based chemicals.</li> <li>◦ Develop domestic human capital in the industry.</li> </ul>
<b>Metals and Engineering</b>	<ul style="list-style-type: none"> <li>◦ Improve domestic input supply.</li> <li>◦ Encourage domestic mining and processing of iron ore.</li> <li>◦ Strengthen and develop domestic human capital.</li> <li>◦ Upgrade and expand metal and engineering industries.</li> <li>◦ Encourage and promote knowledge, skill, and technology transfer.</li> <li>◦ Develop or adopt national standards for common construction structures, machinery and equipment, parts, etc. to foster the development of the industry</li> <li>◦ Develop domestic capability in R&amp;D.</li> <li>◦ Establish business support arm at the engineering training institutes.</li> </ul>





## 4.5 Action Plan

### 4.5.1 Manufacturing Development Phases

The manufacturing development and transformation strategies will be implemented through the industrial developmental phases to achieve the long-term vision (Table 4.2). While the first phase of industrialization focuses on resource-based and low technology manufacturing, the second phase involves medium technology manufacturing, which results from learning experiences and capabilities (e.g., skilled labour) accumulated from the initial phase of development. The third phase typical involves a higher stage of manufacturing, which is skill- and knowledge-intensive. In this phase, the country strives for high-end manufacturing, such as

shifting from “made in Ethiopia” to “created by Ethiopia”. Innovation and upgrading will be the driving forces for the manufacturing sector in this phase. The successful completion of this phase crucially depends on domestic absorptive capabilities in terms of the capacity to acquire, use, and adapt foreign technologies. This, in turn, requires expanded human capital skills in areas such as engineering, as well as substantially increased technological capabilities of domestic firms.

The implementation of these phases is expected to bring about the manufacturing sector’s transformation, as well as economic structural change, through accumulated domestic capability and learning-by-doing.

**Table 4.2: Manufacturing transformation phases**

Phase	Policy challenges to be addressed
<b>Phase 1: Short-term (low technology manufacturing)</b>	
<b>Agriculture- and resource-driven</b> (e.g., food, beverages, textiles, and leather)	
<ul style="list-style-type: none"> <li>Driven by nature of agricultural products and land/input assets.</li> <li>Driven by nature and location of inputs.</li> <li>Sensitive to commodity price changes.</li> <li>Transportation/logistics costs.</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring global market access, addressing domestic standards and foreign non-tariff barriers.</li> <li>Capturing value added by processing.</li> <li>Capturing rents.</li> <li>Specific infrastructure provisions.</li> </ul>
<b>Phase 2: Medium term (medium technology manufacturing)</b>	
<b>Fabrication/processing</b> (e.g., paper and paper products, chemicals, rubber, plastics, metals, and engineering)	
<ul style="list-style-type: none"> <li>Sensitive to currency fluctuations.</li> <li>Can be labour- or capital-intensive.</li> <li>High barriers to entry.</li> </ul>	<ul style="list-style-type: none"> <li>International competition to attract FDI/claim a share of global value chains.</li> <li>SEZs to address complexities of domestic regulatory frameworks without need for difficult reforms.</li> <li>Logistics and border facilitation to minimize trade frictions.</li> </ul>
<b>Phase 3: Long-term (transition to high manufacturing)</b>	
<b>Knowledge-intensive/sunrise industries</b>	
<b>Chemicals (e.g. pharmaceuticals, medicinal chemicals, biotechnology, etc.)</b>	
<ul style="list-style-type: none"> <li>Heavy competition from global players.</li> <li>Intensive use of highly-skilled labour.</li> </ul>	<ul style="list-style-type: none"> <li>Attract FDI.</li> <li>Facilitate technology transfer</li> <li>Factor-input policies (apprenticeship/venture capital/university-based research support).</li> <li>Strategic use of government procurement.</li> </ul>
<b>Service provision to business processes</b> (engineering, design, logistics, finance)	
<ul style="list-style-type: none"> <li>Critical to business competitiveness.</li> </ul>	<ul style="list-style-type: none"> <li>Gap filling to address potential coordination type of market failures</li> </ul>

### 4.5.2 Manufacturing Sector Development Implementation Plan<sup>15</sup>

Industrial transformation involves the implementation of strategies in different phases, which requires a specific implementation plan.

Ethiopia’s envisaged implementation plan focuses on both horizontal and vertical policy recommendations through different phases of industrialization process.

<sup>15</sup>Some of the recommendations are based on the draft industrial development roadmap developed by ASTU (2013).



## 4.5.2.1 Horizontal Policy Recommendations Implementation Plan

**Table 4.3: Horizontal policy recommendations implementation plan**

Action	Expected outcome	Responsibility	Phases	Pre-conditions
<b>1. Incentives for the Manufacturing Sector</b>				
1.1. Action 2: Subsidize loans	Low cost of capital and increased investment	BDE, Commercial Banks	I, II	
1.2. Action 2: Provide preferential access to foreign exchange	Foreign exchange constraint relaxed	MoI, NBE, Commercial Banks	I	
1.3. Action 3: Dedicated utility supply lines and reduce utility rates	Dependable utility supply and reduced utility costs	MoI, EEPCo, Water and Sewerage Offices	I, II	
1.4. Action 4: Provide investment allowance	Large-scale investment stimulated	MoI, EIA,	I, II, III	
1.5. Action 5: Build industrial development zones	FDI increased, linkages strengthened, and competitiveness improved	MoI, EIA,	I	
1.6. Action 6: Invest in R&D	Innovation increased and product quality improved	MoI, MoSTI	II, III	
1.7. Action 7: Provide Expansion allowance	Automated, expanded and modernized	MoI, EIA,	I, II, III	
1.8. Action 8: Increase export of locally-manufactured products	Locally-manufactured goods export increased	MoI, ERCA,	I, II	Based on the extent of value addition
1.9. Action 9: Develop Industrial linkage Programme	SMEs' competitiveness enhanced; linkages improved	MoI, SMEA	I, II, III	
1.10. Action 10: Provide industrial innovation support	New products and methods introduced	MoI, MoSTI	II, III	
1.11. Action 11: Support training expenses	Firms engaged training their workers	MoI, MoE, Approved training institutions	I, II, III	Trainees employed by the company when operation commences
<b>2. Support Institutions</b>				
2.1. Action 12: Provide one-window services	One-window service established	MoI, ERCA, EIA, MoT	I	
2.2. Action 13: Support R&D	R&D institution established	MoI, MoSTI	I, II	
2.3. Action 14: Support standards and quality control	Improved standards and quality of manufactured products	MoI, ESQA	I, II	
2.4. Action 15: Introduce quality and standards award schemes	Use of quality and standards enhanced	MoI, ESQA, Chamber	I, II, III	
2.5. Action 16: Provide specialized training centers	Specialized training centers established or strengthened	MoI, MoE,	II, III	
2.6. Action 17: Streamline and networking support institutions	Institutions networked	MoI, ERCA, EIA, MoT	I, II	
2.7. Action 18: Procure locally produced goods	Guidelines for local purchase of manufactured goods established and effected	MoI, MoFED	I	
2.8. Action 19: Ensure policy flexibility and learning	Policy instruments adjusted	MoI, NBE, MoFED, MoT, ERCA, EIA	I, II, III	



Action	Expected outcome	Responsibility	Phases	Pre-conditions
<b>3. Infrastructure: Energy, Transportation, and Communication</b>				
3.1. Action 20: Establish a well-developed network of transport, port, and administrative infrastructure	Improved transport and port services	MoTC,	I, II	
3.2. Action 21: Introduce reforms in the utility sector	Reliable and improved utility services	EEPCo, MoEW	I	
3.3. Action 22: Integrate infrastructural planning with urban and rural planning	Joint and coordinated planning enhanced		II	
3.4. Action 23: Expand and establish industrial zones in major cities and towns	Industrial zones established	MoI	I, II	
3.5. Action 24: Improve the quality and coverage of communication (including internet)	Increased coverage and quality of communication	MoTC, MoSTI	I	
3.6. Action 25: Improve the capacity of the transport sector through linkages with universities and research institutes	Improved capacity of the transport sector; linkages enhanced	MoTC, Universities	II, III	
<b>4. Trade Logistics</b>				
4.1. Action 26: Improve and streamline customs procedures	Custom procedures streamlined	ERCA	I	
4.2. Action 27: Improve tracking and tracing	Tracking and tracing improved	ERCA, ESL	I, II	
4.3. Action 28: Improve international shipping	Improved international shipping	ESL, ERCA	I, II	
<b>5. Access to Finance</b>				
5.1. Action 29: Provide special incentives to banks	Improved access to loans	NBE, Commercial Banks	I	
5.2. Action 30: Design alternative saving opportunities	Increased domestic savings rate	NBE, Commercial Banks, MoFED	I, II	
5.3. Action 31: Selectively attract foreign capital	Foreign capital inflow increased	EIA, MoI, MoFA	II, III	
5.4. Action 32: Foster development of NBFIs	NBFIs increased; increased credit supply	NBE	I, II	
<b>6. Education, Training, and Skills Level</b>				
6.1. Action 33: Conduct regular skills audits, particularly in TVETs	TVET curriculum reviewed	MoE	I, II, III	
6.2. Action 34: Encourage enterprise training through subsidized training expenditures	Increased number of firms giving training	MoI, MoE	II, III	
6.3. Action 35: Set up training centers in industrial parks, high-tech parks, and export processing zones	Training Centers established	MoI, MoE	II	
6.4. Action 36: Benchmark Ethiopia's education and training system against major competitors	Curriculum reviewed and education system upgraded	MoE, Universities	II, III	
Note: I, II, and III refer to the phase in which activities need to be implemented.				

## 4.5.2.2 Vertical Recommendations Implementation Plan

**Table 4.4: Implementation plan in the short-term**

Action	Expected outcome	Responsibility	Pre-conditions
<b>1. Textile and Garment</b>			
1.1. Action 1: Expand and upgrade the existing Cut, Make and Trim (CMT) factories	Existing factories expanded and upgraded	Mol, MoSTI	
1.2. Action 2: Develop a special incentive schemes towards local raw material and input production	Incentives identified and introduced	Mol, MoA	
1.3. Action 3: Enhance technology transfer and productivity by forming partnerships with successful firms in Turkey, India, China, and Korea	Technology transfer enhanced	Molm, MoSTI	
1.4. Action 4: Attract foreign investors with experience in cotton yarn production, particularly from Turkey, India, and China, and enter into transfer agreements	FDI in cotton yarn production increased	Mol, MoT	
1.5. Action 5: Attract foreign investors with experience in cotton yarn production, particularly from Turkey, India, and China	Increased FDI in cotton production	EIA, Mol	
1.6. Action 6: Encourage joint ventures under technology transfer agreements	Increased number of ventures	Mol, MoSTI	
<b>2. Leather and Footwear</b>			
2.1. Action 7: Build footwear, leather goods, and articles cluster shades	Increased number of cluster shades	Mol	
2.2. Action 8: Encourage investment in livestock development	Investment in livestock increased and hides and skin supply increased	MoA, Mol, EIA	
2.3. Action 9: Establish raw hides and skins marketing centers in major regional cities	Marketing centers established	MoA	
2.4. Action 10: Train and increase awareness on raw hand and skin collection and slaughter	Awareness increased regarding raw hand and skin collection and slaughter	MoA	
2.5. Action 11: Establish modern slaughter houses in major towns	Modern slaughter houses established	MoA	
<b>3. Agro-processing</b>			
3.1. Action 12: Attract and encourage large scale investment in commercial agriculture	Investment in large scale commercial agriculture increased	MoA, EIA	
3.2. Action 13: Establish supply linkage program between producers and processing companies by strengthening cooperatives, farmers unions, out growers, and contract farming modalities	Increased linkages between producers and processors	MoA, Cooperative Agencies	
3.3. Action 14: Support and encourage investment in the packaging industry	Investment in the packaging industry increased	Mol, EIA	
3.4. Action 51: Support the production and productivity of smallholder agriculture by improving access to modern inputs	Enhanced production and productivity of smallholder agriculture	MoA, EARI	
3.5. Action 15: Develop a regulatory framework to support contract enforcement and strengthen enforcement capacity between buyers and sellers	Contract enforcement enhanced	MoT	
3.6. Action 16: Attract international fruit and vegetable processors to develop an integrated supply source, as well as to transfer skills and knowledge	Investment in fruit and vegetable processing increased	Mol, MoA, EIA	



Action	Expected outcome	Responsibility	Pre-conditions
3.7. Action 17: Encourage and establish marketing modalities, such as warehouses and cold chain management	Warehouses and cold chain facilities established	MoA, ECX	
<b>4. Sugar</b>			
4.1. Action 18: Attract large scale investment for development for sugar cane production	Increased investment in sugarcane production	MoA, EIA	
4.2. Action 19: Attract international sugar producers to develop integrated supply source, as well as skill and technology transfer	Increased investment in sugar processing	Mol, MoA, EIA	
4.3. Action 20: Develop regulatory framework to support contract enforcement	Regulatory framework for contract enforcement developed	MoT	
4.4. Action 21: Encourage sugarcane out growers	Sugarcane out growers increased	MoA	
<b>5. Cement</b>			
5.1. Action 22: Attract and encourage experienced and capital-intensive investors in the cement industry	FDI in cement industry increased	Mol, EIA	
5.2. Action 23: Prepare project profiles for potential investors	Project profiles developed	Mol, MoM	
5.3. Action 24: Develop raw material profile	Raw material profile developed	Mol	
<b>6. Pharmaceutical</b>			
6.1. Action 25: Upgrade existing pharmaceutical factories	Existing pharmaceutical factories expanded and upgraded	Mol, EIA	
6.2. Action 26: Refine and benchmark issues related to intellectual property rights to attract multinational companies	Benchmarking developed	EIPRO	
6.3. Action 27: Prepare project profiles for potential investors	Project profiles developed	Mol	
<b>7. Chemical</b>			
7.1. Action 28: Encourage light and agro-chemical factories (e.g., plastic, soap, and detergent)	Light and agro-chemical industries increased	Mol, EIA	
7.2. Action 29: Upgrade existing chemical industries	Existing chemical factories expanded and upgraded	Mol	
7.3. Action 30: Attract FDI	Increased FDI in chemical industries	Mol, EIA	
7.4. Action 31: Prepare raw materials profile for potential investors	Raw material profile developed	Mol, MoM	
<b>8. Metals and Engineering</b>			
8.1. Action 32: Upgrade existing metal industries	Existing metal and engineering factories expanded and upgraded	Mol	
8.2. Action 33: Attract FDI	Increased FDI in metals and engineering industries	Mol, EIA	
8.3. Action 34: Encourage joint ventures	Increased investment in joint venture	Mol, EIA	
8.4. Action 35: Encourage exploration of iron ore and local processing	Iron and local processing profile developed	MoM, Mol	

**Table 4.5: Implementation plan in the medium-term**

Action	Expected outcome	Responsibility	Pre-conditions
<b>1. Textile and Garment</b>			
1.1. Action 1: Shift to higher-value items (e.g., synthetic fiber and man-made fabric & garments, etc)	Product quality enhanced	Mol, ESQA	
1.2. Action 2: Strategically invest and attract entrepreneurial skills	Local skills developed	Mol, EIA	
1.3. Action 3: Encourage and motivate local accessories production	Increased supply of local accessories	Mol, EIA	
1.4. Action 4: Expand production scale to meet largest-scale client orders	Large-scale production and clients increased	Mol, Institutes	
1.5. Action 5: Attract FDI with a track record in the industry	Increased FDI investment in textile and garment	EIA, Mol	
1.6. Action 6: Shorten average lead time by improving transport and logistics systems	Reduced average lead time	Mol, Institutes	
1.7. Action 7: Establish market intelligence information centers	Market intelligence information centers established	Mol, Institutes	
1.8. Action 8: Encourage known international brands to establish joint manufacturing plants with locals	Specialized investment in joint venture increased	Mol, EIA	
1.9. Action 9: Introduce technology and innovation award schemes			
<b>2. Leather and Footwear</b>			
2.1. Action 10: Invest in new capacity, especially in bovine leather	Local capacity increased	Mol	
2.2. Action 11: Encourage business partnerships with local shoe/glove companies and provide on-going support to local skin quality	Improved linkages and quality of skin	MoA, Mol, EIA, Institutes	
2.3. Action 12: Replicate models and transfer knowledge for footwear industry	Improved models of footwear industry replicated and skill transferred	Mol	
2.4. Action 13: Leverage FDI to develop greater production capabilities and diversification	FDI increased and domestic capability enhanced	Mol, EIA	
2.5. Action 14: Expand modern slaughter houses for better quality raw hides and skins	Modern slaughter houses expanded	MoA	
2.6. Action 15: Encourage known international brands to establish joint manufacturing plants with locals	Joint ventures increased	Mol, EIA	
<b>3. Agro-processing</b>			
3.1. Action 16: Support trials and development of product varieties and research to increase shelf life, yield, and quality	Trial centers established and product varieties developed	Mol, Institutes	
3.2. Action 17: Improve yields and productivity by improving access to inputs (including selected seed, insecticide, pesticide and other chemicals)	Increased use of modern inputs and productivity increased	MoA, Institutes	
3.3. Action 18: Encourage processors, especially in fruit and vegetables	Increased number of processors in fruit and vegetables	Mol, EIA	





Action	Expected outcome	Responsibility	Pre-conditions
3.4. Action 19: Expand food safety testing and certification facilities	Food safety testing centers established	MoA, Food and Drug Administration	
<b>4. Sugar</b>			
4.1. Action 20: Expand and upgrade local sugar industries to meet international standards	Sugar factories expanded and quality improved	Mol, Institutes, ESQA	
4.2. Action 21: Establish training and research centers	Training and research centers established	Mol	
4.3. Action 22: Encourage technology transfer through joint venture arrangements	Increased number of joint ventures and local skill and knowledge enhanced	Mol, EIA	
<b>5. Cement</b>			
5.1. Action 23: Attract clean technology production	FDI with clean technology increased	Mol, EIA	
5.2. Action 24: Expand the scale of operation to satisfy international standards	International standards met	Mol, Institutes, ESQA	
5.3. Action 25: Establish training and research centers	Training and research centers established	Mol	
<b>6. Pharmaceutical</b>			
6.1. Action 26: Upgrade existing pharmaceutical factories	Existing pharmaceutical factories expanded and upgraded	Mol, EIA, MoH	
6.2. Action 27: Establish training and research centers	Training and research centers established	Mol	
6.3. Action 28: Encourage investment in laboratory and testing centers	Laboratory and testing centers established	Mol, MoH, EIA	
<b>7. Chemical</b>			
7.1. Action 29: Establish training centers for chemical safety and handling	Training and research centers established	Mol	
7.2. Action 30: Encourage investment in medium technology chemical industries (e.g., bio-based chemicals and rubber and plastic products)	Investment in medium technology increased	Mol, EIA	
7.3. Action 31: Enhance technology transfer through joint venture	Increased number of joint ventures and local skills and knowledge enhanced	Mol, EIA	
<b>8. Metals and Engineering</b>			
8.1. Action 32: Upgrade and expand existing metal industries towards iron making, steel making, rolling mills, etc.	Existing metal and engineering factories expanded and upgraded	Mol, EIA	
8.2. Action 33: Encourage technology transfer through joint venture	Increased number of joint ventures and local skills and knowledge enhanced	Mol, EIA	
8.3. Action 34: Establish iron ore extraction and related industries	Iron ore extraction industries established	Mol, EIA	
8.4. Action 35: Establish training and research centers	Training and research centers established	Mol	

Note: Institutes refer to training and research institutes.

**Table 4.6: Implementation plan in the long-term**

Action	Expected outcome	Responsibility	Pre-conditions
<b>1. Textile and Garment</b>			
1.1. Action 1: Encourage investment in manufacturing of high value fabrics such as technical fabrics, expand the variety of man-made fibres, etc.	Product quality enhanced	Mol, ESQA	
1.2. Action 2: Increase global linkages by developing new relationships with international garment suppliers and buyers	Linkages strengthened	Mol, EIA	
1.3. Action 3: Develop design and branding capabilities in garment production	Domestic design capacity improved	Mol, Institutes	
1.4. Action 4: Support existing textile factories in moving upstream and producing higher-value vertically-integrated finished garments	Linkages strengthened	Mol, Institutes	
<b>2. Leather and Footwear</b>			
2.1. Action 5: Upgrade and expand special design studios and product development centres	Design and product development studios developed	Mol, Institutes	
2.2. Action 6: Supply a thriving shoe and gloves industry in the global market	Quality of shoes increased	MoT, Mol, Institutes	
2.3. Action 7: Diversification of products alongside capturing key product niches (e.g., golf gloves)	Improved diversification	Mol, Institutes	
2.4. Action 8: Encourage pioneering own-design models in the shoe and other leather products sectors	Design patents increased	Mol, Institutes	
<b>3. Agro-processing</b>			
3.1. Action 9: Establish knowledge and capital-intensive agro-processing industries	Innovation increased	Mol, Institutes, EIA	
3.2. Action 10: Upgrade and expand light food processing industries	Light industries upgraded	Mol, Institutes	
3.3. Action 11: Develop a recognized brand for specific processed food products from Ethiopia	Specific brands introduced	Mol, MoT	
3.4. Action 12: Develop and strengthen food laboratory and food safety testing and certification facilities	Food safety testing centers upgraded	MoH, Food and Drug Administration	
<b>4. Sugar</b>			
4.1. Action 13: Upgrade local sugar industries to meet international standards	Sugar factories expanded and quality improved	Mol, Institutes, ESQA	
4.2. Action 14: Develop a recognized brand for processed products from Ethiopia through R&D	Specific sugar product brands introduced	Mol, MoT	
4.3. Action 15: Upgrade R&D capabilities	R&D capabilities increased		
4.4. Action 16: Enlarge market destinations via an established market information system	Market diversification ensured	Mol, MoT	
<b>5. Cement</b>			
5.1. Action 17: Upgrade clean technology in cement industry	Clean technology introduced	Mol, EIA	
5.2. Action 18: Upgrade R&D capabilities	R&D capabilities increased	Mol, Institutes, ESQA	
<b>6. Pharmaceutical</b>			
6.1. Action 19: Upgrade pharmaceutical factories	Existing pharmaceutical factories upgraded	Mol, EIA, MoH	



Action	Expected outcome	Responsibility	Pre-conditions
6.2. Action 20: Encourage manufacturing of high technology pharmaceuticals (e.g., bio-based pharmaceuticals)	Manufacture of high technology pharmaceuticals established	Mol, MoH	
6.3. Action 21: Upgrade laboratory and testing centers	Laboratory and testing centers upgraded	Mol, MoH, EIA	
6.4. Action 22: Upgrade R&D capabilities	R&D capabilities increased		
<b>7. Chemical</b>			
7.1. Action 23: Establish bio-based chemical industries	Bio-based chemical industries established	Mol, EIA	
7.2. Action 24: Encourage investment in specialty chemicals	Investment in specialty chemicals increased	Mol, EIA	
7.3. Action 25: Upgrade R&D capabilities	R&D capabilities increased		
<b>8. Metals and Engineering</b>			
8.1. Action 26: Upgrade metal industries towards coal-based iron industry, iron making industry, finished steel making industry, etc.	Existing metal and engineering factories upgraded	Mol, EIA	
8.2. Action 27: Upgrade R&D capabilities	R&D capabilities increased	Mol	

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