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A natural experiment of industrial policy

Floriculture and the metal and engineering industries in Ethiopia

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Abstract: Ethiopia represents an excellent case study of recent industrial policy experimentation in Africa. The country is well known for its successful promotion of the cut-flower industry through business-government co-ordination. What is less known is that at nearly the same time it was also using co-ordination to promote the metal and engineering industry with little success. This study provides comparative analysis of the policy process and outcomes of the interventions in these two industries. Examining why one intervention worked and the other failed in the same political context and institutional setting provides a natural experiment to draw valuable lessons.

Keywords: Industrial policy, state-business co-ordination, Ethiopia, Africa

JEL classification: O25, O55

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1 Introduction

Similar to the other developing regions at the time, the industrialization strategy of Africa in the 1960s and 1970s was characterized by the import-substitution and widespread public ownership. Amid the economic stagnation in the mid-1980s, many Africa countries adopted the IMF-World Bank sponsored Structural Adjustment Programmes (SAPs) and moved from strong state intervention to a more or less market-oriented approach. Despite these reforms, the industrial sector in the continent remained in jeopardy and many countries have been experiencing de-industrialization. Page (2013) shows that Africa's share of manufacturing in gross domestic product (GDP) is less than one half of the average for all developing countries and declining in contrast with developing countries as a whole. It has, thus, become clear that neither the early policies of protection nor the market-oriented reforms helped Africa industrialize.

Industrial policy is back on the development agenda (e.g. Hausmann and Rodrik 2003, 2006; Khan and Blankenburg 2009; Cimoli et al. 2010; Szirmai et al. 2013) and several countries in Africa and the rest of the developing world have already started to re-introduce industrial policy. African governments have also collectively taken initiatives to promote industrialization in Africa under the theme 'Industrialization of Africa' at their January 2008 summit (UNECA and AU 2013).

Learning from past experiences is an inevitable process of policy-making. And yet the focus of learning has been on the successful industrialization of East Asian countries. Several developing countries tend to emulate the Asian model to the extent of imitating institutional settings without consideration of the local conditions. Scholars (for example, Hausmann and Rodrik 2006; Khan 2008; Hobday 2013) have warned against this arguing that beneath the similarities there were considerable varieties across Asia supported by innovation in policy, institutions, and technology. They had taken different routes and used different instruments suggesting the importance of the compatibility of the institutional compulsions that industrial policy strategies require to be successful with the organization and structure of political power in that society.

This does not amount to an argument against learning from each other's successes and mistakes but an argument for starting with one's own internal and external circumstances (Schmitz et al. 2013). Hausmann and Rodrik (2006) also argue 'An open-minded, experimental approach, together with a penchant for evaluation to ascertain what is working and what is not, is more likely to produce structural transformation than an approach that relies on first principles or best-practice blueprints imported from elsewhere'. Industrial policy-making in Africa needs to take account of the specific character of the continent. In this regard, the continent should critically evaluate its own experience and learn from its success and failure.

This paper aims to contribute toward this by providing evidence of success and failure of industry cases from Ethiopia. The country represents an excellent case study as it is among the leading countries in Africa of the recent wave of re-introducing industrial policy. The focus of this study is on two sectors, floriculture and metal and engineering, both of which among the priority sectors for promotion by the government but performed differently despite similar policy environment. Understanding why one intervention worked and the other failed in the same political context provides valuable lessons.

The main critic against industrial policy has been the inability of state bureaucrats to pick winners and the high probability that they promote rent-seekers instead (for example, Krueger 1974; Pack and Saggi 2006). As a result, the state-business relation and particularly the rent management has taken centre stage in industrial policy debate (for example, Hausmann and

Rodrik 2003; 2006; Khan 2008; Khan and Blankenburg 2009; Schmitz et al. 2013). Schmitz et al. (2013) defines rent management as government intervention for raising (lowering) profitability in selected sectors and thus making private investment in these selected sectors more (less) attractive. They argue that success of industrial policy depends on how we deal with the following four categories of risks of rent management.

- (i) political capture by private investors and allied policy makers;
- (ii) choice of wrong instruments;
- (iii) targeting the wrong sector/technologies; and
- (iv) doing too little.

This paper adopts these critical success factors for rent management as analytical framework to understand the success or failure of industrial policy in the two sectors under consideration. Below are some more specific questions we would like to address in our quest for lessons from the rent management practice in the two sectors in Ethiopia.

- How were the sectors selected and what are the instruments used by the government to create incentives (rents) in each sectors?
- How are results defined and monitored and what are the sanctions instituted?
- What are the institutional arrangements and particularly how does the government manage the tension between co-ordination and capture?
- How is the private sector organized in its dealing with the government and each other?
- How did these sectors perform and what are the key drivers of success or failure?

Many of these questions are about institutional linkages and co-ordination, thus, cannot be answered quantitatively. The analysis is, therefore, mainly qualitative and descriptive. A number of available databases (for example, Central Statistics Agency (CSA), Ethiopian Revenue and Customs Authority (ERCA), and surveys conducted by Ethiopian Development Research Institute, EDRI, on floriculture and metal industries) have been used to highlight each sector's structure and relative performance. Moreover, secondary sources (published and unpublished documents from academia and policy circles) and additional interviews with key players in each sector (associations and government agencies) have also been used in the analysis.

The rest of the paper is organized as follows. The next section highlights the current debate concerning the implantation of industrial policy. Section 3 provides a general background of industrial policy in Ethiopia. Sections 4 and 5 respectively discuss the implementation and performance of industrial policy in the floriculture and metal and engineering industries. Section 6 tries to draw lessons from the two cases.

2 Principles of successful industrial policy: review of the literature

Customarily, industrial policy was referred to as the protection and direct/indirect subsidy of domestic manufacturing sector. In this paper we adopt the broader definition that refers to the policies that stimulate specific economic activities that include industry, non-traditional agriculture and services and promote structural changes (Pack and Saggi 2006; Rodrik 2007).

There seems little dispute on the theoretical arguments justifying industrial policy. The objection towards industrial policy often revolves around implementation and management. For example, the rent-seeking literature (for example, Krueger 1974; Tullock 2005; Pack and Saggi 2006)

provides at least two main reasons as to why industrial policy is doomed to fail. The first is related to the fact that governments have no sufficient information to make the right choice, i.e. to pick the winners. The second is that industrial policy is an invitation to corruption and rent-seeking, referred to as political capture. According to them chasing the investment incentives becomes the main entrepreneurial activity rather than competing by making better products or adopting better processes. Groups of entrepreneurs with their allied political figures may seek that their interests are prioritized over others in the rent allocation process. They, therefore, argue that rents should be avoided or minimized.

Khan (2008), Khan and Blankenburg (2009), on the other hand, emphasize the advantage of looking at industrial policy through the lens of rent management. They argue that catching up with advanced countries requires rapid and sustained productivity growth which in turn depends on the creation (or learning) of new technologies. Building up technological capabilities can create a very high return in the future but the private sector will not play a big role particularly at the early stage because of the 'risk' involved. Governments should, therefore, create rents to attract investment in the selected sectors through different instruments. According to them, the creation of rents for innovation and learning in a particular activity is crucial but we also require institutions that can manage these rents to ensure that they do not last for too long, and that non-performers do not succeed in retaining their rents. In other words some institutional systems are needed that can create both the incentives and the compulsions for rapid learning to take place, which they referred to as rent management. The challenge is then not to avoid rents but to manage them.

There are different perspectives on how to ensure good governance and avoid political capture in implementing industrial policy. One view is to create arms-length relationships between the government and private sector implying the need for autonomy of bureaucracy from the pressure and lobby group. The principal-agent theory where the government acted as 'principal' while the private sector as 'agent' provides theoretical framework for the arm's length relationship (Tollinson 1982). This view is criticized for its implicit assumption of omniscient government (i.e. the principal has already needed information), thus, limiting the importance of flow of information from below.

An alternative and widely held view is the concept of 'embedded autonomy', which highlights the need for dense links between government and the private sector. According to Evans (1995: 12) the government should be 'embedded in a concrete set of social ties that binds the state to society and provides institutionalized channels for the continual negotiation and re-negotiation of goals and policies'. Rodrik (2013) emphasizes on three key principles regarding the state business relation: embeddedness, discipline, and accountability. First, industrial policy cannot rely on an omniscient government but on mechanisms that reveal information from interaction with the private sector. Thus, the government needs to come closer to the private sector (embedded). Second, the relation with the private sector is an excellent source of information but also rent-seeking problems. Thus, the relations need a range of safeguards measures (discipline) such as, explicit targets and objectives, monitoring and evaluation, and support phase-outs. Third, it is also important to make the public-private relations transparent and accountable to the society at large.

The presence of strong private sector association is regarded as helpful for effective state-business relations. According to Schmitz et al. (2013) high organizational capacity of the private sector and broad-based membership of its association increases the likelihood of an alliance becoming effective and legitimate. Hausmann and Rodrik (2006) also argue that the trade associations might be a co-operative solution not only to the free-rider problem among private participants but also to improve the transparency and legitimacy of the relation between the

private and public sectors. According to them the association should be left free to organize by itself at the level of what it deems is necessary. Forcing groups to organize according to some predetermined criteria, e.g. by sector classification, may create groups that have few specific needs in common.

The rent management literature seems to implicitly assume that the potential sector is correctly identified and instruments are readily available. But the debate on how to choose potential sectors is far from settled. One dimension of this debate is whether the choice of the sectors should follow or defy existing comparative advantage (Lin and Chang 2009). In other words, whether to focus on new sectors that already enjoy international comparative advantage or sectors that are far from it. Another strand of the debate is whether the factor endowment model that predicts broad structure of comparative advantage (for example labour-intensive, natural resource-based products etc.) can give any practical guide to the choice of potential activities. Hausmann and Rodrik (2003) argue that there is a large element of uncertainty as to what a country will be good at producing, once we move beyond broad aggregates such as 'labour-intensive manufacturing' to specific products. Thus, industrial policy needs to focus on activities rather than broad sectors.

Hausmann and Rodrik (2006) argue that the new activities that become successful cannot be known with certainty *ex ante*. It requires entrepreneurial experimentation of the private sector and an 'on-going learning' process. According to them it is, therefore, important whenever possible for the government not to predetermine who it will deal with in terms of sectors or activities but making choices endogenous to an open process. However, this should not preclude setting a priority sector by the government *ex ante*. The most important issue is policy makers should be open to adjust their list to include new ones and/or exclude from an existing list upon information.

Similar arguments arise in relation to the required instruments and institutions for successful industrial policy (for example, Khan 2008). There are no bullet proof instruments and institutional configurations that can work in every circumstance. The choice of instruments is also a matter of experimentation and compatibility with the organization and structure of a political poser in that society. Choosing wrong sectors and instruments is an inevitable but the most important thing is to put in place a mechanism to learn from mistakes. Industrial policy should, therefore, be seen as experimental process of trial and error. And again, an effective state-business relation can help reduce the risk of uncertainties in the choice of sectors and instruments.

3 The evolution of industrial policy in Ethiopia: some background

The recent economic history of Ethiopia can be divided into three policy regimes. The first can be roughly described as a *laissez-fair* and 'hands off' regime covering the period prior to 1974, the second is a rigid closed economy regime during 1975 to 1991 and the third can be labeled as economic reforms regime (1991 onwards). The industrial policies adopted to stimulate industrialization in these successive regimes have also distinctive features, which are briefly reviewed below. Gebreeyesus (2013), on which this section is heavily dependent, gives extensive review of the history of Ethiopian industrial policy.

The 1950s were a notable period in the development of the Ethiopian manufacturing sector. It was the start of the government's conscious effort to promote industry in the country in three consecutive five-year plans and also a period at which several manufacturing enterprises were established largely due to flow of foreign direct investment. The driving philosophy of industrial

policy in this period was in favour of market and private sector but sought gaps whereby the government should play a role including direct ownership. This phase was characterized by an industrial policy designed to encourage large-scale import-substituting manufacturing enterprises. The implementation of the three successive five-year plans attracted foreign investors and gave boost to the manufacturing sector in Ethiopia (World Bank 1985).

The military regime that came to power in 1974 nationalized all medium and large scale manufacturing (MLSM) enterprises marking a radical transformation in policy from market-oriented toward socialist and central command economy. The nationalized enterprises were reorganized under state corporations and investment in the MLSM was reserved to the public sector. As a result, the MLSM sector was dominated by state-owned enterprises. In contrast, private sector industrial activities, which consisted mainly of micro and small enterprises (MSEs), were openly discouraged through restrictive policies. The military regime had no industrial policy per se until the mid-1980s. The Ten-Year Perspective Plan that was formulated in 1984 constitutes an indicative portfolio of projects and production targets at which public investment was considered as the main mechanism towards industrialization. The focus of the industrial development plan in this period was import-substituting and labour-intensive industries under command economic system. The overall performance of the manufacturing sector during this period was disappointing. Firms were seriously constrained by shortages of foreign exchange, raw material supply, working capital and the like. Most MLSM firms were forced to operate below their installed capacity and because of the poor quality of product they produce, they were unable to meet the local demand, let alone compete in the international market.

The EPRDF-led government adopted a SAP in 1992/93. The central command economic system was replaced by a market-oriented one. A number of reform measures were taken to reverse the previous socialist policies and promote competition that include privatization, trade opening, market deregulation, and revision of investment and labour laws. The stage was set for the re-entry of the private sector into the manufacturing sector. The favourable policy environment created by the economic reforms, coupled with macro-economic stability, revitalized the manufacturing sector and the economy at large.

An export promotion strategy was adopted in 1998 as a reaction to 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). A comprehensive industrial development strategy (IDS), that gave impetus to the export promotion, was then formulated in 2002/03. The IDS which is based on the government's broader development vision—Agricultural Development Led Industrialization (ADLI) states some key principles such as: (i) strengthening the linkage between industry and agriculture, (ii) export-oriented sectors as a leader of the industrialization process and (iii) due emphasis on labour-intensive industries.

The strategy also recognizes the private sector as an engine in the industrialization process and at the same time explicitly states the need for a strong state role not only as facilitator but also as a leader. It made a clear distinction between 'rent-seeking' and 'developmental' capitalists and the need to curtail the former and promote the latter. The strategy cited two important mechanisms in which the government could engage and promote the private sector. The first is to create conducive environment for investment through maintaining macroeconomic stability, building a well-functioning and regulated financial sector, improving infrastructure, providing skilled manpower, establishing and improving an efficient civil service. Second, the strategy declares priority sectors for government direct support. This include textile and garment; meat, leather and leather products; other agro-processing; construction industries, and the MSEs. The priority list has been adjusted through time. For example, the flower industry starting from the Plan of

Action for Sustainable Development and Eradication of Poverty (PASDEP) covering 2005/06-2009/10 and import-substituting industries such as metal and engineering and chemical industries with the launch of GTP I (for the period 2010/11-2014/15) were officially rendered as priority sectors. The targets and accompanying government supports were explicitly stated in each of the country five-year development plans.

Ethiopia has seen extraordinary economic growth in the last decade following the implementation of the successive five-year development plans and various sub-sector strategies. GDP grew by about 10.7 per cent (annual average) between 2003/04 and 2011/12, which is about double compared to Africa’s average growth rate of 5.4 per cent over the same period. Both industry and the manufacturing sector also grew at a similar pace over the same period. Despite robust economic growth over the past decade, Ethiopia fared little in terms of structural transformation. The manufacturing and industrial sector contribution to the economy remains stagnant at below 6 per cent and 14 per cent, respectively. Manufacturing share of merchandize exports accounts for only 9 per cent. These are among the lowest even by sub-saharan African (SSA) standards.

4 The Ethiopian flower industry

4.1 The emergence of the flower industry in Ethiopia at a glance

Ethiopia’s attempt to export summer flowers, produced under the state farms, to Europe in the early 1980s did not last long. The private sector-led flower industry began to emerge in the mid-1990s in the aftermath of the extensive reform programmes to transform the command economy to a market-oriented one. Table 1 gives the number of firms and the pattern of export values of the Ethiopian flower industry. The entry process at the early stage was slow and there were only five flower firms exporting no more than US\$5 million worth of cut-flowers until 2003. But things started to change drastically after 2003 with the beginning of active government support to the sector. The number of flower firms doubled in only one year (2003-04) and continued to grow rapidly since then. By 2008 the number of firms reached 81, estimated to generate employment for about 50,000 people out of which above 70 per cent are women. In this year the industry became one of the five top export commodities for the country with more than US\$133 million foreign exchange earnings.

Table 1: The entry process and export patterns of the Ethiopian flower industry

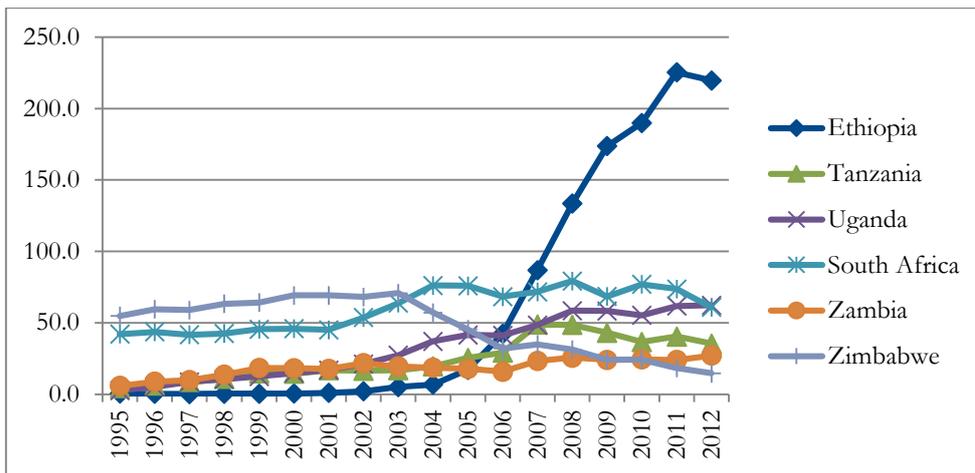
	Year					
	2000	2003	2004	2006	2008	2010
Ownership type of the farm						
Domestic	2	3	4	20	24	22
Fully foreign	1	2	4	18	28	43
Joint venture			2	15	15	12
Total number	3	5	10	53	67	77 ¹
Total exports (million US\$)	0.56	5.07	6.78	42.33	133.48	189.88

Source: The export figures are taken from UN-COM TRADE database while the number of firms from our own surveys (2008 and 2010).

¹ Note that the total number of firms at this time was about 81, which means four firms were missing from the 2010 survey.

Figure 1 provides the flower export pattern of the top exporting countries from Africa, excluding Kenya. We excluded Kenya, the first top exporter, merely for managing the scale of the graph. The figure shows that the extraordinary performance of the Ethiopian flower industry. Ethiopia entered the export industry lately but surpassed all the considered exporter countries within a short period (i.e. no more than a decade). With an export value of nearly a quarter billion US\$ in 2012 Ethiopia ranked the second largest floriculture products exporter from Africa, after Kenya.

Figure 1: Pattern of flower exports from top seven exporters in SSA



Source: For export value and volume UN-Comtrade database.

4.2 Some factors behind the success of flower industry in Ethiopia

How did the Ethiopian flower sector become visible and successful in such a short period of time? The following sub-sections try to examine the main factors behind this extraordinary performance with a focus on the policy management.

Private entrepreneurial experimentation that revealed Ethiopia's comparative advantage in floriculture

Ethiopia is endowed with the conditions required for a successful flower industry (i.e., flat land at high altitudes, a cool climate, low-cost labour, proximity to major markets, and an international airport near the production areas) especially suited to the production of high quality roses (Reinders 2008). The country also has advantage due to its geographical proximity to the world's largest flower market, the European Union (EU), which is the primary destination of flower exports from SSA. However, this latent comparative advantage was not realized until the mid-1990s when two domestic entrepreneurs namely (Meskel Flowers Plc. and Ethio-Flora) started production of flowers with the aim of exporting them directly to Europe. Both were located relatively in lowlands (at an altitude between 1,600 and 1,800 meters above sea level) and produce summer flowers. Meskel Flower had started later on producing roses but using rudimentary wooden greenhouse technology.

In 1999, Golden Rose Agrofarms Ltd (Golden Rose, hereafter), a foreign-owned UK based business started its production after thoroughly examining the performance of the two early entrants as part of its feasibility study. Unlike the early entrants, Golden Rose located its farm in a highland area (about 2,060 meters above sea level) to enable the production of high value roses, and introduced modern steel structure greenhouses. While the first two movers ceased

their flower production in the course of the time for different reasons, four other rose farms joined the industry between 2001 and 2003 following the success of Golden Rose.

The early entrants had faced various uncertainties and incurred substantial searching costs. Although the technology needed for the flower production was, by and large, matured and easily available, the choice of appropriate technology whereby the country exhibits substantial comparative advantage over the incumbents and potential competitors in the international market was one source of uncertainty. This was a matter of entrepreneurial experimentation and involved a costly learning process. For example, despite Ethiopia's comparative advantage lying in the production of large budded highland rose varieties the two early entrants started production in lowlands which is only suitable for small budded roses and summer flowers. It was Golden Rose that pioneered the production of highland roses in modern steel structure greenhouses in 1999. The early entrants had also encountered marketing problems. All had started exporting through the Dutch auction but later on at least two of them (Meskel Flower and Golden Rose) forced to change their route through direct sales in Germany as a result of low price and unexpected service charges at the Dutch auction. Shortage of skilled personnel was also another acute problem, whereby the firms opted for recruiting expatriates and initiating on the job training.

Lately aware but 'pro-active' government

Besides technology and marketing knowledge the early entrants had also other challenges such as transport, land and finance. Cut-flowers are a perishable product that needs to be exported by air. Sufficient and guaranteed cargo space and cold storage facilities at airports are, thus, critical. At the early stage, air cargo space was only available on passenger flights and there were no cold storage facilities. Not many air carriers were interested in this small market. In the absence of sufficient competition among cargo suppliers, the price of the air transport was very expensive. Moreover, private investors in the flower sector were able to obtain land only by leasing it from small farmers prior to 2003. This was a tedious process as it requires consolidation of several small holdings. Availability of credit was another problem as the flower industry is a highly capital and knowledge-intensive in comparison to other sub-sectors in agriculture. The start-up investment involves considerable fixed assets that include land development, infrastructure, greenhouses, irrigation systems, packing shed, cold storage, machinery and vehicles, and planting materials.

In order to seek support from the government the few existing entrepreneurs (only five) at the time organized themselves and formed an association called Ethiopian Horticulture Producers and Exporters Association (EHPEA).² The government was not aware of the potential of the flower industry in Ethiopia until the end of 2002 when it was approached by private entrepreneurs. Upon realization of the big opportunity the government decided to actively support the sector development not only as a facilitator but also assuming its co-ordination role. The Prime Minister Office requested the Ministry of Trade and Industry (MoTI) to prepare a five-year action plan for the sector development with the participation of representatives from the association.

Accordingly, targets were set up to put 1,000 hectares under flower production by the end of five years (2003-08), looking at Kenya's output and export earnings. By the end of 2002, land covered under greenhouse was no more than 30 hectares. To scale-up from this base, government came in with a multi-faceted support focusing on: access to land, access to long-term credit,

² The association now consists of about 85 members.

infrastructure and air transport co-ordination. Starting from 2003, land held by the government was made available at a very cheap price within the vicinity of the airport in Addis Ababa, leading to the creation of flower enterprise clusters. Long-term credit was also made available through the state bank (Development Bank of Ethiopia) on very generous terms that included very low interest rates (in fact negative real interest rates given the high level of inflation at the time) and low equity-debt ratio (30:70). Lending was undertaken against a project plan with no collateral requirements. The government has also played an important role to solve the transport problem by initiating close co-operation between the exporters and the state-owned Ethiopian Airlines. In an effort to support the booming flower industry Ethiopian Airlines purchased extra cargo planes as well as relocating its flight destinations.

FDI as a catalyst in the sector development

The government's announcement of its engagement with the flower industry sent a positive signal on the prospect of the flower industry. As a result the sector witnessed speedy flow of domestic and foreign investors leading to the industry take-off beginning 2004. Since then the foreign-owned firms (in the form of a joint venture or full ownership) started to dominate the flower industry (see Table 1), a significant number of them coming from neighbouring countries including Kenya, Uganda, and Zimbabwe. The Dutch, Israeli, and Indian, in order, constitute the majority of foreign-owned firms. The large flow of foreign investors had helped not only scaling up the industry but also in the diversification of activities into summer flowers and production of cuttings as well as other types of roses. For example, the existing six cuttings companies in Ethiopia which produce pot plants and cut flower cuttings are all owned by European breeding companies.

Managing the political capture and co-ordination

How did the government organize itself and manage the rents it provided to the private sector in the flower industry? What were the monitoring mechanisms of performance and sanctions instituted in case of failing to meet expectations? The remaining part of this section provides some highlights on this focusing on the state-business relation.

The relation between the government and the private sector was exemplary from the beginning. Meles Zenawi, the former Prime Minister, was personally involved in the promotion of the flower sector, holding regular meetings with investors to get up-to-date information and seeking immediate solutions to the business constraints faced. The Minister of MOTI was also personally involved making regular visits to the farms to get first-hand information. At this initial stage, MOTI was the line ministry responsible for co-ordinating the state-business relation in the floriculture development. The Horticulture Development team was formed within the MoTI around 2002 as a window of interaction with the private sector. In 2008 the team was upgraded to agency level known as Ethiopian Horticulture Development Agency (EHDA) and set under the Ministry of Agriculture and Rural Development. The agency was set up to act as a one-stop-shop for services required by investors including capacity building, investment support, and market promotion.

The EHPEA was the conduit for the successful collaboration between the private sector and the state in the sector building. The potential of the flower industry was revealed by the private sector lobbying process and not by individual firms but through association. The association was self-organized and focused on its activities. More importantly the association was not merely involved in extracting rents from the government but also active in mobilizing its members and other stakeholders to resolve the co-ordination problems. It acted as a developmental partner involved in a range of activities aiming to promote the sector. For example, in 2004 the

association established a subsidiary named Ethio Horti-Share Company, which handles both input supply and export handling and forwarding services. In 2006, responding to the mounting pressure for standards compliance the association in collaboration of other actors initiated the national scheme of Good Agricultural Practice (GAP) known as EHPEA Code of Practice for Sustainable Flower Production which is in alignment of international standards. To implement the GAP it provided a series of training programmes to its members toward certification.

The association has also developed a very strong connection with the international community which enabled to mobilize additional resources. It is also engaged in market diversification efforts through visits to potential market countries and invitation of potential buyers. It continues to organize international trade fairs in Addis Ababa on a two-year basis attracting hundreds of floriculture companies from abroad. These all give evidence that the emergence of the self-organized industry association was instrumental in managing the rents created to the sector.

The relationship between the government and the private sector was not only rosy. Some tensions have appeared which are worth stressing here to in the context of the rent management practice in the sector development. One such issue was the repatriation of foreign exchange of flower exports. As a reaction to the under reporting of export sales by many exporters the National Bank issued a directive in 2006 to monitor the export of flowers, foreign exchange repatriation and trading prices. According to this directive, the exporters are obliged to submit necessary documents on their transactions and repatriate fully the net amount of foreign exchange earned from export sales within 30 days of sales. But devising an acceptable estimation of prices fetched by all exporters was difficult. Initially, estimation was based on a number of stems but this was found to hurt the growers of short stems and small-budded flowers which earn lower prices than the long stem and large-budded flowers. Later on, this was changed to a weight based estimation, thus, each exporter was expected to repatriate US\$3.68 per kg of exports. This mechanism is used to monitor performance of each exporter although it might have created discomfort among some exporters.

The second tension arises in relation to bank loans. As shown above the government, through the Development Bank, was the main source of long-term investment loan for the sector. Due to mismanagement or misconduct, some firms were not able to profitably run their flower business and put the DBE under dilemma whether to foreclose or reschedule the loan. The financial crisis in 2008-09 has aggravated the problem of servicing debt of many exporters and led to an industry level request of debt rescheduling. According to officials at the EHDA, 39 out of the 42 investors who had borrowed from DBE tabled such a request. Based on the request of the National Export Promotion Committee a team comprised of staff members from different government agencies was established to evaluate each farm individually and produce recommendations with the aim of preventing foreclosure.³ Based on the recommendations of the team DBE implemented a number of measures including rescheduling of loan repayments, additional credit for some farms and even direct management intervention in the most heavily affected farms.

These measures have not only saved the sector from a collapse but also the bank (DBE) itself. According to Schaefer and Abebe (2014) recognizing its initial weakness and under pressure from the highest echelons of the political elite, the bank embarked on a series of internal reforms. It began strengthening its own research department and started working closely with overseas development banks and local stakeholders to build its capacity. Through time the bank

³ The study shows that the Ethiopian-owned farms were the most in financial distress.

developed a credit policy and a Project Rehabilitation and Loan Recovery Sub-Process specifically tailored to the cut flower industry.

Another emerging area of rent management concerns profit tax. Investors in this sector have been granted up to five year profit tax holiday. This privilege has, however, started to expire for most of the firms as the time passes. We have learned from the EHDA officials that some firms have already requested for an extension of the years of tax holiday on different grounds. This shows that tax have become an area of rent management. Profit tax is practically handled by the revenue authority. Yet we have no sufficient information whether these requests are genuine and on the response of the authorities.

Land provision has been one component of the incentive packages for investment in the flower sector. The government through the regional governments have made available thousands of hectares of land at a very cheap price primarily in the vicinity of Addis Ababa for interested investors. But not all investors have actually developed the land they acquired from the government. We learned that the government is in the mood to reclaim the land from investors that are not able to develop for an extended period of time following its repeated calls to the private sector to rectify that.

5 The basic metal and engineering industry

5.1 The five-year metal and engineering industry development plan and actions

The focus of the industry promotion of the incumbent government in Ethiopia has been the export sectors. However, beginning 2006 the authorities entertained the idea of adding some import-substituting sectors in to the priority list as a reaction to the growing import dependence of the country. Consequently, the five-year Growth and Transformation Plan (GTP) covering the period 2009/10 to 2014/15 identified the basic metal and engineering industry (hereafter, BMEI) as primary industries for import-substitution based industrial development. The BMEI was then declared to be included in the list of priority industries for promotion.⁴ In 2010, the BMEI sector strategy was designed with the objective and targets taken from the GTP five-year development plan.

The BMEI is often considered as a backbone of an economy. But similar to most under-developed countries the BMEI in Ethiopia is found at a very low stage of development. The BMEI sector strategy notes that the annual per capita steel consumption in Ethiopia is very low (12 kg) as compared even to the African average, which is 42.5 kg. Although the demand for steel products in Ethiopia has been on the rise, about 85 per cent of this demand is fulfilled by imports. The objective of the BMEI development strategy is not only to substitute the BMEI imports but also to strengthen other sectors including the export industries by developing local capacity of design and manufacturing and facilitating technology transfer. Accordingly, the following sector targets were set to be achieved by the end of the GTP period (2014/15) in contrast to the base period (2010/11).

- Increasing the sector's gross value of production from Birr 20 billion to Birr 101 billion⁵

⁴ The chemical industry was also similarly declared among the priority sectors for import-substitution based industrial development.

⁵ Note that the current exchange rate is about 20 Birr per USD.

- Increasing per capital consumption of steel from 12.1 kg to 34.75 kg
- Increasing capacity utilization of existing companies from 75 per cent to 95 per cent
- Increasing the share of domestic produced supply of spare parts and components for other major industries such as, leather (90 per cent), textile (35 per cent), sugar (85 per cent), cement (85 per cent), agro-processing (75 per cent), construction (95 per cent), and small and medium sized vehicles (85 per cent).

The government has taken various measures to implement the sector strategy and meet the targets. First, similar to the other priority sectors, the BMEI has been granted economic incentives such as provision of land at a reasonable price, generous credit schemes (for example, 70:30—credit/equity), free duty on imported investment capital goods and raw materials, and up to five years tax holidays on profits.

Second, the responsible government entity co-ordinating the sector development was upgraded to institute level. Accordingly, the Metal Industry Development Institute (MIDI) was established in 2010 under the Ministry of Industry by ministries regulation number 182/2010 (Council of Ministers Regulation 2010a) to lead the development of the sector.⁶ ‘The objective of the institute shall be to facilitate the development and transfer of metals and engineering industries technologies, and to enable the industries become competitive and beget rapid development’. This shows that MIDI has no regulator power but focuses on support services including preparing project profiles, promote investment, consult and enhance capacity building of the private sector.

MIDI has been actively engaged in the support of the sector development since its inception. It has produced a number of potential project profiles to attract domestic and foreign investment and provide continuous support to on-going projects. It also supported the private sector capacity development such as investment capability (e.g. project development and acquisition of capital) and monitoring performance including quality and productivity improvement through the introduction of *Kaizen*. Toward this it has created a database for 52 medium and large firms and eight on-going projects and allocated one engineer for 15 companies to provide support and monitor performance of the private sector.

The institute has also established close relation with the private sector through the industry association. It provides office for the association free of rent in its premises and also holds monthly meetings of the joint committee of the industry association and MIDI often identify the challenges and discuss on solutions. MIDI also facilitates dialogs between the private sector and the responsible government organs such as banks, revenue and customs authorities, regional administrations in an effort of smooth implementation of the incentive schemes provided to the sector.

Third, in addition to the efforts to strengthen the private sector the government has also sought state direct investment to play a catalytic role in the sector development. Accordingly, in 2010 the government re-organized 15 state-owned enterprises operating in the metal and engineering sector, most of which were part of the Defence Industry aimed to satisfy the military needs, and form a large corporation, namely the Metal and Engineering Corporation (METEC). The objective of the corporation is to help realize the GTP by accelerating technological transfer and capacity in the sector.

⁶ Prior to that MIDI has been known at different time under different names such as Engineering Design and Tool Enterprise, Basic Metals and Engineering Industry Agency, or Metal Oroduts Development Centre.

According to the corporation's establishment Regulation No. 183/201 (Council of Ministers Regulation 2010b), METEC is tasked among others to (i) design, manufacture, erect, and commission manufacturing industries (ii) engage in maintenance and overhauling manufacturing industries (iii) expand and enhance engineering and technological capabilities through different mechanisms (iv) undertake production, manufacturing, maintenance, overhauling and upgrading of weapons, equipment and parts useful to defence and security forces for combat and war operations (v) sell its products of weapons, equipment and parts to domestic and overseas buyers in conformity with the law; (vi) build technological capabilities of the country's defence force through identifying existing and potential needs based on research and development. This shows that the corporation is expected to produce not only civilian but also military purposes products.

5.2 The structure and performance of BMEI in Ethiopia

In this part we examine the structure and performance of the BMEI in relation to other industries and against the targets set in the five-year development plan. We start by presenting the current structure of the BMEI in Ethiopia based on recent survey report of the Central Statistics Agency (CSA) on medium and large manufacturing sector consisting firms with ten and above employees (M&L, hereafter). According to the survey report, in 2012/13 there were 243 M&L firms operating in the BMEI producing in sum about Birr 19.7 billion value of production. The BMEI is customarily classified into two broad categories the basic metal and the engineering sub-sectors. The engineering sub-sector is larger in size but dominated by the manufacture of fabricated metal producing hand tools, spare parts and cutleries, which are characterized by low technology activity. The manufacture of fabricated metal alone account respectively for 75 per cent and 53 per cent of total BMEI number of firms and gross value of production. The engineering industry also consists of about 11 vehicle assembly plants and 12 machinery and equipment manufacture plants, both of which are characterized by low value added activity.

The manufacture of basic metal industry in Ethiopia is small in size accounting for only 15.6 per cent and 18.8 per cent of the BMEI's total number of firms and production, respectively. It is concentrated in producing basic construction materials such as reinforced bars, hollow sections and corrugated sheets as well as billets. Moreover, this sub-sector is heavily dependent on imported raw materials and locally available scraps rather than domestic iron making.

Table 2: The structure of the Ethiopia's BMEI (2012/13)

	Number of firms	Share (%)	Gross production value (billion Birr)	Share (%)
Manufacture of basic iron and steel	38	15.6	3.70	18.8
Manufacture of fabricated metal products	182	74.9	10.37	52.6
Manufacture of machinery and equipment n.e.c.	12	4.9	0.18	0.9
Manufacture of motor vehicles, trailers and semi-trailers	11	4.5	5.46	27.7
Total BMEI	243	100	19.72	100

Source: CSA survey report (2012/13) but own calculations.

Table 3 reports the BMEI industry growth performance in comparison to the whole M&L manufacturing sector. In 2000 there were 85 firms operating in the BMEI that generated employment for 5,722 people. In 2012/13, the number of firms tripled and employment grew by about four times reaching respectively 243 and 23,169. This amounts to about 8.2 and 11.3 per cent annual average growth rate over the given period. Gross value of production and value

added (in current Birr) in this sector also grew respectively by about 14 and 15 times over this period. The average growth in the last few years following the GTP implantation is higher than the average growth in the previous years. This is indeed an impressive growth but caution should be taken on the growth rate of particularly production and value added given the high inflation rate in the country in recent years.

Despite such fast growth the MBEI share in the total M&L manufacturing sector remained small and stagnant, i.e. below 10 per cent, 7 per cent and 13 per cent respectively in terms of number of firms, employment, and value added. This is because other sectors have also grown similarly faster in the given period.

Table 3: The BMEI industry relative share in the manufacturing sector

	Number of firms	Engaged people	Gross value of production (billion Birr)	Value added (billion Birr)
BMEI				
1999/2000	85	5722	1.32	0.29
2003/04	110	6615	1.35	0.15
2007/08	135	8499	3.10	0.53
2012/13	243	23169	19.72	3.91
BMEI's share in whole M&L sector (%)				
1999/2000	10.8	6.0	16.3	12.6
2003/04	10.2	6.2	12.4	5.3
2007/08	7.0	6.4	13.5	8.9
2012/13	9.2	7.4	17.5	15.5
Average growth rate (%)				
BMEI				
2002/05	7.0	8.91	11.90	15.84
2006/09	9.3	7.45	15.47	18.45
2009/13	11.4	21.98	44.16	26.46
2002/13	8.2	11.3	21.12	19.26
Whole M&L				
2002/05	10.4	3.88	9.50	6.18
2006/09	15.0	7.66	21.23	23.55
2009/13	4.7	18.52	34.16	29.36
2002/13	8.8	8.6	19.59	18.34

Source: CSA survey (different years) but own calculations.

Next we assess the performance of the BMEI sector against the targets set under GTP. Table 4 gives performance of the sector against the targets for the first four years of GTP-period (2010/11 to 2013/14). The figures are taken from MIDI recent reports, which in turn are based on information from CSA for the domestic production and ERCA for imports. The domestic production covers only the production of M&L manufacturing firms with ten and above employment size. Based on the M&L sector statistics we can show that the domestic production of BMEI products more than doubled in the first three years of the GTP period (i.e. increased from about 6 billion Birr in the base year to 19.02 billion Birr in 2012/13). This achievement is, however, only 56 per cent when compared with the target set. Production has also increased significantly the following year (i.e. 2013/14) and yet achievement against the target remained below 60 per cent. The capacity utilization also shows very weak performance. Despite the targets to reach above 90 per cent, the BMEI average capacity utilization remained below 62 per cent of the installed capacity over the period under consideration.

Table 4: Performance of the BMEI against the target set under GTP

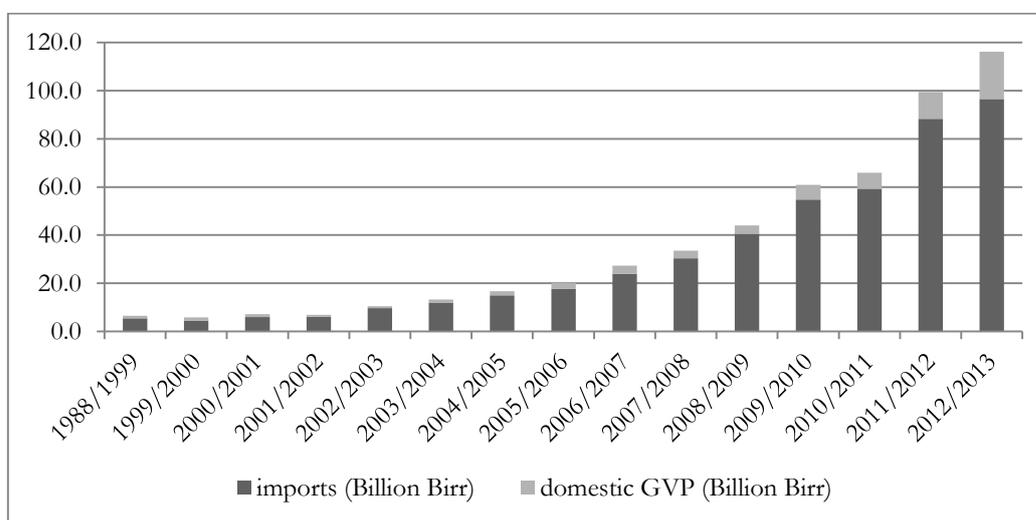
	Domestic production			Capacity utilization			Per capita consumption in kg		
	Target (billion Birr)	Actual (billion Birr)	Achievement against target (%)	Target (%)	Actual (%)	Achievement against target (%)	Target (%)	Actual (%)	Achievement against target (%)
2010/11	20	6.65	33.3	75	53	70	14.23	9.73	68.4
2011/12	26	12.0	46.2	80	61	76	17.78	14.6	82.1
2012/13	33.8	19.02	56.3	85	62	73	22.23	17.75	79.9
2013/14*	50.7	30.14	59.45	90	54	60	27.75	20.36	73.4
2014/15	101.4			95			34.75		

*Note: The performance of 2013/14 is based on assessment of MIDI in its communication with the private sector.

Source: MIDI (2014).

According to the MIDI report annual per capita metal consumption of the country has doubled in the first four years registering better performance (73.4 per cent) even against the target. The rise in demand for metal and engineering products is driven by the fast economic growth in the country and particularly booming construction sector. Unfortunately, this demand is still largely satisfied by the growing imports. Figure 2 gives the pattern of domestic production and imports of BMEI products in Ethiopia over the period 1988/99 to 2012/13. For example, in 2013 (the recent available data) the total demand for metal and engineering products was about 116.3 billion Birr, out of which 83 per cent were met by imports. The imports share in this sector shows no sign of decline in the last 15 years, suggesting failure in terms of imports substitution.

Figure 2: The pattern of domestic production and imports of BMEI products in Ethiopia

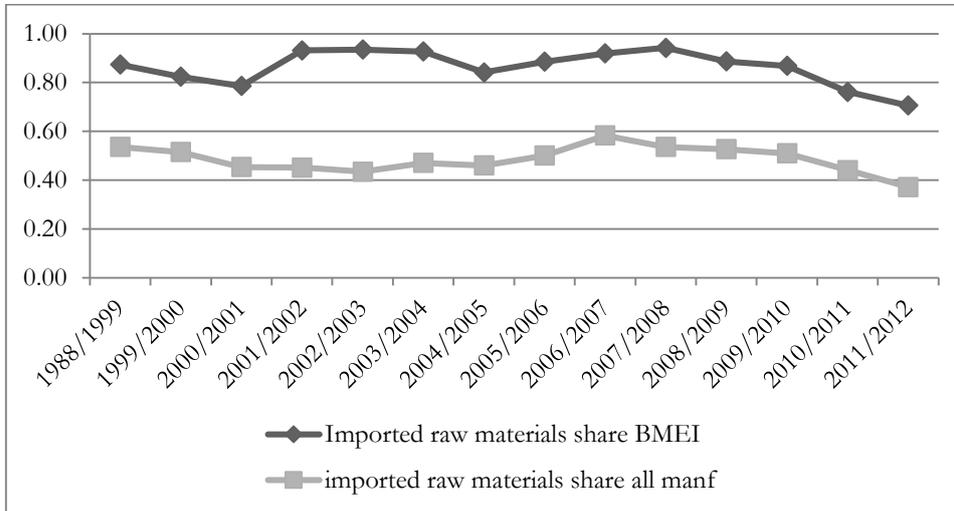


Source: CSA and ERCA but own calculations.

Figure 3 gives the import share of raw material use for BMEI and the whole M&L manufacturing sector based on the CSA survey. Unlike the rhetoric that the BMEI should play a critical role of easing the import dependence of inputs the figure shows not much improvement in this regard. The BMEI continues to use a high share of imported raw materials (above 70 per cent). This is about double the average share of imported raw materials in the whole M&L sector and shows that the sector has so far been unable to meet the expectations in terms of use of

local inputs in the BMEI sector itself let alone helping other sectors easing the dependence in imported inputs. This is another evidence showing that the BMEI is yet trapped in low technology and value added activities.

Figure 3: Share of imported raw material for BMEI and the whole M&L manufacturing sector



Source: CSA but own calculations.

5.3 Main challenges facing of the Ethiopian BMEI

Perceptions of the stakeholders

There exists some common understanding among the stakeholders (the government and private sector) on the BMEI underperformance. For example recently, a study committee was established constituting experts from different government organs such as the parliament, Ministry of Industry, and MIDI in an effort to understand and resolve the challenges facing the sector. The study report of this committee was placed for discussion among the stakeholders including senior government officials and representatives of the private sector on 1 March 2014. This report identified a number of bottlenecks deterring the sector development some of which are listed below.

- *Unfavourable tariff/tax structure:* The existing tariff/tax structure encourages imports rather than domestic production and does not identify low and high value added activities.
- *Lack of market and unfavourable government procurement system:* The government is the main buyer of BMEI products but most government organizations prefer imports and have less interest in domestic products. And at the same time the government procurement system favours bulk purchases, which can only be met by imports.
- *Shortage of finance:* the financial system favours importers over producers as well as short-term over long-term loans.
- *Poor quality infrastructure:* This includes frequent power cut, low quality telecom services, and shortage of land.

Absence of distinct instruments

The author's recent discussions with the association and MIDI representatives confirmed that there is a shared view among the private sector and government regarding the challenges identified, most of which imply the absence of sufficient protection of the selected industries from imports. As shown above, the industries selected for import-substituting (IS) including the BMEI and the chemical industries were granted the same package of incentives that have been given to the export sectors such as credit, land, free duty on imported capital and inputs, and tax holidays. The programmes that aim to enhance the capacity of the private sector have also equally applied in the export-oriented as well as the import-substituting selected industries. As far as our review, there was no revision of the tariff structure of competing imported products in favour of the domestic metal and other import-substituting industries following the decision to promote them. The package of incentives that works for the export industry might be irrelevant or less sufficient for the promotion of import-substituting industries. In sum, the promotion of the ISI needs to have distinct instruments particularly designed addressing the bottlenecks facing the sectors and trade policy is one of them.

Choice of the sector and the absence of champion products

Even if the development of the import-substitution industries requires some form of protection, in the present globalized world it is difficult to completely shield the industry from foreign competition. It is, therefore, crucial to identify the sectors whereby the country has some comparative advantage to kick-off the industrialization whether through the promotion of export-oriented or import-substituting industries. In theory there is no inherent conflict between the export-oriented industrial (EOI) and import-substituting industrialization (ISI) strategies. In fact the development strategies in the successful Asian countries (e.g. South Korea, Taiwan, and China) have always been a combination of ISI and EOI strategies. The most important issue is then in which sectors do you start the promotion. Taiwan and South Korea start implementing not only the EOI but also the ISI strategy with consumer goods such as textile, food, and other labour-intensive industries. In both countries, the heavy and chemical industry drive for import-substitution only came lately in the 1970s following the success in the labour-intensive industries through EOI as well as ISI strategies.

Unfortunately, despite the comparative advantage of the country lies on labour-intensive industries, the sectors that have been selected to kick-off the ISI based promotion in Ethiopia, the basic metal and engineering and chemical industries, are by nature capital- and technology-intensive sectors. The ISI strategy lacks the analysis of existing and future comparative (dis)advantage rather it relies on the need to tackle the growing import dependence and the possible role of BMEI and the chemical industries in import-substitution.

The absence of careful analysis of opportunities and gaps has also resulted in the identification of a sector that is too broad to make effective action plans as a single industry. The BMEI is a highly diversified sector constituting resource-intensive industries (e.g. metal making), technology intensive industries (e.g. office, accounting and computing machinery, radio, TV and communication materials, machinery and equipment, vehicles and transport equipment), and low-tech or labour-intensive activities (e.g. fabricated metal, consumer electronics). As a result, no champion product has emerged yet in this process.

Weak and less motivated private sector

In section 5.1 we have shown the government's extensive efforts to promote the BMEI and engage the private sector in the development course. However, there lies some weaknesses in the

organization and motivation of the private sector. First, the initial idea of establishing an industry association came from the government and not from the private sector itself. The need for establishment BMEI level private sector association was forwarded by the then Minister of Ministry of Trade and Industry in a consultation assembly held in April 2007. The private sector representatives who attended the meeting started the preparation work. In September 2007 (i.e. four months later) they formally established the association namely the Ethiopian Association of Basic Metal and Engineering Industries (EABMEI) with ten members. Immediately, the EABMEI has successfully gained affiliation with the Ministry of Trade and Industry. In the beginning the private sector was largely reluctant. Thus, the association continued to have few members, for example no more than 32 members until 2010. In recent years, the number has grown relatively faster and currently reached about 80 following the realization of some benefits from the close consultation with the government through their association. But still this number is only about half the number of operating companies suggesting the continued lack of interest among many.

A second weakness is that the organization of the association is too broad amalgamating various industries, which might be one cause of the lack of interest in the association. This is also a reflection of the fact that the initiative of forming private associations was driven from the governmental side. This is not consistent with the emerging literature that suggests that associations need to be organized at sub-sector level to address specific industry constraints and motivate members (for example, Hausmann and Rodrik 2006).

Third, the activities of the association have been limited to facilitating government and private sector consultations and particularly lobbying the government for the provision of improved services and other supports. So far, it has made very limited efforts to mobilize the private sector itself and other stakeholders (except the government) in the sector building. The contributions for members of the association are very small (about US\$150 per annum) and unable to undertake extra activities. The association needs to be a developmental partner in the sense that it is not only a forum of government lobbying but also discharges its own fare share.

6 Lessons to be learned

The aim of this paper was to provide some insights from the success and failure cases of present industrial policy experiment in Ethiopia. We selected two sectors, the floriculture and the metal and engineering industry which are considered to represent respectively the success and failure cases. The two sectors are different in the context that the former is export-oriented while the later import-substituting. Moreover, unlikely to the floriculture the BMEI industry promotion has started relatively lately, thus, it might be too early to evaluate the full outcome in this sector. One can, however, draw some useful lessons from the undergoing experiments, which is what we have tried to do in this study. The main lessons to be learned from the case studies can be summarized as follows.

First, the selection of a potential industry for promotion has long been a source of controversy in industrial policy debate. The analysis of comparative advantage (actual or latent) can be an instant aid in this regard. Our case study shows that Ethiopia has a clear comparative advantage of high value cut flower production over other competitors. This opportunity was identified by the private entrepreneurs through their costly experimentation. In contrast, the import-substituting strategy declares the capital- and technology-intensive sectors such as the BMEI as a priority despite the country's advantage lies over labour-intensive industries such as textile, leather or food. The import-substituting experience of successful Asian countries, however, suggest otherwise. The heavy and chemical industries were promoted at a later stage following

the success in the labour-intensive industries through EOI as well as ISI strategies. The current performance of the BMEI as well as the experience elsewhere leads to the question that whether the selection of BMEI (but not other labour-intensive industries) for import-substitution in Ethiopia at this early stage of development was proper.

Second, the emerging literature shows that a sector promotion had to focus on a specific activity with clear analysis of opportunities and challenges. The two sectors are very different in this regard which might have an impact on their relative success. The floriculture is a specific activity, while the BMEI which consists of highly diversified industries was broadly defined to make any effective industry action plan. The implication is that the future development plan of the BMEI sector ought to be based on a specific activity level.

Third, the specific activity level promotion has also great implications to the choice of policy instruments and the nature of the engagement with the private sector. The successful discovery of the flower industry in Ethiopia was a result of private entrepreneurs' experimentation. These enlightened entrepreneurs demonstrated that Ethiopia has great potential for the flower industry. In their effort to seek support they organized themselves and convinced the government to take this opportunity seriously. A warm relationship was established between the private sector and the state since then. This relationship not only enabled the government to pick the floriculture as a priority sector but also facilitated the design of appropriate policy instruments addressing emerging bottlenecks. Identifying the binding bottlenecks and designing appropriate policy tools requires careful understanding of the dynamics of the system at local and global levels. This was not possible without the emergence of a vibrant industry association, the EHPEA, which facilitated among others sharing emerging concerns, disseminating the available knowledge and consensus building among relevant stakeholders. This is consistent with the view (Rodrik 2007) that a strategic collaboration between the private sector and the government is needed to uncover where the most significant obstacles to restructuring lie and what type of interventions are more likely to remove them.

Unlike the floriculture, the establishment of the private sector association in the BMEI was initiated by the government on a predetermined criterion. As a result, the EABMEI consists of diversified sectors that have few specific needs in common and the less motivated private sector. The association activities mainly focus in lobbying the government support but lack any significant initiative to mobilize private sector and other stakeholders toward the sector development. The presence of diverse sectors under this organization might have also hindered the design of appropriate instruments addressing sector specific binding constraints. More importantly, there is a lack of distinct instruments addressing the special needs of the import-substituting industries such as the BMEI, rather the authorities apply a more or less similar set of incentives and support programmes designed for the export sectors.

Lastly, the analysis shows that the management of rents that are provided to the private sector was crucial in the success of the flower industry. The state-business relation in this sector was exemplary but not necessarily smooth. Over the course we have seen some sources of tensions between the public and private sector, for example, repatriation of foreign exchange, debt rescheduling and termination of tax holidays. The responsible government institutions have learned from their experiences. They began to strengthen their internal capacity and have developed a mechanism to monitor the performance and properly manage the rents. In contrast, no clear pattern has emerged yet in the BMEI sector in this regard.

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