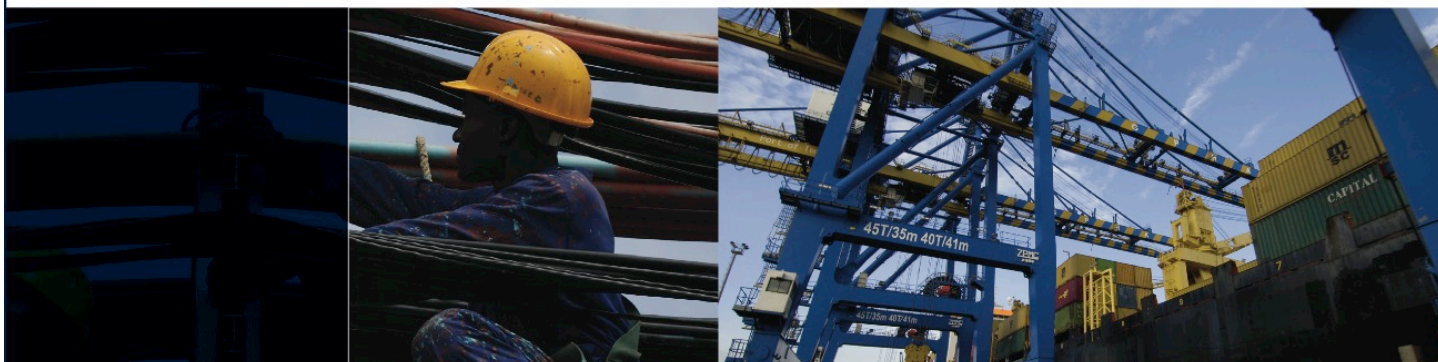


LEARNING TO COMPETE

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Industrial policy and development in Ethiopia: Evolution and present experimentation

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Abstract

There has recently been a resurgence of interest in industrial policy. This paper examines the choices, implementation processes, and outcomes of the Ethiopian present industrial policy. The country represents an excellent case study of recent industrial policy experimentation in Africa as it is one of the few countries that has formulated and implemented a comprehensive industrial policy early on when the term industrial policy had been a taboo in the international policy forums. By providing detailed assessment of the policy practice this paper seeks to inform the ongoing industrial policy debate.

Keywords: industrial policy, manufacturing, Ethiopia, Africa
JEL classification: L6, L52

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1 Introduction

The manufacturing sector has long been considered the main engine of economic growth and structural transformation (Prebisch 1950; Singer 1950). There are numerous arguments supporting this view.¹ The road towards industrialization, however, has never been even. Several countries in Asia have successfully industrialized in the last few decades, while Africa faced de-industrialization (Page 2009). Rodrik (2004) argues that the success in East and South Asian countries was not the result of conventional recommendations of liberal markets and the restricted role of the government but a mix of standard and non-standard policies. The lack of progress in Africa, on the other hand, casts doubt on the structural adjustment programmes (SAPs) that took place in the 1980s and 1990s with a main focus on liberalization and improvement of investment climate.

Industrial policy is back on the development agenda. A number of countries in the developing world and particularly Africa have shown a renewed interest and started to reintroduce industrial policy.² Governments from several rich countries have also advocated for state intervention in industry following the 2008 financial crisis (*The Economist* 2010). Yet controversies remain; for example whether governments should favour specific sectors over others ('functional' versus 'selective' industrial policy), whether industrial strategies should follow or defy comparative advantage (Lin and Chang 2009), and on the nature of state-business relationship (e.g. Hausmann and Rodrik 2006).

One of the longstanding critics against industrial policy points at the inability of the state bureaucrats to pick winners and the high probability that they promote rent seekers instead (Pack and Saggi 2006). The recent advocates of industrial policy (e.g. Rodrik 2004; Hausmann and Rodrik 2003) have emphasized the need for strategic collaboration between the private sector and the state with the aim of uncovering where the most significant obstacles to restructuring lie and what type of interventions are more likely to remove them. Yet, little systematic evidence exists on the institutional characteristics of public-private co-ordination outside of the well-known cases of East Asia (Page 2010).³ Thus, we know little about the quality and impact of particularly recent attempts to reintroduce industrial policy in Africa.

The aim of this study is to address the gap in this literature by analyzing the choices, implementation processes and outcomes of the Ethiopian present industrial policy. Ethiopia represents an excellent case study of the recent industrial policy experimentation in Africa. First, it is one of the few African countries that have formulated and implemented a full-fledged Industrial Development Strategy (IDS) since the early 2000s when industrial policy had been a taboo in the international policy forums. Unlike to many other reform policies that had to be agreed on with the international financial institutions, the IDS was designed by the Ethiopian government and based on its broad development vision, known as Agricultural Development Led Industrialization (ADLI). In defiance to the neo-liberal advice the strategy advocates for a strong state role to guide the private sector in the development process, which GRIPS (2010) termed it as pro-active industrial policy.

¹ Szirmai (2009) has an excellent review of the theoretical arguments and empirical observations on this.

² In fact, African governments have also collectively taken initiatives to promote industrialization in Africa under the theme 'industrialization of Africa' at their January 2008 summit.

³ Altenburg (2011) examines the industrial policy practice in low-middle-income countries covering seven African and Asian countries including Egypt, Ethiopia, Mozambique, Namibia, Syria, Tunisia, and Vietnam.

Second, the industrial policy-making process has been characterized by more flexibility and scope for policy learning. This has been reflected in a continuous updating of the priority sectors and policy instruments introduced to promote the selected sectors. Third, the government has shown extraordinary commitment and ownership. It exerted maximum efforts implementing the IDS through subsequent development plans and various sub-sector strategies. By providing a detailed assessment of the Ethiopian present industrial policy this study seeks to inform the ongoing industrial policy debate.

The remaining part is organized as follows. The next section gives some background on the evolution of industry and industrial policy in Ethiopia. Section 3 describes the structure of the Ethiopian manufacturing sectors. Section 4 examines in detail the present industrial policy framework and practice. It also provides case studies of three industries on the implementation of the direct support for selected sectors. The last section concludes with a discussion of some major remaining and emerging challenges in realizing Ethiopia's industrialization vision.

2 Some background: the evolution of industry and industrial policy in Ethiopia

In Ethiopia, industry in the modern sense of the term emerged as an economic entity only at the turn of the 20th century. The establishment of a strong central government, expansion of cities associated with the installation of railways and the strengthening of foreign relations increased the demand for imported manufacturing commodities. This, in turn, encouraged the establishment of import-substituting factories domestically and as a result modern manufacturing enterprises began to emerge in the 1920s.⁴ After a brief disruption in the Second World War period, the manufacturing sector started to get momentum in the 1950s. During this period a number of new industries which significantly contributed to the development of the national economy were established.⁵ The 1950s are also marked by the start of a comprehensive plan to stimulate and guide the country's industrial and economic development in general.

Ethiopia has seen three regimes over the last eight decades. Keeping with the political ideologies governing the economic principles of the time, these successive regimes adopted different policies for the development of industry in the country. The industrial policies have distinctive features when looking at the guiding vision (policy), ownership structure, and market orientation. Broadly, they can be characterized as the import substitution and private sector-led (from early 1950s to 1974, the Imperial regime); the import substitution and state-led (from 1974 to 1991, the Dergue regime), and the export-orientated and private sector-led (since 1991, the Ethiopian People's Revolutionary Democratic Front, (EPRDF)-led government). In what follows, the salient features of the industrial policies of these three periods will briefly be reviewed. Table 1 summarizes these episodes.

⁴ As of 1927, about 25 factories that included wood, clay, tanneries, soap, edible oil, ammunition, brewery, tobacco, cement, and grain milling were set up in few major cities most of which owned by foreigners. From 1928-41, not less than ten new manufacturing plants were established by Armenian and Greek settlers (Afro Consult and Trading Plc 2002).

⁵ For instance, the Wonji Sugar factory – a joint venture agreement between the Ethiopian Government and the Dutch firm N.V. Handelsvereniging (HVA), a new textile factory, two new wood-processing plants and three leather and shoe processing industries were established during the three year period of 1952-54 (Shiferaw 1995).

2.1 The Imperial regime (pre-1974)

A conscious move to stimulate industrial growth began in the mid-1950s with the formulation of the First Five-Year Plan (FFYP) that covered the period 1958-62.⁶ The plan envisaged to achieve industrial development through the development of import-substituting light industries which produced consumer goods for the domestic market. In the plan it was anticipated that foreign direct private investment would play the leading role in financing the investment capital required for the sector. Various policy measures were introduced to encourage investment in manufacturing including protection of the domestic industry through high tariff and banning of certain imports, fiscal incentives, and provision of credit. The plan also foresaw other roles for the government in boosting the industrial development including infrastructure and human resource development and direct investment in selected sectors mainly those require high capital such as oil refinery, cement, sugar, and textile.

Two more five-year plans, the Second Five-Year Plan (SFYP) and the Third Five-Year Plan (TFYP), were launched between 1963 and 1973.⁷ During this period the government extended the incentives to attract investors and continued to strengthen its presence in economic activities by making direct investment in manufacturing. The driving philosophy of the industrial policy in the imperial period can be characterized as in favour of market and private sector but sought gaps whereby the government should play a role including direct ownership in selected sectors. In practice, the incentive structure was biased towards import-substituting, larger, capital-intensive, and foreign-dominated industrial activities.

According to a World Bank (1985) report the implementation of these initiatives attracted foreign investors and gave boost to the manufacturing sector in Ethiopia. However by the end of the plan period, the overall industrial base of the country remained weak and was characterized by a dual structure – a rudimentary small-scale and handicraft sub-sector and a modern medium-large-scale sub-sector, each contributing about half of the manufacturing value added. In this period the modern medium- and large-scale manufacturing sector, which employs ten or more people and use power-driven machinery (hereafter, MLSM) created no more than 60,000 jobs in total and it was predominantly foreign owned.⁸

⁶ The policy document is: Ethiopian Government, IEG (1957) First Five-year Development Plan 1958-62.

⁷ The two policy documents are: Imperial Ethiopian Government, IEG (1962) Second Five-Year Development Plan (1963-67) and Imperial Ethiopian Government, IEG (1968) Third Five-Year Development Plan (1969-73).

⁸ Foreign ownership accounted more than 65 per cent of the total number of medium- and large-scale manufacturing establishments in Ethiopia (Eshetu 1995).

Table 1: The Ethiopian industrial policy and development phases

	Imperial period (pre-1974)	The Dergue regime (1975-91)	The EPRDF regime (post-1992)
Guiding policy/vision	Market-oriented	Command economy	Market-oriented
Public/private role	Private-led	State-led	Private-led but also strong state role
Ownership structure	Dominance of foreign-owned enterprises	Dominance of public-owned enterprise	Dominance of domestic private-owned enterprises
Target industries	Import-substituting and labour-intensive industries (e.g. textile, food, cement)	Import-substituting and labour-intensive industries but also basic industries	Export-oriented & labour-intensive industries (e.g. Textile, leather, agro-processing, cement)
Envisaged key player	Foreign investment	Public sector investment	Domestic private sector
Policy instruments	Protection of domestic market through high tariff and banning of certain imports Provision of economic incentives (tax holidays, remission of indirect tax on capital goods etc.) & preferential credit scheme	Protection of domestic market through high tariff and quantitative restrictions Financing, subsidizing, and ensuring monopoly power for the state-owned enterprises	Direct support for selected export sectors through capacity building and other means Provision of economic incentives (tax holidays, remission of indirect tax on capital goods etc.) & preferential credit scheme
Government role	Infrastructure & human resource development and ownership of selective industries	Mainly government ownership	Infrastructure & human resource development, ownership of selective industries, and capacity building of the private sector

Source: author's compilation.

2.2 The Dergue Regime (1974-91)

In 1974 the Ethiopian Revolution erupted while the country was preparing the fourth five-year development plan. The military government nationalized most of the MLSM enterprises, which were later reorganized under state corporations. The government also declared ‘a

socialist economic policy' (PMAC 1975) and introduced various restrictions on the private sector and the market. Private investment was restricted to not exceed half a million Birr (approximately a quarter of a million US\$) and entrepreneurs may participate in only one venture. Price controls were instituted covering a wide range of products and the labour market highly regulated. The imports were also subjected to quantitative restrictions and higher tariffs in this period. The Ethiopian national currency, the Birr, was set fixed at about 2.07 per US\$1 and continued at this rate throughout the period of the military regime (1974/75-1990/91).

The manufacturing sector exhibited a sharp decline particularly in the first few years following the revolution.⁹ In 1977/78 the government initiated a successive production campaign locally known as '*zemecha*' to improve productivity mainly through increasing capacity utilization and have partly reversed the declining trend. Nevertheless, the government had no industrial policy per se until the mid-1980s. A central planning body was established in 1984 and a Ten-Year Perspective Plan (TYPP) was formulated. This comprises a macro-economic framework, a public investment programme, an indicative portfolio of projects and production targets for the period 1984/85-1993/94. The main focus of the industrial development plan in this period was to promote the import-substituting and labour-intensive industries. The public sector investment was considered as the main mechanism in the progress toward industrialization (World Bank 1985).

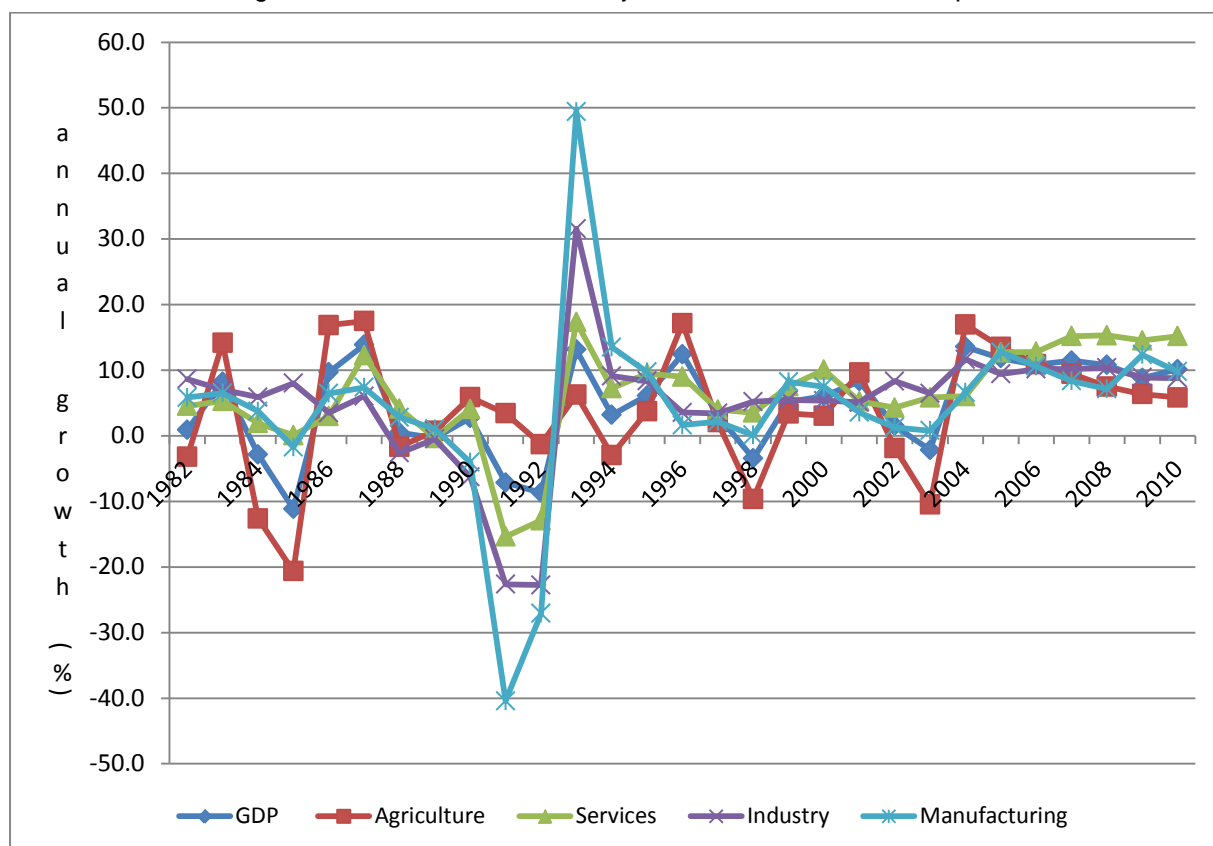
The nationalization and continued systematic restriction of the private sector from engaging in major economic activities had virtually reduced the emerging vibrant sector into micro- and small-scale manufacturing activities. In contrast the state became the sole responsible organ owning and operating the MLSM activities. In 1985/86, one decade after the revolution, the state-owned enterprises (SOEs) managed to command 95 per cent of the value added and 93 per cent of the employment of all MLSM enterprises (see Table 4). They continued to dominate the sector until the last year of the regime (1990/91). Despite their largest share in the sector, the SOEs financial position became increasingly weak and had to rely on government subsidies and overdraft facilities for their working capital requirements (UNIDO 1991: 13). Manufacturing establishments were seriously constrained by shortages of foreign exchange, raw material supply, working capital and the like. Most were forced to operate far below their installed capacity and because of the poor quality of produced product, they were unable to meet the local demand let alone compete in the international market.

The last years of the Dergue regime sought another sharp decline in the Ethiopian economy. Figure 1 sketches the growth of gross domestic product (GDP) and all major sectors over the period 1981-2010. The figure shows a continuous decline in GDP and all other major sectors particularly in the period 1987-91. The manufacturing sector was the most affected by this turmoil and exhibited an about 40 per cent decline in value added in 1991 alone. The number of establishments in the MLSM sector also shrunk from about 380 in 1987/88 to 275 in 1990/91 with a corresponding decline in employment. The hostile policies toward the private sector, large inefficiency in the public sector and intensification of the then undergoing conflict in the country were some of the major causes of this decline. In March 1990, the regime adopted a mixed economic policy to shift the country from one of a centrally

⁹ This downturn was mainly caused by the nationalization which resulted in an immediate exodus of foreigners who owned and operated the enterprises and the intensification of the conflict in Eritrea, particularly Asmara which at that time hosted for about a third of the national industrial capacity (World Bank 1985).

managed economy to a modest liberal economy. This initiative was, however, too late and short-lived without bearing fruit, as there was a regime change in May 1991.

Figure 1: Growth of GDP and major sectors 1981-2010, Ethiopia



Source: World Development Indicators (various years).

2.3 The EPRDF Regime (post-1991)

The EPRDF-led transitional government soon after it seized power announced that the country will follow a market-led economic policy. The first decade of the EPRDF regime (1991-99) was marked by a series of reforms under the SAP with the aim of reversing the command economic system by the way of fostering competition, opening the economy and promoting the private sector. In this period the government implemented three phases of IMF/WB sponsored reform programmes. The first phase of the structural and economic reform programme took place during 1992/93-1994/95. Measures undertaken during this period include among others:

- Liberalization of the foreign exchange market starting with a massive devaluation of the Birr by about 150 per cent in October 1992;
- Rationalization of public expenditure;
- Introduction of a new investment code, labour and public enterprise laws;
- Removal of subsidies and export tax rebate;
- Liberalization of prices except for petroleum;
- Reduction of the maximum import tariff from 230 per cent to 80 per cent; and
- Liberalization of payments for invisible transactions, and easing of market entry for privately-owned banks and insurance companies.

The second phase of the economic reform programme (1994/95-1996/97) aimed at limiting the role of the state in the economic activities and promotion of greater private capital participation. By October 1996, the country entered a three-year Enhanced Structural Adjustment Facility (ESAF) arrangement with the IMF and began the third phase of the reform programme spanning the period 1996/97-1998/99. Under this arrangement, the government committed itself to achieve broad-based economic growth with a stable macro-economic environment, while the liberalization measures were further strengthened.¹⁰

The favourable policy environment created by the economic reforms, coupled with macro-economic stability, revitalized the manufacturing sector and the economy in general. For example, in 1993 the industry and manufacturing value added grew by about 31 per cent and 49 per cent respectively, reversing the declining trend in the three preceding years (see Figure^o1). The high growth period, however, did not last long and started to slow down by 1996. The value added growth of the industry and the manufacturing sector in the period 1996-2003 was only 5 and 3 per cent annual average, respectively, which is only modest in comparison to the preceding years.

In 1998, the Ethiopian government adopted an export promotion strategy in an effort to address the lack of progress in export diversification. The strategy aimed at promoting high value agricultural exports (e.g. horticulture products and meat) and labour-intensive manufacturing products (clothing, textile, leather and leather products). This strategy was, nonetheless, relatively narrow in scope. A comprehensive industrial policy was then formulated in 2002/03. The industrial policy was more concretized into action by various sub-sector strategies and by the successive development plans such as Sustainable Development and Poverty Reduction Program (SDPRP) 2002/03-2004/05, the Plan of Action for Sustainable Development and Eradication of Poverty (PASDEP) 2005/06-2009/10, and the Growth and Transformation Plan (GTP) 2010/11-2014/15. The first development plan gave great emphasis to smallholder agriculture, while in the second and third ones the policy scope was broadened to encompass urban and the industrial sector development. The main emphasis of the IDS is to actively support the export-oriented and labour-intensive sectors. Various policy instruments were introduced to support and guide industrial development.

Ethiopia has experienced a double digit economic growth following the start of the implementation of these policies. Between 2003/04 and 2010/11, GDP grew by about 10.6 per cent annual average. All the major sectors including industry also grew by more than 10 per cent over this period (see Figure 1). Despite high and continuous growth over the last decade, the structure of the Ethiopian economy basically remained unchanged. Table 2 gives the share of the value added of the major sectors in GDP for the period 2000/01-2009/10. The only feasible change in the sectoral value added composition is that service has become the largest sector overtaking agriculture since 2007/08. The industry value added share to GDP, however, remained relatively static and never exceeded 14 per cent in the last decade.

¹⁰ For example, the maximum import tariff rate was further reduced from 60 per cent to 50 per cent; fertilizer price control was suspended; liberalization of the foreign exchange system was strengthened and foreign exchange retention scheme was introduced.

Table 2: Sectoral contribution (value added % GDP) 2000/01-2009/2010, Ethiopia

Year	Agriculture	Service	Industry value added (% GDP)				Industry total
	value added (% GDP)	value added (% GDP)	Manufacturing	Construction	Electricity	Mining	
2000/01	50.9	38.0	5.3	4.3	2.1	0.5	12.1
2001/02	49.1	38.6	5.3	4.9	2.2	0.5	12.9
2002/03	44.9	41.7	5.4	5.7	2.4	0.5	14.0
2003/04	47.0	39.7	5.2	6.1	2.3	0.5	14.0
2004/05	47.4	39.7	5.2	5.8	2.2	0.4	13.6
2005/06	47.1	40.4	6.1	4.3	2.5	0.5	13.4
2006/07	46.1	41.7	5.0	5.7	2.2	0.4	13.2
2007/08	44.6	43.5	4.8	5.6	2.2	0.4	13.0
2008/09	43.2	45.1	4.9	5.8	1.9	0.4	13.0
2009/10	42.0	46.1	4.9	5.8	1.8	0.5	13.0

Source: National Bank of Ethiopia (various years).

Table 2 also gives the share of industry sub-components' value added to GDP. The construction and the manufacturing are the two most important sub-sectors in the industry sector. For example in 2009/10, they respectively accounted for 5.8 and 4.9 per cent of GDP. Driven by the recent construction boom in the country, the construction sub-sector overtook the manufacturing since 2004. Unlike to many other African countries the mining sub-sector in Ethiopia contributes the least, i.e. only accounting for less than half a per cent of GDP over the review period.

3 The structure and performance of the manufacturing sector

3.1 Dual structure

In what follows we focus on the manufacturing sector, the only sector of which a detailed and long-term data is available. The Ethiopian Central Statistics Agency (CSA) conducts three types of surveys on the country's manufacturing activity. The coverage and frequency of the surveys differ by size and type of activity.

- The survey on medium- and large-scale manufacturing (MLSM) covers establishments that use power-driven machines and employ ten or more workers. This survey has been conducted on a census and an annual basis since the mid-1970s. The recent available report is for 2010/11.
- The survey on small-scale manufacturing (SSM) covers establishments that use power-driven machines but employ less than 10 workers. So far there are four rounds of surveys (1994/95, 2001/02, 2005/06, 2007/08) all of which on a sample basis.
- The survey on cottage/handicraft covers establishments performing their activity by hand or using non-power-driven machines or tools. As far as we know there was only one survey on this sector which was conducted in 2001/02 on a sample basis.

For lack of recent data the survey on cottage/handicraft will not be covered in the subsequent analyses. But, even if old, we use the 2001/02 survey on cottage/handicraft to show at least its relative importance in the manufacturing sector. In this year the CSA also simultaneously conducted surveys on the other two manufacturing categories; the SSM and MLSM establishments. Thus, we can determine the relative size of each of these sub-sectors. Table 3 reports the distribution in terms of number of establishments, employment, and value added between cottage/handicraft and the rest of the manufacturing activity including the SSM and MLSM, here referred as main manufacturing activity. According to the 2001/02 survey, the cottage/handicraft sector was estimated to comprise a total number of 974,676 establishments generating employment for more than 1.3 million people. This means, cottage/handicraft accounted for about 87 per cent of manufacturing employment. Its contribution in terms of value added, however, was only 21.5 per cent. In contrast, the rest of the manufacturing sector that include SSM and MLSM accounted for 13 per cent manufacturing employment and 78.5 of the value added in the same year. This suggests a huge gap in terms of labour productivity (value added per labour) between the cottage/handicraft and the rest of the manufacturing sector, respectively 600 Birr and 13,700 Birr. It is unlikely that the share of cottage/handicraft in the manufacturing sector to substantial decline in the recent years given the growing focus of the government to promote micro and small enterprises.

Table 3 also reports the distribution of the main manufacturing activity by size category for two periods, 2001/02 and 2007/08. The CSA defines small as establishments with fewer than ten employees and as medium and large those establishments employing more than ten workers. Here we define establishments with one to nine employees as micro, 10-19 as small, 20-49 as medium, and 50 or more employees as large. In 2001/02, about 97 per cent of the manufacturing establishments were micro firms employing less than 10 people. The share of micro firms in terms of number of establishments remained almost the same (96 per cent) after six years (2007/08) suggesting the continued dominance of the micro and firms in the Ethiopian manufacturing sector.

The employment distribution, on the other hand, shows strong modes at the two extremes, one at the micro size and another at the large ones that employ 50+ workers. For example in 2001/02, these size groups account for about 50 per cent and 44 per cent, respectively, of manufacturing employment outside the cottage/handicraft. The small and medium size categories, on the other hand, accounted for only 6 per cent of employment in the same year providing evidence of a 'missing middle'. The 2007/08 survey report also gives a similar picture, i.e. employment concentrated at the micro and large size categories while the small and medium size categories accounted for no more than 10 per cent. In terms of value added the size distribution is extremely skewed towards the largest size group (50+ employees). For example in 2007/08, the large size group accounts for about 83 per cent of manufacturing value added, while the micro firms contribute only 11 per cent of the manufacturing value added. The size distribution of the Ethiopian manufacturing sector is generally consistent with previous observations in many other African countries (e.g. Mazumdar and Mazaheri 2003: 26-61).

Table 3 also shows a large disparity in capital-intensity and productivity across the size categories. The average capital to labour ratio in large firms is more than 10 and three times larger than the micro and small firms, respectively. Value added per labour difference among the size groups is also striking. For example in 2007/8, the value added per employee in large firms (employing 50+ workers) was about five times than of micro firms (employing less than ten workers), above four times than the small size category (10-19 employees) and about

double than the medium sized enterprises category (20-49 employees). This is generally true when looking at other years as well (see for example, 2001/02 survey results in Table 3).

Table 3: The size distribution of the Ethiopian manufacturing, selected years

	Number of establishments		Employment		Value added		Fixed capital per labour	Value added per labour
	Number	Share (%)	Number	Share (%)	(millions Birr)	Share (%)	(000s Birr)	(000s Birr)
2001/02 survey								
Cottage/handicraft	974,676	96.7	1,306,867	87.0	734.95	21.5		0.6
Main manufacturing	32,772	3.3	195,835	13.0	2,677.5	78.5		13.7
Total manufacturing	1,007,448	100	1,502,702	100	3,412	100		
Main manufacturing disaggregated by size (number of employees), 2001/02 survey								
< 10 (micro)	31,863	97.2	97781	49.9	463.8	17.3	7.7	4.7
10-19 (small)	375	1.1	4,907	2.5	40.9	1.5	22.2	8.3
20-50 (medium)	230	0.7	6,843	3.5	85.5	3.2	65.0	12.5
> 50 (large)	304	0.9	86,304	44.1	2,087	77.9	65.3	24.2
All main manufacturing	32,772	100	195,835	100	2,678	100		
Main manufacturing disaggregated by size (number of employees), 2007/08 survey								
< 10 (micro)	43,338	95.7	138,951	51.0	1,140	11.0	7	8.2
10-19 (small)	846	1.9	10,690	3.9	186	1.8	22.9	10.8
20-50 (medium)	519	1.1	14,757	5.4	401	3.9	47.6	21.6
> 50 (large)	565	1.2	108,226	39.7	8,590	83.3	70	42.6
All main manufacturing	45,268	100	272,624	100	10,317	100		

Note: main manufacturing here refers to manufacturing establishments that use power-driven machines, thus, includes the SSM and MLSM sub-sectors.

Source: CSA (various years).

3.2 Entry process in the MLSM sector

Examination of the long-term performance requires a long-term data. In Ethiopia, this is only available for the MLSM sector, thus, micro firms with less than 10 workers are not included in this sub-section. The number of establishments in the MLSM tripled in the last decade and almost doubled in the last five years alone (see Table 3). In this period the public share in the sector correspondingly declined, for example between 1999/00 and 2009/10, the public share in the manufacturing sector fall from 25.7 to 6.4 per cent in terms of number of establishments and from 86.25 per cent to 25.67 per cent in terms of employment. This

suggests that the growth in the manufacturing sector is driven by the high entry of private-owned firms.

Table 4: Entry process, ownership, and average size in the MLSM

Year	Total # of est.	Public share (# of est.)	Employment ('000s)	Public share (empl.)	Average size (empl.)
1979/80	351	45.3	76.63	88.85	218.3
1985/86	369	48.8	90.85	93.33	246.2
1990/91	275	52.4	84.00	93.08	305.5
1995/96	627	25.7	90.04	86.25	143.6
1999/00	788	15.5	95.71	56.13	121.5
2004/05	1207	10.4	110.16	48.70	91.3
2009/10	2172	6.4	186.80	25.67	86.0

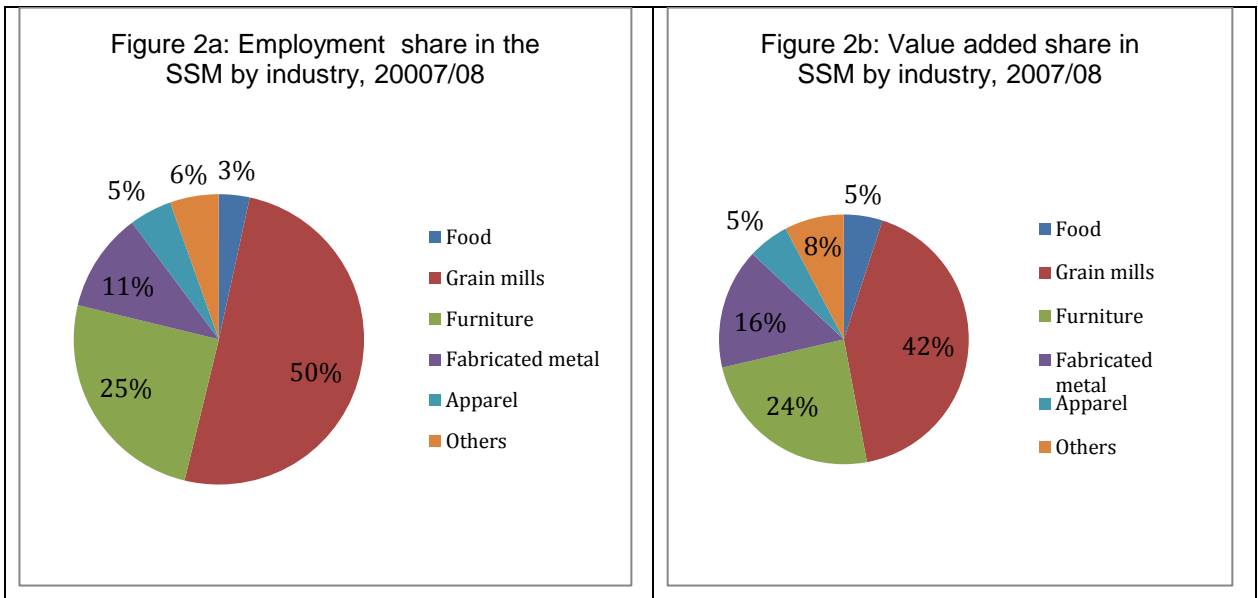
Source: CSA (various years).

Although the population of establishments in the MLSM sector doubled in the last decade employment is not growing with the pace of growth in the number of establishments. This is because the new entrants are mostly small-size firms. As a result, the average employment size has shown a declining trend over time. For example, the average employment size of a firm fell from about 305 in 1990/91 to 86 in 2009/10. Thus, despite the high entry in the number of firms the sector contribution to employment remains marginal. For example in 2009/10 the Ethiopian MLSM employed only 186,800 people. This is indeed very low for a country with above 80 million inhabitants out of which half are in the labour force.

3.3 Sectoral composition

In this section we present the sectoral composition of the SSM and MLSM sectors separately due to a difference in availability of data for these two size categories. Figure 2 gives the SSM sectoral composition in terms of employment and value added for the year 2007/08. The grain mills sector is the dominant industry accounting for about 50 per cent of the number of persons engaged and 42 per cent of the value added generated in the SSM sector. Furniture and fabricated metal products are the second and third most important sub-sectors, respectively, accounting for 25 per cent and 11 per cent in terms of employment and 24 per cent and 15.6 per cent in terms of value added in the micro size category.

Figure 3 gives the pattern in the sectoral composition of the MLSM for the period 1978-2010. The MLSM sector is likewise characterized by a high concentration of a limited range of light manufacturing activities such as food and beverage, textile, leather, non-metallic, and furniture. Food and beverage is the largest industry accounting above third in terms of employment and value added in 2010. In the last three decades, the share of this industry has been gradually rising in terms of employment but fluctuating between 30-50 per cent in terms of value added. The textile and apparel industry is the second largest but its share has shrunk over time. For example between 1978 and 2010, its share in value added fell from 32 per cent to 15 per cent and employment from 46 per cent to 16.5 per cent. The third most important industry is the manufacturing of non-metallic mineral products and has exhibited an increasing trend particularly in the last decade.



Source: CSA different survey years.

Figure 3a: Sectoral employment share in MLSM, 1978-2010

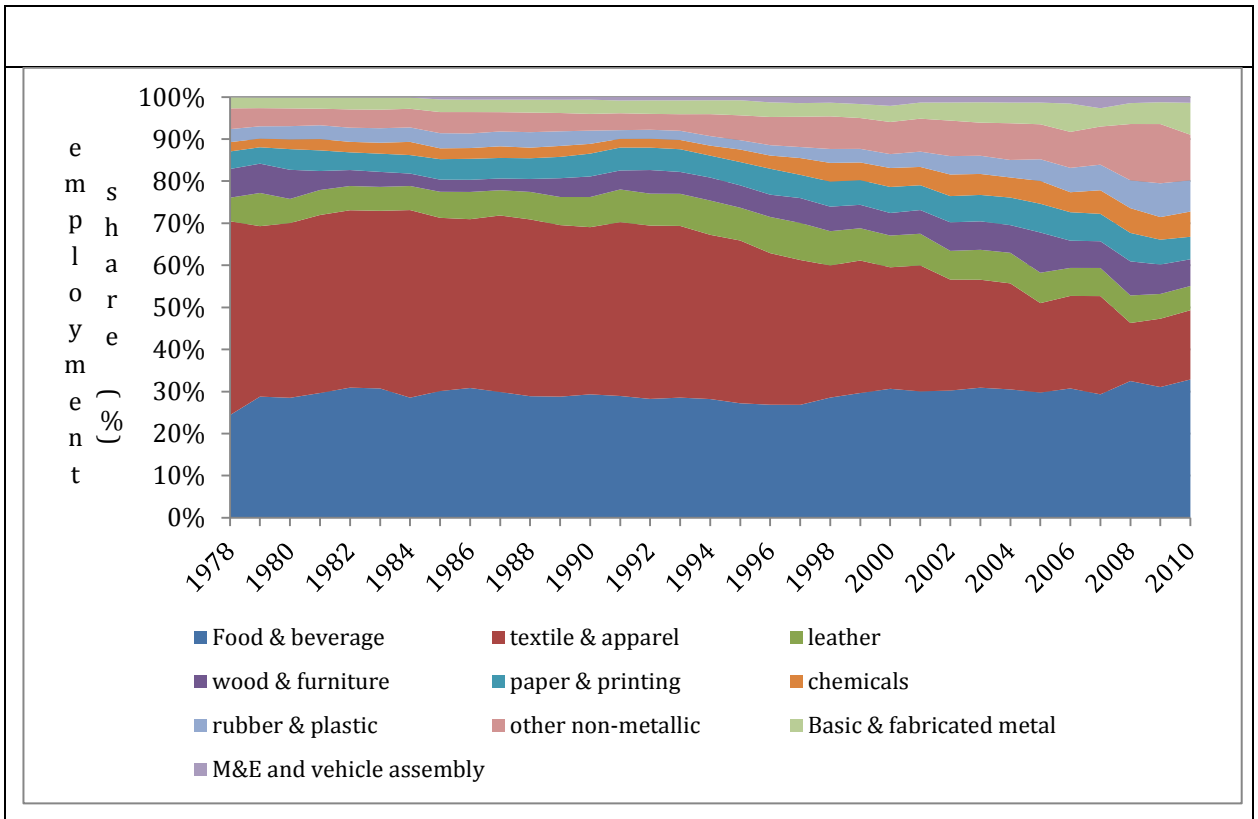
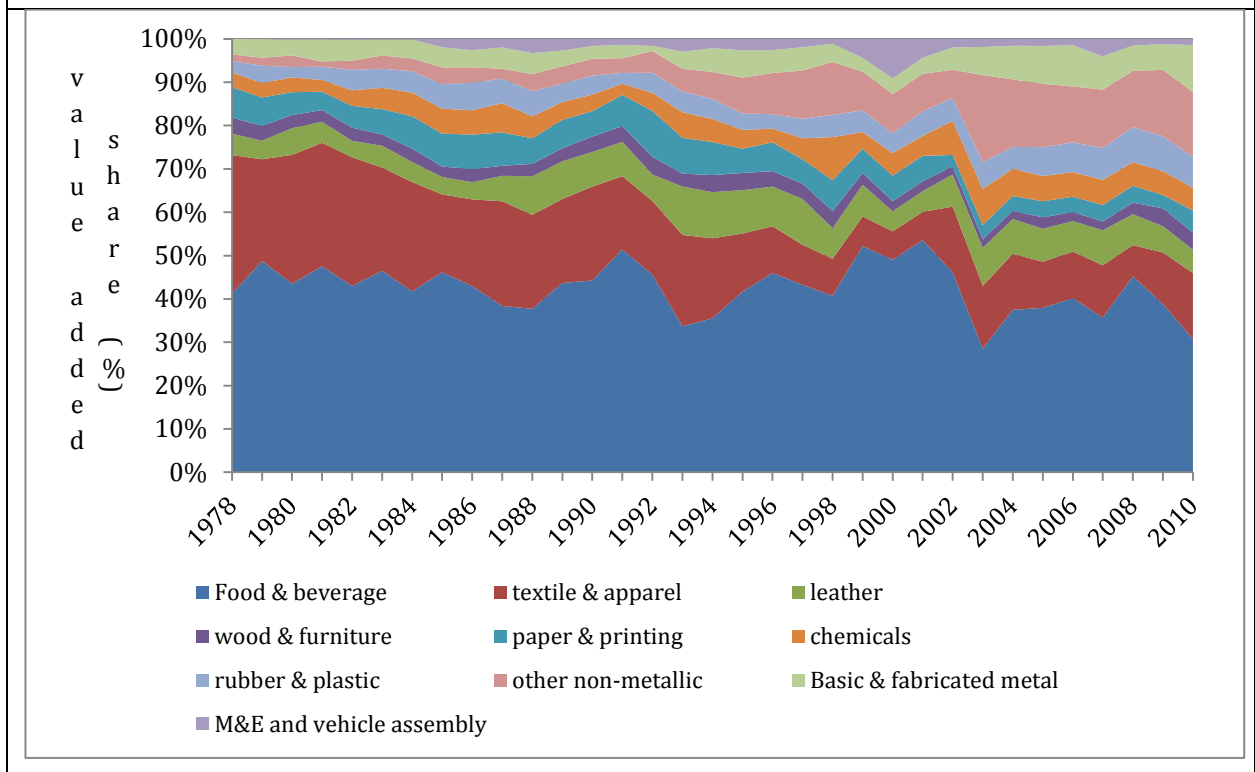


Figure 3b: Sectoral value added share in MLSM, 1978-2010



Source: CSA (various years).

In contrast, other basic sectors such as chemicals, basic metal, and engineering remain underdeveloped. For example in 2010, the basic metal and engineering sector which includes the manufactures of fabricated metal products, machinery and equipment, and motor vehicles and trailers accounted for no more than 7 per cent of employment and 12 per cent of value added of the MLSM sector. Similarly, the chemical sector only accounted for only 6 per cent of employment and 5 per cent of value added in the same year.

The sectoral composition discussion above is based on broader industry classification, i.e. at two digit level of aggregation. Next we examine the emerging and declining sectors in the MLSM based on a further disaggregated data, i.e. at four-digit level of ISIC product classification. Table 5 reports the ranking and share of the top ten industrial products in terms of output (gross value of production) for three selected years over the last 15 years. In 2009/10 the top ten products include in this order the manufacturing of sugar, cement, liquors, flour, plastic, soft drink, structural metal, textile, basic iron and steel, and detergent and soaps. These products in sum accounted for about 63 per cent of total MLSM production value. Some of these products, such as structural metal and detergent, were not in the list of top ten products until recently. Plastic, which became 5th in the 2009/10 product ranking, is also an emerging industry.

Table 5: Ranking of top ten manufacturing products in Ethiopia

Top ten products produced (4-digit level) rank and share (%)						
1995/96		2002/03		2009/10		
Product type in order	Share (%)	Product type in order	Share (%)	Product type in order	Share (%)	
1	Malt liquors and malt	9.46	Sugar and confectionary	12.40	Sugar and confectionary	8.89
2	Spinning, weaving & finishing	9.42	Cement, lime and plaster	9.40	Cement, lime and plaster	8.37
3	Sugar and confectionary	8.86	Spinning, weaving & finishing	8.42	Malt liquors and malt	7.88
4	Tobacco	7.65	Malt liquors and malt	7.50	Flour	6.95
5	Tanning & dressing of leather	7.41	Tanning & dressing of leather	7.26	Plastics	6.83
6	Flour	6.06	Flour	5.15	Soft drinks	5.85
7	Basic iron and steel	5.03	Soft drinks	5.08	Structural metal products	5.80
8	Cement, lime and plaster	4.97	Basic iron and steel	4.36	Spinning, weaving & finishing	4.98
9	Soft drinks	4.70	Publishing and printing	3.35	Basic iron and steel	4.05
10	Bodies for motor vehicles	4.50	Plastics	3.33	Soap detergents, perfumes	3.71
Top 10 share sum		68.07			66.26	63.31
Total MLSM GVP (billion Birr)		5.53			8.95	42.0

Source: CSA (various years).

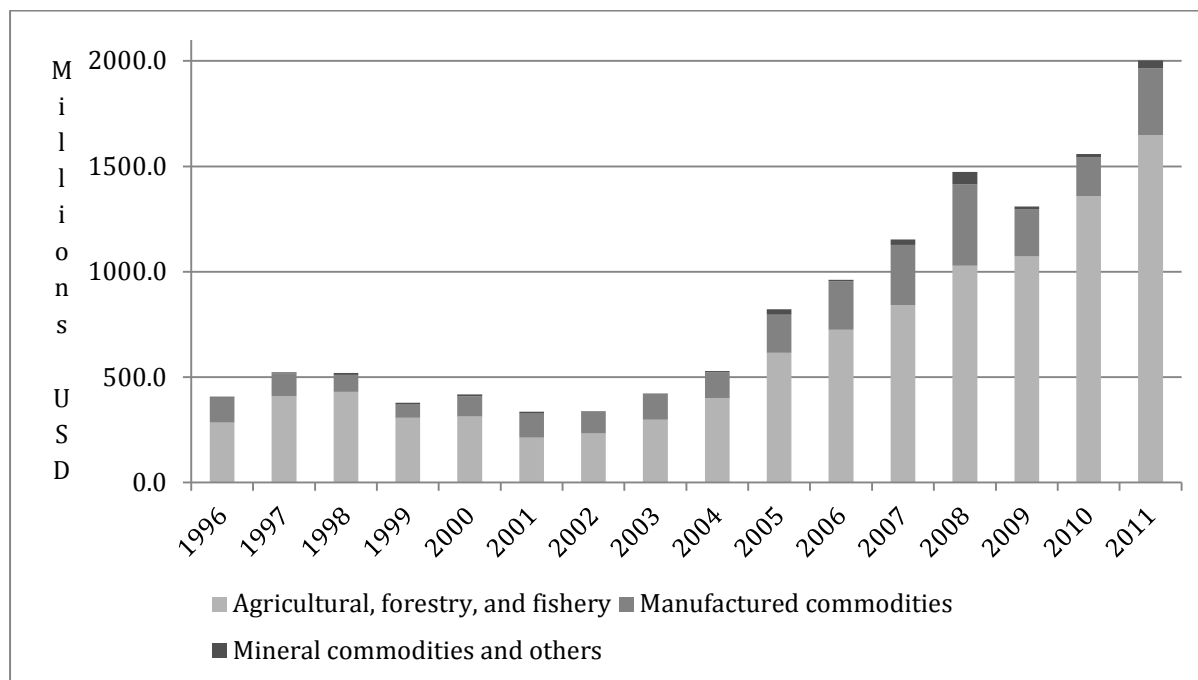
The other seven products in the top ten list have been in there at least for the last 15 years, but experienced reordered rankings. The manufacturing of sugar was the first top product in both recent years 2002/03 and 2009/10, which is improvement in comparison with its 3rd ranking in 1995/96. The expansion of the cement industry is particularly noticeable, which is stimulated by the boom of the construction sector. It became the second top product, which is an impressive progress from its 8th ranking in 1995/96. In contrast, the spinning and weaving product rank dropped from 2nd to 8th and the leather tanning from 5th to 15th between 1995/96 and 2009/10. This provides additional evidence that the textile and tanning of leather industries are among the stagnant ones, which is not good news for the policy makers given their relentless efforts to promote these industries over the last decade.

3.4 Export orientation and import dependence

Ethiopian merchandise exports have dramatically increased in the recent years. Figure 4 gives Ethiopia's pattern of exports in the last 15 years by sector. The information was taken from UN-COMTRADE and based on mirror import records of all countries for imports from

Ethiopia.¹¹ Prior to 2004, the overall value of exports barely exceeded half a billion US\$. It, however, started to grow faster since 2005 and reached above US\$2 billion by 2011, which is almost a quadruple in comparison to 2004. Both the agriculture and manufacturing exports also grew but the growth of the former is much higher than the later. For example, between

Figure 4: Ethiopia's exports pattern by major sectors, 1996-2011



Source: UN-COMTRADE (n.y.).

2001 and 2011 agriculture exports grew about eight-fold, while manufacturing exports three-fold. This suggests that there is little export diversification towards manufacturing and the export structure continues to be increasingly dominated by agricultural products

Next we further explore the trend in manufacturing exports based on a four-digit disaggregated trade data. Table 6 reports the top ten manufacturing exports in selected years over the last 15 years. For a long time the tanning and dressing of the leather industry, producing semi-processed hides and skins, has been the dominant manufacturing export in Ethiopia. The sector had seen a sharp decline in most of years in the 2000s partly due to a restructuring following the government policy to discourage the export of unprocessed leather with the aim of increasing the domestic value addition. For this reason it was undertaken by other products, for example in 2003 by meat and meat products export. But it has started to recover in the last two years and reclaimed the top rank in 2011. In one year, exports of products of the tanning and dressing of leather industry almost doubled, i.e. increasing from US\$62 million in 2010 to US\$113.5 million in 2011.

¹¹ The exports reported by Ethiopia are a bit higher than the import records reported here and sense some inconsistency. It is believed that imports are usually recorded more accurately than exports.

Table 6: Ranking of top ten manufacturing exports in Ethiopia

1996			2003			2011		
Product code	Product Description	Share (%)	Product code	Product Description	Share (%)	Product code	Product Description	Share (%)
1911	Tanning and dressing of leather	26.13	1511	Meat and meat products	26.98	1911	Tanning and dressing of leather	34.70
3530	Aircraft and spacecraft	24.11	1911	Tanning and dressing of leather	22.74	1730	Knitted and crocheted	9.89
1511	Meat and meat products	22.63	3530	Aircraft and spacecraft	14.59	1549	Other food products	8.91
3312	Instruments and appliances	16.78	1542	Manufacture of sugar	7.67	1511	Meat and meat products	8.55
1711	Preparation and spinning of textile	2.10	1711	Preparation and spinning of textile	6.40	1810	Wearing apparel	7.79
1549	Other food products	1.06	1549	Other food products	5.79	3530	Aircraft and spacecraft	7.43
2411	Basic chemicals	1.06	2924	Machinery for mining	1.60	1711	Preparation and spinning of textile	4.07
1810	Wearing apparel	0.71	1721	Made-up textile article	1.40	1721	Made-up textile article	3.70
3190	Other electrical equipments	0.61	1533	Prepared animal feed	1.30	1920	Footwear	2.52
3110	Electric motors, gen	0.48	1810	Wearing apparel	1.20	1514	Vegetable and animal oil and fat	1.15
	Sum of top ten export share	95.69			89.67			88.70
	Total exports (million US\$)	119.97			127.28			327.19

Source: UN-COMTRADE (n.y.).

The food industry (including meat and meat products; other food products; and vegetable and animal oil and fat, and sugar) is the second most important manufacturing export. This is despite the temporary ban of sugar export in recent years due to shortage in the domestic market. The textile and apparel exports are also among the top exports. For example in 2011, three types of textile products (knitted and crocheted preparation and spinning of textile and made-up textiles) and apparel were among the top ten manufacturing exports. Export of manufacture of aircraft and spacecraft is among the top ten in all the sample years. It is not

clear to us yet whether this reflects sales of second-hand aircrafts by Ethiopian Airlines or manufacturing of components.

Table 7 reports the export share in sales, share of imported raw materials, and export coverage of exports by sector. The export to sales ratio is small, for example in 2010 the average share of export in total sales of the MLSM sector was only 3 per cent. This is much lower not only than in average for other developing countries (for example, in average for Sub-Saharan Africa, SSA) but also in comparison to its records in previous years. Exports to sales ratio was 10 per cent in 2002/03 and 6 per cent in 2007/08. The export to sales ratio has also declined in the three most important export sectors such as leather, apparel, and textile sectors during this period. The declining export to sales ratio implies that the domestic-oriented sectors are growing much faster than the export sector, given the fact that exports also grew in absolute value.

Table 7: Export sales and imported raw materials by sector MLSM (2009/10)

	Export share in sales (%)			Imported raw materials share (%)			Export coverage of imported raw materials (%)		
	2002/03	2007/08	2009/10	2002/03	2007/08	2009/10	2002/03	2007/08	2009/10
Food & beverage	6.00	3.14	1.78	22.03	27.91	24.8	79.88	28.62	16.29
Tobacco	0.00	0.31	0.45	79.84	13.8	5.5	0.00	8.61	12.41
Textile	17.24	14.06	9.19	29.04	29.64	37.0	93.52	80.24	47.60
Apparel	0.10	26.08	12.92	25.66	37.28	50.3	0.79	138.06	55.10
Leather	69.11	61.26	36.27	21.64	23.56	34.4	423.9	382.35	172.86
							6		
Wood products	0.00	0	0.05	54.63	23.87	21.1	0.00	0	0.39
Paper	0.00	0	0.00	75.36	81.54	59.5	0.00	0	0.00
Chemical	0.00	1.58	1.02	72.33	87.06	70.5	0.00	2.92	2.30
Rubber & plastic	0.00	0	0.13	85.00	77.22	92.3	0.00	0	0.27
Other non-metallic mineral products	0.57	0.13	0.07	29.79	19.84	58.1	9.35	4.13	0.26
Basic iron & steel	0.00	0	2.42	99.17	99.8	79.1	0.00	0	4.25
Fabricated metal	0.00	0	1.53	88.97	80.19	84.6	0.00	0	2.92
Machinery & equipment	0.00	0	2.04	92.32	97.68	85.1	0.00	0	4.25
Motor vehicles etc.	0.00	0	0.00	93.39	97.13	98.5	0.00	0	0.00
Furniture	0.00	0.8	0.00	42.30	52.51	50.1	0.00	3.01	0.01
Total	9.95	6.05	3.03	43.52	53.61	51.0	52.93	24.42	11.65

Source: CSA (various years).

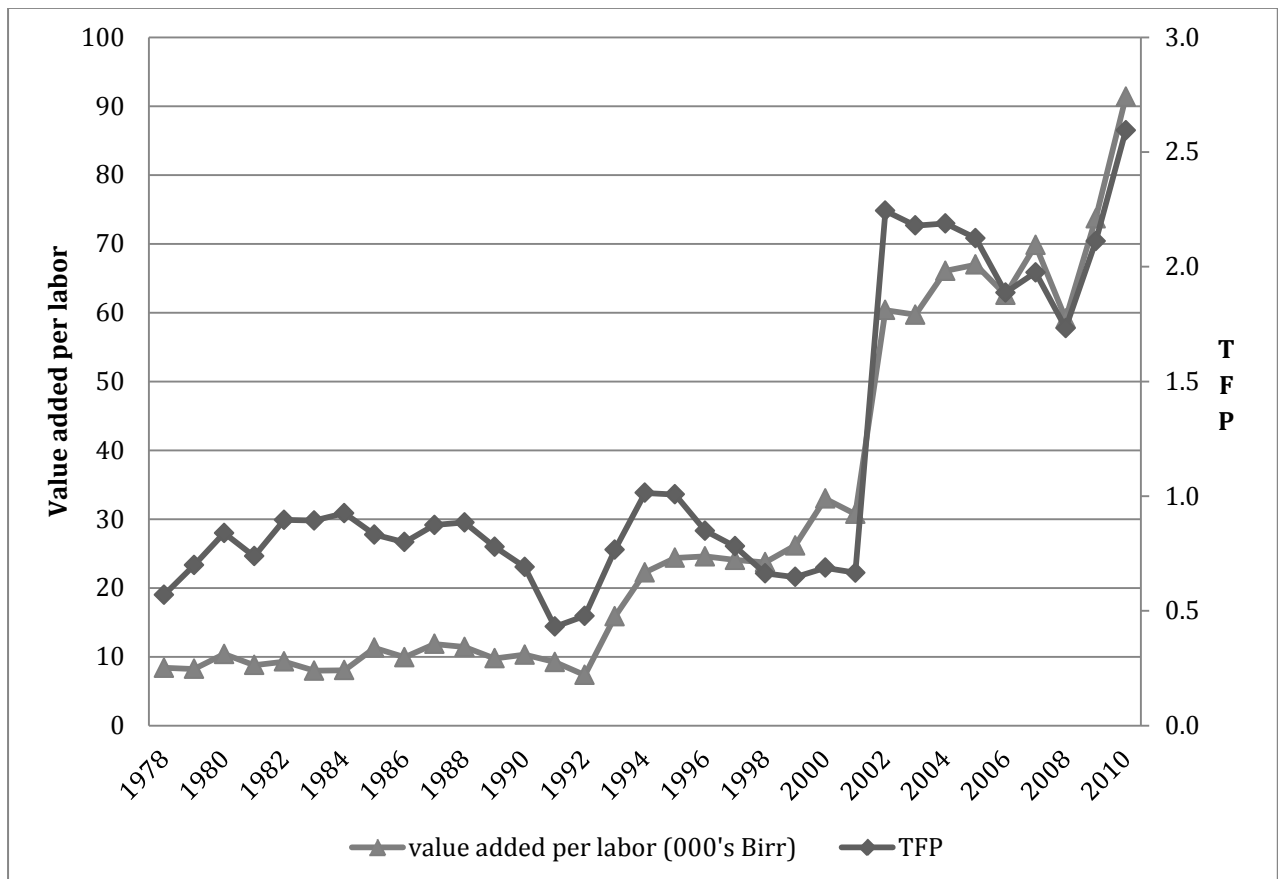
The dependence on imported raw materials differs by sector. It is relatively lower in the agro-industries such as food, beverage, textile, apparel, leather, tobacco, and furniture accounting a maximum of 50 per cent, i.e. below the average. On the other hand, the chemical, plastic and rubber, basic iron and engineering industries heavily depend on imported inputs ranging from 70 per cent to 99 per cent of total cost of raw materials. Unlike the agro-industries these sectors also export none or less, thus, their export coverage of imported raw materials is very marginal.

The overall dependence of the manufacturing sector on imported raw materials has shown an increasing trend. There is, however, a mixed trend when looking by sectors. What is surprising here is that the apparel, leather, and non-metallic mineral products, which are customarily among the less dependent, have shown an increasing dependence on imported raw materials over the given period. In contrast, the import dependence of the wood and paper industries has declined. The declining share of export sales and simultaneous increase in import dependence means the export coverage of imported raw materials of the manufacturing sector had fallen through time. The total export coverage of imported raw materials in the MLSM plunged from about 53 per cent in 2002/03 to 12 per cent in 2009/10, which is also reflected in the main export sectors. This is another worrying development and suggests the lack of domestic linkage particularly between the industry and the agriculture sectors.

3.5 Long-term patterns of productivity

Examination of the pattern of productivity change requires long-term data. In Ethiopia, this is only available for the MLSM sector, thus, the micro firms with less than 10 workers are not included in the analysis of this sub-section. Moreover, information in the MLSM sector before 1995/96 can only be found at a two-digit aggregate industry level. We, thus, rely on aggregate industry level data over 1978-2010 to calculate the long-term trend in productivity measured by value added per labour and total factor productivity (TFP). The variables with monetary values such as value added and capital are adjusted using a GDP deflator. The TFP is derived from residual of the Cobb-Douglas production function based on the aggregate industry level data.

Figure 6: Productivity pattern of the M&L manufacturing sector, 1978-2010



Source: CSA (various years).

Figure 6 sketches the trend of labour productivity and TFP of the Ethiopian MLSM sector for the last three decades. Both the value added per labour and TFP show broadly similar patterns over the period under study and can roughly be divided into three episodes. The first is the period of stagnation/decline, which covers 1978-91 (the military regime period). The value added in this period was lower and almost constant at about 10,000 Birr per employee and the TFP remained below one with a further plunge in both in the last years of the regime. The second is the period of modest productivity improvement and roughly covers the first ten years of the EPRDF government in power (1992-2001). In this period both value added per labour and TFP have shown an increasing trend and then slowed down. The third period which covers 2002-10 shows a remarkable improvement in productivity in both value added per labour and TFP. The pattern of productivity is generally consistent with the aggregate industry performance that is shown in Figure 1.

4 The present industrial policy: framework and practice

4.1 General principles

In 2002/03, after a decade in power, the EPRDF-led government formulated a comprehensive IDS.¹² The IDS is based on the government's broader development vision ADLI, which was developed in the mid-1990s and subsequently elaborated. The philosophy of ADLI is that agriculture development plays a leading role in the industrialization process by preparing various conditions for full-fledged industrialization. The primary principle of the IDS is, therefore, the linkage between industry and agriculture. The rationale is that given the agrarian nature of the economy (constituting 85 per cent of the population), industrial development should rely on agriculture (e.g. as a source of raw material and foreign exchange, and a market for outputs) and serve agriculture by providing agricultural inputs and consumer goods.

The IDS has also set out other principles including trade orientation, factor intensity, and the relative role of the public and private sector. It stipulates that a sustainable and fast industrial development can only be ensured if the sector is competitive on the international market. Hence, the export-oriented sectors should lead industrial development and be given preferential treatment. It also gives emphasis for labour-intensive industries as a way to exploit the comparative advantage of large and cheap labour the country is endowed with and maximizing employment creation in the industry.

The strategy recognizes the role of the private sector as an engine in the industrialization process. It argues for the need to make concerted efforts to enhance the private sector to discharge its leading role given that it was weakened by the deliberate policy of the previous regime. The document also made a clear distinction between 'rent-seeking' and 'developmental' capitalists and the need to curtail the former and promote the latter. In contrast to the neo-liberal advice the strategy explicitly argues for a strong role of the state; not merely as a facilitator but also as a leader (i.e., providing direct support, co-ordinating and guiding the private sector). Inspired by the East Asian experience the government has recently introduced the language of 'developmental state' as its policy principle regarding the state-business relationship.

The strategy cites two important mechanisms in which the government could engage and promote the private sector; creating a conducive environment, and providing direct support for selected sectors. The following two sub-sections examine the policy practices under two broad headings, i.e. creating a conducive environment and direct support for selected sectors. The last sub-section provides industry case studies on the implementation of the sectoral support.

4.2 Creating a conducive environment

By way of creating a conducive business environment for the development of the private sector, the strategy paper identified a number of concrete intervention areas among others: (i) maintaining macroeconomic stability; (ii) building a functioning and well-regulated financial sector; (iii) creating dependable infrastructure services; (iv) developing skilled and effective human resource; (v) creating efficient civil service and legal framework; (vi) developing

¹² Federal Democratic Republic of Ethiopia (2002), Ethiopian Industrial Development Strategy, Addis Ababa, Ethiopia. As far as we know the original industrial policy document is written in Amharic and yet there is no official English translation.

industrial zones in major cities and towns with all required infrastructure facilities. Below we examine some of these interventions.

Macroeconomic (in)stability

The IDS foresees the need to ensure macroeconomic stability through creating stable and lower inflation rates and interest rates as well as stable exchange rate. The government planned to control inflation by refraining from excessive government borrowing and maintaining sound monetary policy. Inflation was historically low in Ethiopia. Alike the average general inflation rate during the first few years since the policy initiated was relatively low (single digit) and stable. The government envisaged maintaining a single digit inflation rate in the PASDEP period (2005/06-2009/10). Table 8 reports some macroeconomic indicators for the periods 1998/99-2009/10. Unlike the stated target, inflation showed a remarkable departure from the historical records starting 2005/06 and reaching 36.4 per cent in 2008/09. The government took a combination of fiscal and monetary policy to curb the inflation and was able to bring down inflation rate to a single digit in 2009/10. A year after (2010/11), the country faced once again a higher inflation rate (18.1 per cent) following the relaxation of the monetary and fiscal policy in relation to the implementation of the recent growth and transformation plan.

Table 8: Price, interest rate and exchange rate patterns in Ethiopia, 1998/99-2010/11)

Year	Minimum deposit rate	Lending rate min-max	General inflation rate	Real interest rate ¹	Exchange rate parallel market	Inter-bank weighted market rate	Real effective exchange rate
1998/99	6	10.5-13.0	4.3		7.69	8.12	115.3
1999/00	6	10.5-13.5	5.4	3.8	8.31	8.22	100.0
2000/01	6	10.5-15	-0.3	17.6	8.79	8.46	93.9
2001/02	3	8-10.5	-10.6	12.7	8.68	8.566	91.1
2002/03	3	8-10.5	10.9	-5.1	8.709	8.6	104.1
2003/04	3	7-10.5	7.3	3.0	8.675	8.63	105.8
2004/05	3	7-14	6.1	-2.6	8.71	8.66	100.4
2005/06	3	7-14	10.6	-4.1	9.026	8.69	109.9
2006/07	4	7-14	15.8	-8.3	8.96	9.03	129.6
2007/08	4	8-15	25.3	-17.1	9.56	9.61	145.6
2008/09	4	8-16.5	36.4		11.81	11.3	197.3
2009/10	4	8-16.5	2.8		13.68	13.53	151.8
2010/11	5	7.5-16.3	18.1		16.52	16.11	

Source: ¹WDI (various years); others from National Bank of Ethiopia Annual Reports 2009/10 and 2010/11.

The interest rate was deliberately kept low over the last decade. With the souring inflation real interest rate was virtually negative over most of the years since 2002/03. This shows the huge sum of implicit financial subsidy provided to the investors who borrow from the formal banking sector. After a major devaluation in 1992, the exchange rate of the Birr was determined through auction. The rate was stable and the difference with the parallel market

relatively lower for a longer period that followed. There was, however, a shortage of foreign currency and at times rationing in the recent years partly due to rising domestic inflation. As a reaction to the increasing overvaluation, the government devalued the Birr a couple of times, for example, by about 23 per cent in 2009/10 and 20 per cent in 2010/11. Consequently, the official exchange rate of Birr against US\$ stood at above 16.5, which is almost double in comparison to the rate in 2005/06. Among others the rise of the domestic price has resulted in a steep rise of the real effective exchange rate (REER). The REER appreciated by about 52 per cent between 2004/05 and 2009/10 undermining the competitiveness of the export sectors.

Institutional and regulatory framework

Ethiopia implemented a wide range of institutional reforms since the early 2000s with the aim of addressing the bottlenecks to the private sector development. One of the prominent initiatives was the Civil Service Reform Program (CSRP) that was launched in 2001 under the broader National Capacity Building Program (NCBP). Service delivery was one of the five key areas of CSRP and a 'special programme' of Performance and Service Delivery Improvement Policy (PSIP) was introduced in priority ministries and agencies that interface directly with the private sector.¹³ PSIP, along with other reform programme areas, have promoted Business Process Engineering (BPR) as a key management initiative (Mengesha and Common 2006). In this period, the country simultaneously implemented other reforms that include business registration, substantial revision to the investment code, modernized the tax regime introducing value added tax (VAT), established competition policy, and partially reformed the customs administration (World Bank 2009).

The civil service reform and particularly the BPR have led to substantial restructuring in the government offices that deliver service to the private sector. Service delivery had improved as a result. The required procedures and time for business registration/license in Ethiopia were reduced significantly. According to the World Bank 2010 Doing Business report (Doing Business various years), Ethiopia ranked 89th in the starting a business rank and 104th in the overall ease of Doing Business out of 183 countries. This was not only better than the average country in the SSA and low income countries (LIC) group but also an improvement from its own ranking in previous years.

Nonetheless, the country could not maintain this improvement, rather its ranking has slipped over the recent years. For example, the World Bank's 2012 report shows that the country ranking deteriorated to 162nd and 127th, respectively, in terms of starting business and overall ease of doing business. This might be a reflection of the recent moves by the government to introduce and enforce a number of erratic regulations alleging to curb the 'rent-seeking' and discipline the 'rouge' private sector. When foreign exchange crisis surfaced in 2009, the government shutdown 94 warehouses of coffee exporters and revoked their license accusing them of hoarding. As a reaction to the soaring inflation it implemented a failed attempt to control price of some essential consumer goods in January 2011 through price cap. It also introduced new regulations for business registration claiming to reduce the monopoly power of few business people in the wholesales (mainly imports) sector and easing the inflation pressure, which has resulted in a slow and lengthy period of business registration and renewal. Similar actions took place in relation to land administration (the real estate

¹³ The other key areas of the CSRP reform include expenditure control and management, human resource development, top management systems, and ethics.

sector and the overall lease system), customs administration, and the private banks.¹⁴ These actions are thought to have eroded the confidence of the private sector and predictability of policies.

As part of the reform process the Ethiopian government has increased its engagement with the private sector. It has promoted the formation and strengthening of the Chamber of Commerce and Sectoral Associations. It also established a public-private consultative forum, jointly chaired by the government and the private sector representatives (MoFED 2006).¹⁵ In this regard, there is a long-standing complaint by the private sector that the state-owned and party-affiliated enterprises (endowments) benefit from privilege access to policy makers. They are perceived to have received preferential treatment for example in credit, government contracts, foreign exchange allocation which the government denied firmly. The issue of the party-affiliated enterprises has particularly been politically sensitive. A survey report of the World Bank (2009: 55) found that state-owned enterprises are more likely to have access to public procurement and finance than their private counterpart but no strong evidence of such favour toward party-affiliated firms. The report concluded that in large part the issue (complaint toward party-affiliated enterprises) is one of perceptions of the credibility of Ethiopia's commitment to a level playing field.

Infrastructure development

Ethiopia, as a landlocked country, has long recognized the importance of improving its transportation infrastructure to reduce the cost of doing business. A ten-year road sector development program (RSDP) was implemented in two phases from 1997 to 2007. The road development plan was extended up to 2010 under a third phase. A substantial part of these projects aimed at improving the connections with neighbouring countries and particularly seaports. Huge investments had also been effected by the government for the development of the power and telecommunications sectors in the PASDEP period. The recent five-year Growth and Transformation Plan (2010/11-2014/15) (GTP), carries far more ambitious targets for the power and telecommunication sectors. According to Grant-Makokera and Rantao (2012) the Ethiopian government currently spends 10 per cent of its GDP (about US\$1.3 billion annually) on infrastructure which is by far the highest on the African continent in terms of share of GDP.

Despite huge and continued investment in its infrastructure Ethiopia, as a landlocked country, still remained the most difficult places in the world from which to engage in the global economy because of the absence of a competitive network of global logistics. According to the World Bank Trade Facilitation indicators, Ethiopia ranked 123rd out of 155 countries in the world overall Logistics Performance Index (LPI) in 2009.¹⁶ The country is also among the lowest in terms of use of information and communication technology (ICT). For example in 2011, the number of mobile subscribers and internet users per 100 people in Ethiopia was

¹⁴ For example, starting 2011 the private banks are forced to purchase National Bank of Ethiopia bonds with 27 per cent of their lendable capital in an effort to finance the massive public investments. There is a claim that this has started to crowd out the private sector with regard to access to credit.

¹⁵ Sector-based public-private dialog forums including leather & leather producers, textiles & garment producers, horticulture and floriculture producers, pharmaceutical & medical equipments producers, and metal works & engineering manufacturers' forums are underway.

¹⁶ Trade logistics include the various processes and activities involved in getting goods to market: transportation, warehousing, cargo consolidation, border clearance, distribution in the destination country, and payments (WDI various years).

only 16.67 and 1.10, respectively. This is very low compared to the average in SSA, i.e. 53.9 mobile subscribers and 12.66 internet users per 100 people in the same year (WDI, World Bank). The quality of the services of the telecommunication and power sectors in Ethiopia is even more worrying and often attributed to the absence of competition. These sectors are not yet open for private sector and the government continues as a sole investor and provider of both services.

Cluster development

Establishment of industrial zones in different parts of the country has been considered as one strategic direction in the promotion of industrial development in the country. With this objective the government has taken a number of measures including furnishing the industrial estates with necessary infrastructures (e.g. roads, power, telecommunication, and water), organizing a responsible organ entrusted with the task of promoting and regulating this activity. In this regard the export sectors receive special attention and are directly supported by the Federal authorities. For example, the Ministry of Trade and Industry (MOTI) had allocated special industrial zones for export sectors including garment and footwear industries in the vicinity of the capital city Addis Ababa. Regional authorities have similarly allocated special zones for industrial development.

Industrial zones are also perceived as one mechanism to attract foreign direct investment and the government has aggressively pursued this scheme. Recently, it allocated industrial zones to foreign investors on country cluster basis who promise to mobilize a large number of investors and engage in diversified but mainly export sectors. This scheme started to attract the interest of foreign investors; so far, exclusive industrial estates have been granted to Chinese, Indian, Turkish and Egyptian investors. The performance of these industrial estates initiative so far falls short of expectations. For example, China was the first country to be granted an industrial zone at Dukem, 37 km east of the capital of Addis Ababa known as 'Eastern Industry Zone' in 2007. Up to 80 Chinese companies involved in textiles, leather, and manufacturing of construction equipments were expected to take part in the industrial zone with envisaged capital of about 5 billion Yuan financed by the China-Africa Development Fund. Yet, the number of manufacturing companies established in the industrial zone until the end of 2012 was no more than six and mostly engaged in construction-related production activities. The status of other industrial zones is at an early stage and their performance yet to be seen.

Despite extensive promotional activities to attract FDI, the presence of foreign-owned companies in Ethiopian manufacturing is generally limited. According to the CSA 2009/10 survey, foreign ownership share in terms of paid-up capital was only 7.6 per cent of the reported total paid up capital in the MLSM sector. A recent sample-based survey by the World Bank reveals that only 4 per cent of the sampled firms in Ethiopia are private and foreign-owned. This is a much lower proportion in comparison with the SSA average (14.7 per cent) and worldwide sample of private enterprises (9.7 per cent) (Geiger and Goh 2012).

4.3 Sectoral policies

The 2003 IDS declared priority sectors for government direct support which include textile and garment; meat, leather and leather products; other agro-processing industries (e.g. sugar and sugar related industries), construction industry and the micro and small enterprises (MSEs). The selection of the textile, leather, and other agro-industries is justified on the ground that they are labour-intensive and provide strong linkage with the agricultural sector

and comparative advantage to compete in the export market. The construction sector is assumed to be the basis for the development of other sectors and the MSEs expected to foster the emergence of entrepreneurs and a potential to create large employment opportunities.

The list of priority sectors has been updated through time. For example, the flower industry and some import-substituting industries (such as metal and engineering, chemicals and pharmaceuticals) were sequentially added. The targets and accompanying government supports were explicitly stated in the country five-year development plans, the so-called PASDEP (2005/06-2009/10).¹⁷ The overall target for the industrial sector during the period of the PASDEP was to register an average annual growth rate of 11.5 per cent and thereby to increase the sector's share in overall GDP from 13.6 per cent in 2004/05 to 16.5 per cent by the end of 2009/10 (MoFED 2006). Targets were also set at sub-sector level with a particular focus on the selected export industries (see Box 1). The National Export Development Committee, which is chaired by the prime minister sets export and productivity targets.¹⁸

In order to meet these targets the government provided extensive support programmes that include economic incentives, capacity building, cluster development and direct public investment. These have largely been directed at the exporting firms and industries.

Economic incentives

The economic incentives include generous credit schemes, ¹⁹ 100 per cent exemption from the payment of duties on import of all investment capital goods and raw materials necessary for the production of export goods, and tax holidays on profit for five years. Credit was made available for investors in the selected sectors through the Development Bank of Ethiopia (DBE). The government also uses the opportunity that land is under government ownership to attract investors and make preferential treatment to selected sectors such as the export-oriented ones.

¹⁷ The ongoing GTP (2010/11-2014/15) also carries even more ambitious targets but the focus of the discussion here is on the PASDEP.

¹⁸ The Export Steering Committee was established in the early 2000s based on the Korean model even prior to the designing of the IDS in 2003. This was also chaired by the prime minister and convened monthly meetings to monitor developments and solve problems of the export sector.

¹⁹ For example (i) longer grace period (three years), (ii) a longer repayment term (up to 15 years), (iii) almost fixed and lower interest rate (7.5 per cent) than the market interest rate (9 per cent) at the time, (iv) export credit guarantee loans up to the equivalent to export earnings and up to 70 to 30 debt-equity ratio with no collateral requirement but their project.

Box 1: Ethiopia export targets PASDEP period (2004/05-2009/10)

Textile and garment

By the end of the PASDEP period, it is expected that export earnings from textile and garment industries will reach US\$500 million. In this regard, continuous investment support and expansion activities will be carried out by the government for more than 191 investors with investment worth US\$1.6 billion in the textile and garment industry.

Leather industry

In this plan period it is envisaged to improve the value addition of leather export focusing on the promotion of shoes and other leather products. By the end of the plan period (2009/10), it was expected to increase the export earnings from shoes to US\$178 million and from other leather products to US\$49 million. To this end, 74 (50 for shoes and 24 for shoe upper) factories will be established and existing ones will be capacitated as well. Besides, it was planned to upgrade the capacity of tanneries to produce finished leather products.

Sugar industry

The PASDEP aimed at the completion of previously developed sugar development master plan by the end of the plan period which includes the production of 1.2 million tons of sugar (i.e. 5 times the current level of production) through the expansion of three existing factories and the establishment of an additional one with higher capacity. Through this it was envisaged to create employment for more than 80,000 people and increase the export share of the country in the international sugar market by 2.5 per cent.

Flower industry

It was planned to increase the flower-covered hectares of land from about 322 in 2004/05 to 2000 by the end of the plan period and generate employment opportunities for more than 70,000 people. The plan also envisaged a gradual transfer of state-owned farms; of which 3,000 hectares of land will be cultivated to produce vegetables and fruits for export purposes.

Cement industry

By end of the plan period the total cement production was expected to reach 8.1 million tons through improving capacity utilization of the existing ones and establishment of new factories with a capacity of 6.5 million tons.

Source: MoFED (2006).

Capacity building

In addition to the efforts to boost the general human capital of the country the government has been involved in capacity building of the private sector particularly in the selected priority industries. In 2005, it launched an ambitious reform programme known as Engineering Capacity Building Program (ECBP) with the aim of further enhancing the

competitiveness of the private sector through improving the skill of the work-force. The ECBP is made up of four reform areas: university reform, technical and vocational education and training (TVET) reform, quality assurance infrastructure reform, and private sector development. In line with the IDS, the programme identified six key sectors manufacturing of textiles, leather, agro-processing, metal, and chemicals and construction, (ECBP Five Year Strategic Plan 2005).

Direct investment

Although the government increasingly privatized several of the SOEs recently, it has engaged itself in direct investment in areas where it believed are in short supply of the private sector. This has been particularly intensified in the GTP period, which led to the establishment of two state corporations (Metal and Engineering Corporation and Sugar Corporation) consisting each a number of existing and newly established SOEs. The government is also involved in several other new or/and expansionary investment projects (e.g. textile, garment accessories, rubber tree production, coal phosphate fertilizer, cement factory, ceramics, pulp and paper) which are currently under different implementation phases.

4.4 The direct support in practice: industry case studies

The textile and leather industries are the two most preferred export industries that received enduring attention of the Ethiopian policy makers. The flower industry, which emerged spontaneously but then supported by the government to become successful is another celebrated export industry. This section gives more insights on the policy practice and performance of the industrial policy to date focusing on these three important export sectors. The textile and leather industries will be discussed together due to similarity of the policy instruments applied to promote them.

The textile and leather sectors

The government set ambitious targets for the textile and leather sectors each to generate US\$500 million by the end of the five-year PASDEP plan period, i.e. 2009/10. In the textile sector, it was envisaged of massive investment from the private sector worth of US\$1.6 billion. It was also planned to create self-sufficiency in fabrics and accessories availability through new investment and expanding the existing ones. With the consideration that the domestic private sector might be constrained by capacity, the government also planned to invest directly in the textile sector including through joint venture with foreign investors. The main direction of the leather industry plan was to change the mix of exports toward processed and finished goods. To reach this goal it was planned to upgrade the capacity of tanneries and the finished products to produce finished leather products.

In order to meet these targets the government made sector-specific capacity building efforts in addition to the general support programmes given to all exporters and indicated in the previous section. Two sector-specific institutions; namely, the Textile Industry Development Institute (TIDI) and the Leather Industry Development Institute (LIDI) were set up to support, co-ordinate, and guide the private sector. These institutions have been jointly implementing a capacity building programmes aimed at enhancing the competitiveness of the industries in the international market. Sector special training centres such as the Ethiopian Leather and Leather Products Technology Institute (ELLPTI) and Textile and Apparel Institute (TAI) were also established under the guidance of these institutions.

To improve the international competitiveness of these industries the government introduced various capacity building initiatives that include benchmarking, institutional twining, marketing search, and kaizen. In what follows we assess the implementation of these programmes with a focus on the textile and leather industries.

Benchmarking: In 2009, the government launched a programme called ‘*benchmarking*’ with the view to upgrade technology and raise the capacity of the prioritized sectors and thereby raise their competitiveness in the international arena. Under this programme selected textile and leather enterprises, both public and private-owned, were planned to receive a comprehensive direct support from internationally renowned firms sponsored by the government to alleviate their constraints in the areas of management, productivity, input supply networking, marketing of products, human resource development and product quality. Accordingly, about 17 textile firms (seven textile and ten garment enterprises) and 20 leather firms (11 leather products manufacturing factories and nine shoe factories) were selected. Following the selection the government conducts strict follow-up and monitoring of the implementation of this programme through the two responsible institutes (the TIDI and LIDI) and the National Export Promotion Council.

Twining programmes: The idea of the twining programme is to establish a long-term knowledge and experience sharing scheme between the TIDI and LIDI, on the one hand, and other international and domestic selected renowned similar institutes, on the other hand, so that the former will be able to raise their capacity to provide better services. In the leather sub-sector, a network is established between the LIDI, Engineering Capacity Building, and selected foreign counterpart institutes (e.g. the Indian Leather and Leather Products Technology Institute). In the textile sector, a similar networking programme between the TIDI and other best performing international institutes is in the making.

Marketing and other support activities: The challenge in the export market for the manufacturing industry is securing reliable and attractive international markets. Notwithstanding the quality, delivery time and other related problems, the export marketing problems are mainly: first, marketing products internationally is an expensive and out-of-reach for many of the local industries. Second, whenever markets are available, the scale of operation of the local firms is so limited that they cannot individually meet the order-size of big companies. Realizing this constraint, the Ethiopian Embassies are endeavouring to promote the products and establish market links internationally; while at the same time the MoTI is co-ordinating and facilitating domestic firms to establish market networks for products and inputs among themselves through sub-contracting and other arrangements. So far, some domestic firms are linked with international potential buyers such as ARA of Germany, ADELCHI of Italy, ANNABELA of Italy, and Brown Shoe of America.

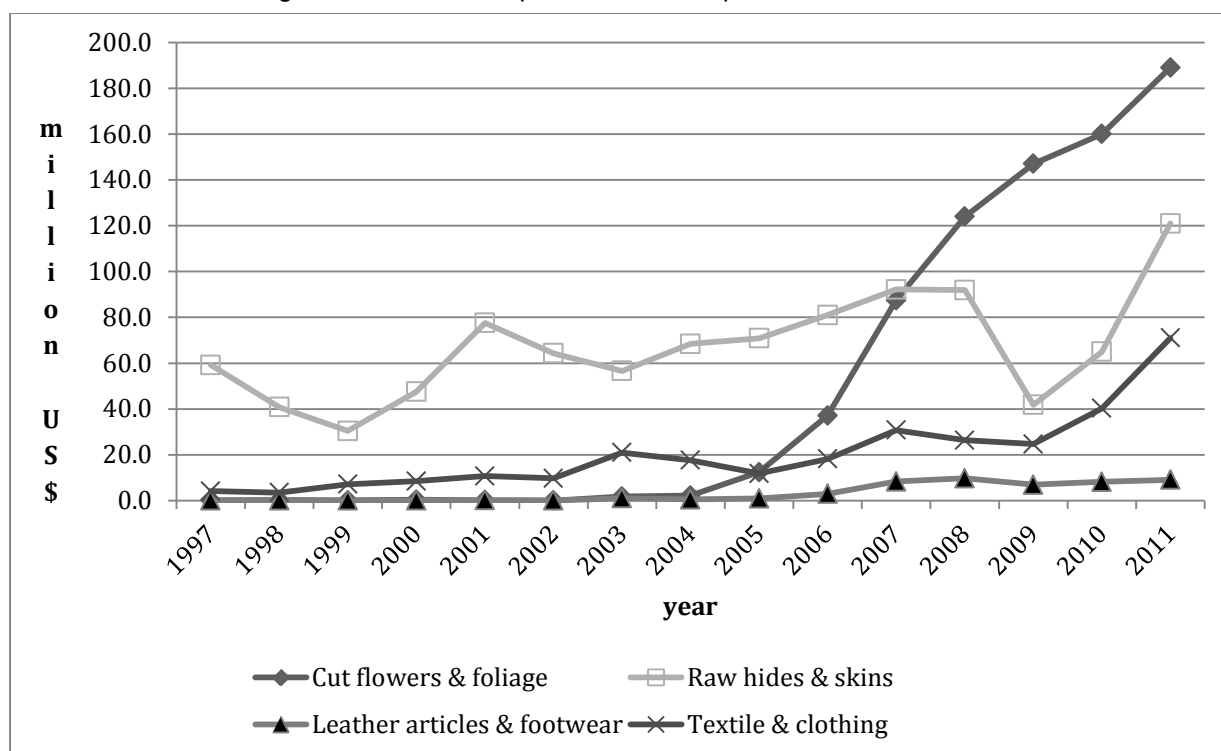
Kaizen: The *Kaizen* scheme is a Japanese management philosophy which aims at bringing incremental and continuous changes. It is a cross-sector initiative that was introduced in 2009 in Ethiopia as a two-year pilot project in selected 30 companies located in Addis Ababa and its environs. Encouraged by the results achieved in the selected companies in terms of increased productivity and improved quality, the government is envisaging a scale-up of the implementation to other companies. To this effect a *Kaizen* Training Institute was established by a regulation in October 2011.

The textile and leather sectors export performance in the PASDEP period was generally unsatisfactory particularly with regard to the targets set. Figure 5 presents the pattern of export of selected industries (1997-2011). The government envisaged US\$500 million from

the export of textile and garment industries, but only about 8 per cent of this target were actually achieved by the end of the PASDEP period. Similarly, the plan for the leather industry was to generate US\$500 million of which US\$221 million to come from shoe and other leather products sub-sectors. Again only US\$65 million hides and skins and US\$8.3 million leather articles and footwear were exported by the end of the plan period, which is respectively 23 per cent and 3.7 per cent of the target.²⁰

Despite the underperformance with regard to the targets set the export growth, particularly the textile and garment sector, is not gloomy. In fact, the US\$40.3 million export value of textile and garment by the end of the PASDEP period (2010) was four-fold in comparison to the base year (2004/05). The textile and clothing exports have further soared and reached US\$71 million the next year (i.e. 2011, the first year of the GTP plan period), which amounts to a 55 per cent growth in only one year.

Figure 5: Pattern of exports of selected products, 1997-2011



Source: Ethiopian Revenue and Customs Authority (n.y.)

Ethiopia has arguably the potential to be internationally competitive in the textile and leather products given its abundant low-cost labour and natural resource endowment on the key inputs such as large population of cattle and land for cotton production. A recent study on the light manufacturing in Ethiopia (Dinh et al. 2012) which is sponsored by the Agence Française de Développement and the World Bank highlights the major obstacles in the course of realization of the country's potential in the textile and leather sectors. According to this study the binding constraint in apparel export is poor trade logistics, which nearly eliminate the country's wage advantage and prevents it from entering the high-value time-sensitive

²⁰ Exports of hides and skins declined even in absolute value particularly between 2008 and 2010, which might be caused by the restrictions imposed on export of unprocessed leather. Unfortunately we cannot identify from the figures the relative share of processed and unprocessed hides and skins export.

segments of the market. This is compounded by the absence of competitive input industries (such as textiles), forcing firms to import inputs at high costs and with long, unpredictable delays.

Dinh et al. (2012) also show that the most binding constraint in the leather export is the shortage of quality processed leather. According to them, the competitiveness penalty due to poor trade logistics is less serious in the leather goods than in apparel. This is because Ethiopia's wage cost advantage exceeds the trade logistics cost penalty and the sub-sector is less time-sensitive than the apparel sector. The report further argues that the poor trade logistics in Ethiopia can be attributed to two factors: high handling and financing costs and physical distance from production centres to Djibouti port. On the other hand the lack of quality inputs in both the apparel and leather sectors is caused by weak supply chain in each industry, for example, poor control of cattle disease and lack of quality processing of raw hides and skins in the leather sector, and poor spinning and ginning domestic capacity in the textile sector.

The flower industry

In contrast to the textile and the leather industries, the Ethiopian cut-flower industry represents extraordinarily successful export diversification. In 2000 there were only three firms exporting no more than half a million US\$. By 2008, the sector consisted of 81 farms that created above 50,000 direct employment and generated above 100 million US\$ foreign exchange. In about one decade the country became the fifth largest non-EU exporter to the EU cut-flower market and the 2 second largest exporter from Africa, surpassing all early exporters from the continent except Kenya. The sector continues to grow even further whereby the foreign exchange earnings from this sector reached about US\$189 million in 2011 (see Figure 5). How does this happen?

The dynamics of the state-business interaction in the flower industry is different from the other priority sectors, for example the textile and leather industry. The flower industry was not even in the list of priority sectors at the inception of the industrial policy document.²¹ The government was only lately aware about the export potential of this sector through the experimentation of the private entrepreneurs and their effort to acquire government support. In the mid-1990s two domestic private entrepreneurs started the experimentation by producing summer flowers and exporting them to the EU market. In 1999 another firm (foreign-owned) started rose production using modern infrastructure (a steel structure green house). A couple of others followed the next two years. These early entrants faced a number of difficulties particularly related to logistics, land, and finance. In 2002, they formed an association and started to seek government support. The government responded quickly and positively. At the end 2002, the Prime Minister's Office (PMO) requested the Ministry of Trade and Industry (MoTI) to work out a five-year plan of action for the sector, outlining the sector's constraints and possible solutions. Based on the MoTI report, targets were set to put 1,000 hectares under flower production by the end of five years.²²

To meet these targets, the government came in with a multi-faceted support starting from 2003, particularly focusing on: access to land, access to long-term credit, infrastructure, and air transport co-ordination. With the government decision to engage in the sector promotion

²¹ See Gebreeyesus and Iizuka (2012) for further detail on the emergence of the floriculture industry in Ethiopia. The discussion that follows heavily relies on that.

²² These targets were updated in the PASDEP five-year plan (see Box 1).

land held by the government was made increasingly available for flower farms within the vicinity of the airport in Addis Ababa, leading to the creation of flower enterprise clusters. The land price was made very cheap with longer lease and payment period. A survey carried out by the present author (see, Gebreeyesus and Iizuka 2012) in 2008 shows that the majority (83 per cent) of the farms source of land was government lease. The government also made available loan for investors in the floriculture sector through the DBE, which carries very generous terms. Moreover, the government played an important role in resolving the co-ordination problem in the air transport particularly at the initial stage by initiating collaboration between exporters and Ethiopian Airlines.

The government also provided other supports including advocacy and capacity building to the flower industry. To improve the support needed and better co-ordinate the development of the sector the Horticulture Development team that was formed in 2002 under MoTI as a main window of interaction with the private sector was upgraded to agency level, namely Ethiopian Horticulture Development Agency (EHAD) in 2008. To solve the bottleneck in skilled manpower the government with the support of the Dutch government started to consolidate the higher education for specialists in horticulture. One of the public universities (Jimma University) was upgraded and started to offer special diploma (BSc and MSc) in floriculture profession. Other training centres aiming at producing middle level skills for the horticulture sector were also established.

The industry association, the Ethiopia Horticulture Producers and Exporters Association (EHPEA), was critical towards the development of the sector. The association was highly successful in making the government aware of the sectors' opportunity and working in partnership. It has also played a vital role in collective market search to diversify export destinations, developing informal networks through different forums and international trade fairs, initiating industry standards, and developing capacity of members through training. The most important lesson from this case is that the significance of successful partnership between the state and business in sector building. The private entrepreneurs 'discover' that flowers can be profitably produced and exported in the country. They formed an association to seek government support, the government was then open to realize the potential of the sector and not only added the flower sector onto its high priority list but also set itself in *strategic co-ordination* of the development of the sector.

5 Conclusions: remaining and emerging challenges

The first decade of the EPRDF regime (1991-99) was marked by a series of reforms under the SAP to reverse the command economic system by the way of fostering competition, opening the economy and promoting the private sector. In 2002/03, after a decade in power, the government formulated a full-fledged industrial development strategy which has been concretized into action by subsequent development plans and various sub-sector strategies. The government made notable efforts to implement it. Although it is too early to make a full evaluation the industry sector performance so far it looks mixed. Following the implementation of the industrial policy and other development plans, the Ethiopian economy grew by about 10.6 per cent annual average between 2003/04 and 2010/11. This is about double the average growth rate (5.2 per cent) recorded for SSA over the same period. All the major sectors including industry and its major subcomponents similarly grew by 10 per cent or more per annum. In this period the country export earnings have more than doubled.

Despite impressive growth the industry contribution to the economy remained stagnant and hardly exceeded 14 per cent over the last decade, by far lower than the SSA average. The manufacturing contribution to the GDP and merchandise export in Ethiopia is also below 6 per cent and 10 per cent, respectively, which is again among the lowest in the world. Although the number of MLSM establishments almost doubled in the last decade, the rising industries are the domestic-oriented and not the export sectors. Despite extensive support the export performance of manufacturing such as leather and textile products remained far below the targets set. One of the core principles of the ADLI and the industrial strategy has been to strengthen the agriculture and industry linkage. The emphasis on export and labour-intensive sectors was meant to lift up the whole economy through strengthening this linkage. But this study shows that the domestic linkage is yet weak resulting in higher and increasing import dependence.

Recent studies highlighted that poor trade logistics and the lack of quality inputs in the domestic market seem to be among the major constraints reducing the global competitiveness of the Ethiopian main manufacturing exports such as textile and leather. Nevertheless, these problems were not unknown. The government in fact, has taken different measures to address them. For example, it implemented wide range of reforms to modernize the civil service and particularly the customs administration. It invested hugely in infrastructure acknowledging the importance of improving its infrastructure for a landlocked country to reduce the cost of business. The lack of quality of processed hides and skins was also long recognized and an upgrading scheme to modernize and improve the tanning industry was introduced since the mid-2000s. The government has also been involved in direct investment (including joint venture) to create self-sufficiency in fabrics and accessories through new and expansionary investment in the textile sector. The fact that the poor trade logistics and lack of quality inputs continues to drag the export sectors despite such efforts raises the issue of the extent and effectiveness of these interventions. A regular review of the policies and instruments need to be instituted with the aim of identifying emerging bottlenecks. And more importantly, policies need to be framed with a view of addressing constraints along the whole value chain and also horizontal linkages.

In contrast to the textile and leather sectors, the Ethiopian flower sector has grown rapidly and become the country's most successful export sector in recent history. Why has the flower industry that was not even in the original priority list of the government emerged to be successful but not the leather and textile industries that received the most attention long before? This leads to the identification of potential products, an issue as prominent as the industrial policy itself. There are alternative views in this regard that include; (i) no need for the officials to select products beforehand but create a general support mechanism in which an eligible pioneer would bid and compete for it; (ii) the government should make an in-depth study, select priority sectors, and provide support for potential entrants; and (iii) the government might still have a priority list but should also be flexible enough to pick winners in the self-discovered sectors (GRIPS 2010).

The Ethiopian case study suggests that although governments might have their own list of priority sectors a priori, they should allow flexibility and revise their choices through time. To do so one needs to introduce mechanisms to elicit valuable information from the private sector on the potential industries through continuous consultations. This is consistent with the Haussmann and Rodrik (2003) view that there is large element of uncertainty as to what a country will be good at producing, once we move beyond broad aggregates (e.g. labour-intensive or natural resource-based) that are predicted by factor endowment models.

Successful promotion of new export activity is, therefore, a ‘self-discovery’ and an ongoing learning process which involves not only entrepreneurial but also policy experimentations. The Ethiopian authorities need to give sufficient attention to replicate the flower experience in other products through continuous engagement with the private sector in identifying and supporting the would be ‘*champion products*’.

Last, yet a number of other issues arise regarding the effectiveness of the support programmes and the implementation of industrial policy. How much rent and how long should the private sector in the selected industries be given to bear fruits. What form of relationship should be instituted between the state and business? How to create an environment that maximizes the social benefits and limits rent-seeking? In this regard, the Ethiopian industrial policy made a distinction between ‘developmental’ and ‘rent-seeking’ private sector and vows to support the former and curtail the latter. It provides generous incentives and support programmes to build the private sector capacity and has also created public-private consultation forums (carrots). At times (particularly recently) it has introduced a number of measures (sticks) alleging to ‘discipline’ the ‘rouge’ private sector, which have resulted in increasing tension and policy uncertainties around the private sector. There are critics that these instruments (carrot and stick) are not transparent and that policy makers tend to ‘patronize’ the private sector instead of encouraging competition and innovation. There is also emerging concern that the public investment expansion is increasingly dwarfing the private sector, for example in relation to credit and foreign exchange availability. A vibrant private sector is critical for the effectiveness of industrial policy, thus, the government needs to address these and other emerging concerns.

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