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Boosting Ethiopia's Industrialization: What can be learned from China

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Abstract

The paper takes an innovative South-South approach to capacity-building by distilling lessons from China, a country with first-hand experience in the transformation and industrialization process. Ethiopia's impressive economic growth is not accompanied by strong structural transformation. The paper identifies major constraints to structural transformation in Ethiopia and draws lessons from the successful experiences of China to strengthen its industrial policies for enhanced structural transformation. Our analytical research approach follows that we first provide an extensive discussion of the evolution of Ethiopia's economic policies and their effect on economic growth and structural transformation to understand the domestic industrial policies and economic conditions, and to improve our understanding of lessons learned from China's experience to better adapt them to the domestic economic conditions and constraints in Ethiopia.

Key words: Ethiopia, industrial policy, structural transformation, China, South-South

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Background

There is growing recognition that meeting the 2030 Agenda and the Sustainable Development Goals (SDGs) is inextricably linked with the process of structural transformation. The UNCTAD project “South-South Integration and the SDGs: Enhancing Structural Transformation in Key Partner Countries of the Belt and Road Initiative” identifies several policy areas in which limitations exist in government capacity in many partner countries of BRI, to effectively design, manage, coordinate, implement, and evaluate strategic economic interventions that are the policy levers of structural transformation. To address this shortcoming, the project aims to draw lessons from China’s development strategy, to assist national institutional capacity-building in pilot partner countries.1 Indeed, China’s reform experience allowed it to not only attain the SDG’s predecessor, the Millennium Development Goals but to go well beyond them.

Although developing countries have demonstrated better growth performance since the turn of the millennium, they still face multiple challenges in their structural transformation, which calls for appropriate policy response at all levels. In contrast to learning experiences from developed countries, peer learning among developing countries could play a distinctive role given similar challenges and opportunities faced by the South in today's globalized world. Against this backdrop, the Belt and Road Initiative (BRI) initiated by China provides a unique opportunity to facilitate knowledge and experience sharing among southern countries in building a community of shared future.

On the one hand, while many developing countries are still struggling with their development challenges, China has progressed rapidly in the past four decades. Its annual GDP growth rate has been recorded as 9.5% on average and has lifted over 700 million people out of poverty since 1978. It has been widely acknowledged that China's effective development policy is essentially attributed to its policy experimentation and adaptation to the local circumstance, which can provide a reference point for other developing countries when they design their growth policies.

On the other hand, BRI has mobilized enormous development financing resources through trade, FDI, debt, infrastructure financing, technology transfer, and industrialization cooperation, etc., which also provides a "learning-by-doing" opportunities beyond the projects per se as operating and managing those projects inevitably involve knowledge and experience sharing among all BRI partner countries. This project addresses the growing realization that meeting the 2030 Agenda and the Sustainable Development Goals (SDGs) is inextricably linked with the process of structural transformation. The project takes an innovative South-South approach to capacity-building by distilling lessons from a country with first-hand experience in the transformation process, and which is engaged in an ambitious foreign economic policy

1 The pilot partner countries are Ethiopia, Indonesia and Sri Lanka.

centered on cross-regional infrastructure connectivity and productive investment known as the Belt & Road initiative (BRI).

The main objective of the project is to enhance the capacity of developing countries to strengthen their policies for structural transformation through learning from the successful experiences of other developing countries, particularly from China. The overarching strategy to drive the implementation of the project is based on the confluence of two growing trends: i) China's increasing outward economic and financial engagement with developing countries, bolstered by the announcement of the BRI in 2013; ii) the relative lack of a deeper understanding among developing country policy-makers of China's unorthodox economic policy strategies and institutional mechanisms.

The project's main activities consist of analytical research organized along with the two themes, i.e., first to improve understanding of lessons learned from China's experience in structural transformation; and second, to adapt these lessons according to domestic conditions in pilot countries, more as a model example to emulate.

Ethiopia’s industrialization: industrial policies, strategies, and tools

Economic/industrial policies evolution in Ethiopia

Modern industries started to emerge in the 1920s in Ethiopia. Most of them were owned by foreigners. For example, in 1927 there were about 25 enterprises set up by foreigners (Gebreeyesus, 2013). With some disruption following WWII, the industrial sector started to revive as more foreign firms started to come in the 1950s following the implementation of three successive development plans between 1958-73 by the then imperial government (World Bank, 1985). Despite this, the industrial sector remained quite small populated by largely import-substituting firms and employing only about 60,000 people (Gebreeyesus, 2013).

The modest industrialization efforts and achievements were halted by the coming of the Derg Regime in 1974. The Derg regime (1974 – 1991) declared itself a socialist government and imposed various market restrictions and nationalization strategies. The socialist government’s economic restructuring based on massive regulation and nationalization led the country into one of the most heavily regulated and closed economies in the world. The outcome, especially when combined with protracted civil war, was severe macroeconomic instability, dismal economic outcomes, and social crisis, the industrial sector shrunk and the sector virtually vanished.

Much of Ethiopia's growth and structural transformation took place under the EPRDF government, which took power in 1991. Since 1991, the Ethiopian economy has undergone a major transformation, moving away from central planning towards a market-based economy, and achieved remarkable economic growth and poverty reduction. The various reforms, policies, and strategies that contributed to this can be seen in two stages.

(i) The formative reform years: 1991 – 2002;

This period can rather be well characterized as formative years for Ethiopia. It involved building a new nation that just came out of a prolonged war and command economy. Some of the major milestones during this period include restoration of peace and security, drafting of a new constitution (which also covers private property ownership), resuscitation of the suppressed private sector by lifting the imposed restrictions, re-establishing relationships with the outside world, and other market reforms. In relation to industrial policies and industrialization, the major economic liberalization and deregulation reforms since 1991 include (Gebrehiwot, 2019):

- the full transition to private property ownership (except for land) by instituting property rights, property rights enforcement mechanisms, and by privatizing many SOEs.
- from inward-looking to out-ward looking export-led industrialization (since 1995);
- import liberalization through rationalization of the tariff structure,
- reduction of quantitative restrictions and simplification of licensing procedures on imports,
- liberalization of the foreign exchange market (such as the removal of restrictions and the substantial devaluation of the Birr)2,
- removal of subsidies and export tax rebate;
- liberalization of input and output prices (except for petroleum),
- introduction of a new investment code and labour and public enterprise laws and privatization agency

(ii) The developmental period: 2003 to 2018

2 The Ethiopian birr remained at the rate of 2.07 between 1973 and 1992. The exchange rate was one of the reform areas the new government embarked on. Consequently, the first devaluation wave slashed the birr by about 142 percent (i.e., from 2.07 to 5 birr per dollar) in 1992. Since 1992, Ethiopia follows an exchange rate arrangement of what the IMF would classify as crawl-like exchange rate (WB, 2017). In the recent past, the National Bank of Ethiopia conducted two devaluations in September 2010 (17 percent) and in October 2017 (15 percent) in attempt to boost exports and alleviate the foreign exchange shortage.

Ethiopia started to implement the Agricultural Development Led Industrialization (ADLI) in the mid-1990s. ADLI provides a broad policy vision and direction for Ethiopia (Ohno, 2009), but it particularly defines the key role of Agriculture in early industrialization. As defined in the ADLI policy, the role of agriculture in Ethiopia's early industrialization is to provide initial capital and surplus labor for the industrial sector. Agriculture has been and is a dominant sector in Ethiopia, contributing 33% to GDP, 76% to employment, and 79.2% to export (PDC, 2019), and capital required to finance industrial expansion (at least in the early stages of development) would have to be largely raised from this sector by taxation, voluntary transfer (savings), and foreign exchange earnings. Also, when agricultural productivity increases, surplus labor gets reallocated to the industrial sector.

Although ADLI provided an overall policy vision and direction, there were no specific industrial or sectoral policies targeting the industrial sector up until 2003. In line with the ADLI framework, the government of Ethiopia formulated the first-ever comprehensive Industrial Development Strategy (IDS) in 2003. The central theme of the IDS was to end (reduce) poverty and embark on industrial development through the implementation of selected industrial instruments. The industrial development strategy (IDS) has the following major pillars:

- It takes the private sector as an engine of industrial development
- It attaches great importance to the development of strong agro-industrial linkages and integrated industrial value chains
- Promotion of export-oriented and labor-intensive industries to generate foreign currency and create jobs.
- Government to play a leading role in coordination, creating a conducive business environment (including the provision of infrastructure and skilled labor), and also to make direct public investment in sectors where gaps exist in private investment. The state is also tasked with promoting developmental capitalists (through incentive system) and limit rent-seeking (through discouraging policies and regulations)

The goals and pillars of the IDS were further illustrated, concretized, and implemented by successive development plans: SDPRP (2003-2005), PASDEP (2006-2010), GTP-I (2011-2015), and GTP-II (2016-2020).

The IDS has been concretized and implemented by successive development plans: SDPRP (2003-2005), PASDEP, GTP-I, and GTP-II.

(a) Sustainable Development and Poverty Reduction Program (SDPRP) – (2003-2005)

The central objective of the SDPRP was poverty reduction and macroeconomic stability (MoFED, 2002). The poverty reduction objective has been to ensure food security at the national and household level by (a) increasing the availability of food; (b) ensuring access to food, and (c) strengthening emergency response capabilities. On the other hand, the macroeconomic stability objective focused on economic growth and external sector growth through selective export promotion of priority sectors and the establishment of

the export steering committee. The SDPRP was supported by bilateral and multilateral organizations.

(b) Plan for Accelerated and Sustained Development to End Poverty (PASDEP) – (2006-2010)

Ethiopia launched the second phase of the SDPRP, known as the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) in 2006. Like its predecessor, the PASDEP provided Ethiopia's overarching poverty-reduction strategic framework and plan for the period 2006-2010. The objectives of PASDEP are (MoFED, 2005): i) registering and sustaining annual economic growth of 7 to 10 percent through massive investments in key anti-poverty sectors; ii) increasing agricultural productivity and production, with crop output rising from approximately 15 million tonnes per year to 38 million tonnes; iii) increasing exports by targeting export-oriented sectors such as the textile, leather and floriculture industries. Unlike the previous plan, the PASDEP was explicitly aligned with the MDGs and outlines Ethiopia's medium-term plan for achieving the MDGs.

(c) GTP-I (2011 – 2015)

The successor Plan to the PASDEP was the Growth and Transformation Plan (GTP-I), which spans the five years of 2011 to 2015. While the previous plans focused on poverty reduction, the GTP added another level of focus which is structural transformation. Through the GTP, Ethiopia embarked on massive industrialization programs. The GTP_I laid the basic foundation for industrialization through massive investments in infrastructure including the construction of new, electrified, standard gauge railway lines; a large dam on the Blue Nile with hydro-powered turbines with a design capacity of about 5.8 gigawatts; road construction (both urban and rural); a Public Transport System (PTS) that includes a Light Rail Transit (LRT) and Bus Rapid Transit (BRT) for Addis Ababa; the construction of industrial parks in Addis Ababa and other major regional hubs; and several Inland Container Depots (ICDs) and dry ports (MoFED, 2010).

Ethiopia's GTP aimed to sustain and deepen rapid economic growth and structural transformation setting ambitious goals across a wide range of indicators, with particularly high targets for export growth, job creation, and structural transformation (MoFED, 2010). While productivity increase was the main objective of the rural sector, export growth and job creation were the main objectives of the industrial and small business sectors.

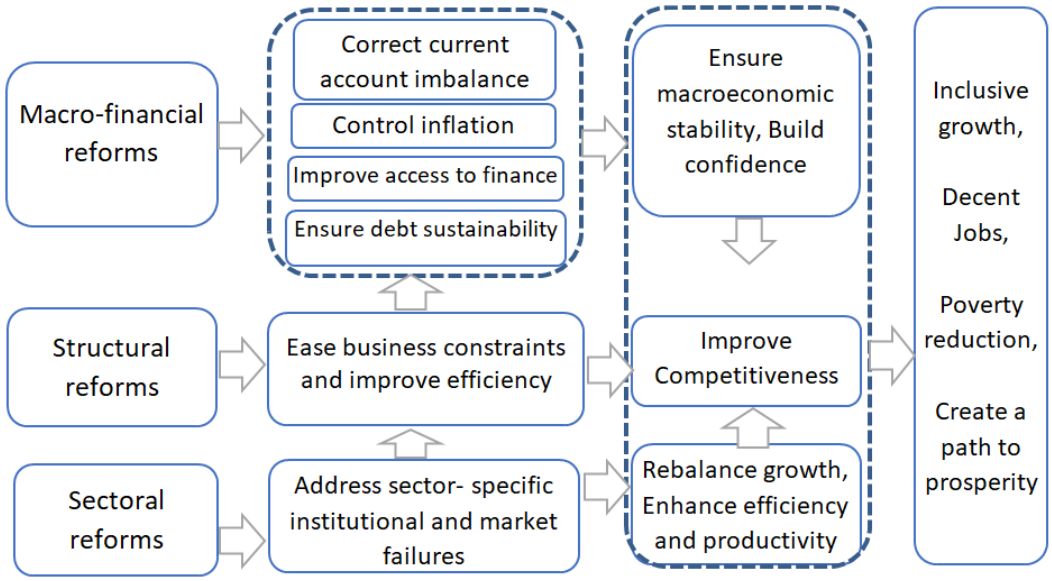
(d) GTP-II (2016 – 2020)

GTP-II came with even more ambitious and bold targets. The broad objectives of GTP-II included the consolidation of GTP-I achievements by completing unfinished major infrastructure projects; maintaining the leading role of public investment in new infrastructure development; enhancing the rural development agenda of GTP-I with a special focus on investment and productivity improvement and the expansion of the industrial sector (NPC, 2015). GTP-II especially underlined the development of a dynamic domestic industrial sector through learning and capacity building from FDI enterprises.

(e) Homegrown Economic Reform (HGER)

Ethiopia has registered rapid economic growth over the last decade and a half. The rapid economic growth Ethiopia achieved during the last decade and a half has led to a significant increase in per capita income and hence poverty reduction (PDC, 2019). Nonetheless, the impressive growth Ethiopia achieved came with its challenges and downturns. The massive spending on critical public infrastructures and projects - such as hydroelectric dams, sugar projects, industrial parks, highways, bridges, airports, dry ports, etc - resulted in increased inflation and colossal macroeconomic imbalances (PMO, 2019). The economy suffered from a severe shortage of foreign currency, a widening trade deficit resulting from an underperforming export sector, and a growing external debt. Unless addressed, these chronic challenges could severely slow down Ethiopia's growth momentum. In an attempt to address these macroeconomic and structural bottlenecks, the Ethiopian government has announced a Homegrown Economic Reform Plan (HGER), consisting of a mix of macroeconomic, structural, and sectoral reforms (PMO, 2019). The macroeconomic reform measures aim to address external imbalances, control inflation, reduce debt vulnerabilities and improve debt sustainability, and create a healthy financial sector. The structural reform aims to ease business constraints and improve efficiency. The sectoral reform aims to address sector-specific institutional and market failures in key strategic sectors.

Figure 1: The reform agenda



Source: Based on the FDRE PMO: Homegrown Economic Reform Agenda: A Pathway to Prosperity (2019)

(f) Ten-Year Perspective Plan

The Ethiopian government has launched a new 10-year perspective plan which will run from 2020/21 to 2029/30. The plan aims to sustain the remarkable economic growth achieved under the Growth and Transformation Plans while putting more emphasis on the private sector. The 10-years perspective plan has a vision of making Ethiopia an African Beacon of Prosperity by 2030. The Plan builds on its predecessor, the GTP-II, and has six strategic pillars (PDC, 2020):

- Ensure quality growth
- Improve productivity and competitiveness
- Undertake institutional transformation
- Ensure private sector's leadership in the economy
- Ensure equitable participation of women and children
- Build a climate-resilient green economy

The 10-year perspective plan defines the following as its main focus areas:

- Productive sectors: agriculture, manufacturing, mining
- Service sector: tourism
- Enabling sectors: energy, transport, sustainable finance, innovation and technology, urban development, irrigation, and human capital development

Finally, by registering an average growth rate of 10 percent, the Plan aims to increase per capita income to USD 2220, reduce the poverty rate to 7 percent, and increase the sectoral contributions of the industrial and manufacturing sectors to 35.9% (now 27.6%) and 17.2% (now 6.8%) respectively by the end of the Plan period, 2030 (PDC, 2020).

(g) Industrial Development Roadmap (2013-2025)

Further to the development plans presented above, Ethiopia also formulated long-term industrial and sectoral roadmaps in 2013 to lead the national vision of becoming a middle-income country through industrialization and transformation. The Industrial Development Roadmap runs from 2013-2025. The roadmap envisioned building an industrial sector with the highest manufacturing capability in Africa which is diversified, globally competitive, environmentally friendly, and capable of improving the living standards of the Ethiopian people by the year 2025 (MoI, 2013). According to (MoI, 2013), the explicit goal of the industrial development roadmap is to bring about structural change in the economy through increasing the share of the industry and manufacturing sector as a percentage of GDP by the end of the roadmap period. This encompasses enhancing the productive capacity of the existing priority industries and development of SMEs, the development of light industries, the diversification into new and emerging industries such as ICT, electronics, petro-chemical industries, biotechnology, and packaging industries.

(h) The Climate Resilient Green Economy (CRGE)

Following Ethiopia’s fast industrialization, overall industrial emissions are projected to grow by 16 percent annually from 4 Mt CO2e today to 71 Mt in 2030 (EPA, 2011). A high growth rate of industrial emissions and environmental hazards would lead to unsustainable development and lock-in industrial inefficiencies, which ultimately are a less sustainable option, impairing long-term growth. To address this, Ethiopia has developed the CRGE strategy in 2011 to build a green economy. The strategy attempts to put the right policies, regulatory, market, and incentive systems in place to encourage new investments in environmentally friendly and green industries, and to incentivize existing industries to transition to green and efficient technologies without losing their competitive advantages. One distinctive approach the government of Ethiopia (through

the Ministry of Industry) has been implementing to help existing manufacturing firms transition to environmentally friendly and sustainable production systems is to encourage them to co-locate inside clusters and industrial parks. Co-location inside designated clusters and industrial parks allows existing firms to have access to modern common (shared) wastewater treatment and other energy-efficient and modern technologies at a relatively lower cost. The co-location advantage reduces their cost of shifting to greener technologies significantly as much of the costs are shared and some absorbed by the government. A good example is the tannery industries in Addis Ababa that have recently moved to the Modjo cluster and the many industrial parks in the country.

(i) Major Industrial Policy Tools

This section reviews some of the widely used and relevant industrial policy tools that Ethiopia has used as its instrument to achieve its industrialization goals.

a) FDI

Ethiopia aims to achieve a lower-middle-income status by 2025 (NPC, 2015). To achieve this, massive expansion of investments in manufacturing and commercial agricultural need to happen. Such a huge investment cannot, however, be mobilized from the domestic economy alone. Foreign direct investment (FDI) can play a positive role in this. In recognition of this, the Government of Ethiopia (GOE) has recently renewed its interest to attract FDI and particularly into manufacturing. As a result, the country has already become the preferred destination for FDI in sub-Saharan Africa. Next to some Asian countries, Ethiopia is one the countries that are experimenting is FDI-led industrialization can succeed. A formal assessment is required to say if the policy is working or not, but early indicators show that Ethiopia has become one of the destinations for FDI.

The most anticipated benefits of inward FDI to developing countries include alleviating capital constraint, increasing export earnings, job creation, and technology transfer (Dunning & Lundan, 2008). However, it needs to be studied if Ethiopia has started to sufficiently benefit from the presence of FDI in Ethiopia in terms of the above indicators. A study by (Gebreeyesus, M.; Abebe, G.; Berhanu, T., 2017) shows that Ethiopia's main focus has been on attracting FDI while little attention has been given on how to maximize the spillover effects of FDI. The study also indicates that attracting investors and benefiting from their presence at home likely require a different level of effort and policy tools.

Institutionally, the Ethiopian Investment Commission (EIC) is the primary institution that is tasked with investment promotion and development by offering investors one-stop services. To attract and retain foreign investment, the Ethiopian government offers a variety of incentives 3 , lowered investment barriers, provides guarantees against expropriation or nationalization; provides guarantees for full repatriation of profits,

3 The fiscal incentives include exemption from customs duty on imported capital goods, construction materials and spare parts up to 15 percent of the value of the imported capital goods; income tax exemption up to nine years; and loss carry forward for half the income tax exemption period.

dividends, principal, and interest payments on external loans; and provides permission to hire expatriate managers and experts, and treaties to avoid double taxation.

b) Export promotion

Ethiopia's development strategy, as described in GTPII (NPC, 2015) has been to promote an agricultural-based, manufacturing sector-driven, and export-led development strategy. Ethiopia has invested heavily in infrastructure, industrial skills development, and agricultural productivity, all of which are critical to industrial development and faster growth of exports by reducing production costs, and augmenting global competitiveness. The issue of export promotion appears to be extremely important to policy due to the exceedingly pressing, binding, balance of payments constraint and the frequent foreign exchange shortages Ethiopia is grappling with.

While exports receive the highest attention as a source of foreign currency to addressing the binding balance of payments constraints, the export institutional setup seems to lack coherence. For example, there is no single government agency or institution that is specialized in export promotion and development. Instead of a specialized export promotion agency, the Ethiopian government established the National Export Coordination Committee under the Prime Minister's Office. Committee members consist of representatives from export-related government ministries, industries, trade, customs, transportation, and sectoral institutes. The Committee convenes once a month and has technical subcommittees to coordinate and formulate policy among competent government units involved in export promotion.

c) Development of Industrial Sites

Ethiopia followed an industrial land and infrastructure cost-saving approach in its industrial development process. To create a conductive business environment for investment by providing key infrastructures, Ethiopia has been developing what Ethiopia calls "development corridors or development hubs," which include industrial and integrated agro-parks. While most of the industrial parks were initially inhabited by FDI firms, the government expected most of the investment linkages with the local economy to happen along these development corridors and around the industrial parks. Ethiopia's rationale for industrial park development program are mainly two (NPC, 2015): (a) rapid industrial development – Evidence and experience in Asia indicate that industrial park development increases regional and national industrial competitiveness through the provision of an institutional framework, modern administrative services, physical infrastructure and diffusion of economic learnings, and better incentives. (b) Improve the quality of industrial development - on the other hand, industrial park development is also instrumental to mitigating negative externalities (i.e., social and environmental problems) associated with industrial and urban development.

d) Technological Development

To develop the technological capacity of the priority sectors, Ethiopia established industry-specific institutions for promoting and developing technologies under the MOI. These include the Metal Industry Development Institute (MIDI), Leather Industry Development Institute (LIDI), Textile Industry Development Institute (TIDI), Chemical and Construction Inputs Industry Development Institute, and Food, beverage and

pharmaceutical industry development institute. These institutes provide comprehensive technology and training support to industries. To accomplish this, the institutes have invested in better equipment, laboratories, and trained staff.

Ethiopia's industrialization: Achievements and impact on economic development

Impact on economic development

This section briefly discusses the major economic achievements of the policies and plans that are discussed above.

(i) Key Macroeconomic Indicators

A snapshot of Ethiopia's main macroeconomic indicators quickly reveals that Ethiopia faces macroeconomic imbalances, including mainly sustained & high inflation, high and rising urban unemployment, a weak export sector, high and rising debt burden, and chronic foreign currency shortage. Below is a snapshot analysis of the main macroeconomic indicators in Ethiopia.

(a) GDP Growth, and Sectoral Contributions & Shares

Ethiopia's high growth trajectory started in 2003/2004. In the same period, the Ethiopian government drafted and implemented the Industrial Development Strategy of Ethiopia (IDS 2002/2003) and other key sectoral policies and plans. Further, this period could be characterized as the revival of interest in industrial policy among policy analysts and academics (Rodrik, 2004; Hausmann & Rodrik, 2006). Since then, Ethiopia has enjoyed strong economic growth for over 15 years. As indicated in Table 1, between 2003/2004 and 2018/2019, Ethiopia's economic growth rate has averaged at 10.3 percent. The year 2002/2003 was a drought year and, consequently, the growth rate dropped to a negative 2 percent. On the other hand, the period between 1992/1993 – 2001/2002 can be characterized as a moderate growth rate for Ethiopia.

Table 1. Ethiopia's Economic Growth Performance Trajectory

Year	Average Real GDP Growth Rate (%)
1975/1976 – 1991/1992	1.7
1992/1993 – 2001/2002	5.5
2002/2003	-2.1
2003/2004 – 2018/19	10.3

Source: PDC, MoF

In 2017/18, Ethiopia's economic growth fell to 7.7% (from 10.1% in 2016/17, see Table 2) due to reduced government public expenditures (to achieve fiscal consolidation) and political uncertainties ensuing the social unrest in the country, which affected the

manufacturing, construction, and service sectors through physical damages and reduced confidence of investors. The public expenditure cut was following the advice of the IMF4. The IMF's rationale for reduced public expenditure was to address the growing sustainability concerns of the public investment-led growth model and macroeconomic imbalances of the country.

In the most recent fiscal year 2018/2019, the Ethiopian economy has registered a real economic growth rate of 9 percent against the 11 percent target set in the GTP-2 (see Table 2). This growth has been recorded as a result of a 12.6 percent growth in the industrial sector, an 11 percent growth in the service sector, and a 3.8 percent growth in the agriculture sector. Further, within the industrial sector, the manufacturing sub-sector grew by 7.7 percent and the construction sub-sector grew by 15.0 percent. Consequently, the share of the industrial, and service sectors in GDP has increased to 28.1 and 39.8 percent in 2018/2019 (from 27 and 39.2 percent in 2017/2018) while that of the agriculture sector dropped to 33.3 percent in 2018/2019 from about 35 percent in 2017/2018.

Table 2. Real GDP growth and sectoral contributions and shares

Items		**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**
Growth in Real GDP		10.3	10.4	8.0	10.1	7.7	9.0
Per capita GDP (USD) (Nominal)		656.4	744.1	815.0	876.0	883.0	985.0
Growth rate in Per capita GDP		14.4	13.4	9.5	7.5	0.9	11.6
Share in GDP (in %)	Agriculture	41.1	39.6	37.5	36.3	34.9	33.3
	Industry	18.6	21.0	23.7	25.9	27.0	28.1
	Services	39.4	39.5	39.7	38.8	39.2	39.8
Agriculture	Absolute Growth	5.5	6.4	2.3	6.7	3.5	3.8
	Contribution to GDP growth	2.3	2.5	0.9	2.5	1.3	1.3
	Contribution in %	22.3	24.0	11.3	24.6	16.5	14.6
Industry	Absolute Growth	19.7	24.6	22.2	20.3	12.2	12.6
	Contribution to GDP growth	2.2	2.7	4.7	4.8	3.1	3.6
	Contribution in %	21.4	26.0	58.8	47.3	40.8	39.5
Services	Absolute Growth	12.5	10.6	8.7	7.5	8.8	11.0
	Contribution to GDP growth	4.9	4.2	3.4	3.0	3.4	4.1
	Contribution in %	47.6	40.4	42.5	29.4	44.0	45.8

Source: PDC

A closer look at the industrial sector shows that the construction sector is the major contributor (20.1 percent of GDP and 72.5 percent of the industrial output). This may reflect the major infrastructural construction projects in roads, railways, dams, and housing. On the other hand, the GDP and industrial output shares of the manufacturing

4 2018 IMF Article IV for Ethiopia

sector are 6.8 percent and 24.3 percent in 2018/2019 respectively. The other two subsectors of the industrial sector, electricity & water and mining, had 2.7 and 0.5 percent contributions to industrial output, respectively.

(b) Real per capita income and poverty indices

During the high growth period (2003/2004 – 2018/2019), the per capita income of Ethiopia grew from a very low level of 250 USD (in 2005/2006) to 656 USD (in 2013/2014) and 985 USD (in 2018/2019). Between 2005/2006 and 2018/2019, Ethiopia's per capita income increased by about four-fold (see Table 3).

Table 3. Ethiopia's Per Capita Income Growth Performance

Year	Amount (USD)
2005/2006	250
2013/2014	656
2018/2019	985

Source: PDC, MoF

Ethiopia's strong and sustained economic growth over the past 15 years (Table 1) has led to improvements in per capita income (Table 3), which in turn has contributed to significant poverty reduction. Consequently, the poverty headcount ratio declined to 22 percent in 2018/2019, from 30 percent in 2009/10 and 46 percent in 1996/1997 (see Table 4). Between 1996/1997 and 2018/2019, the number of people living below the poverty line has halved. However, despite the commendable poverty reduction over the past 15 years, it needs to be noted that close to a quarter of Ethiopia's population still live under the poverty line.

Table 4. Ethiopia's Poverty Levels

Ethiopian Year	Poverty headcount (%)
1996/1997	46
2004/2005	39
2009/2010	30
2018/2019	22

Source: PDC, MoF

(c) Unemployment

Despite the fast growth record in the past few years, Ethiopia still grapples with a high urban unemployment rate. This may be because Ethiopia's economic growth is not accompanied by a rapid structural transformation (see subsequent sections for discussions on structural transformation). Unemployment is still high at about 19.1 percent according to recent CSA's urban employment unemployment surveys and therefore remains to be a top priority in the country's development agenda. Particularly, the youth unemployment rate stands at 25.3 % (18.6 percent for males, and 30.9 percent for females).

(d) External Sector

The total export and import values stood at USD 2.7 billion and USD 15.1 billion, respectively, in 2018/19 (see Table 5). The merchandise trade deficit in 2018/19 widened to USD 12.44 billion from USD 12.42 billion a year earlier mainly due to the slowdown in goods export earnings by 6 percent. Export earnings are largely driven by agricultural commodities exports in Ethiopia. For example, in 2018/2019, of the total merchandise export, the share of agriculture, industry, and mining amounted to 79.2%, 19.4%, and 1.4 %, respectively. The 6 percent decline in export earnings in 2018/2019 is as a result of lesser export earnings from Ethiopia's major export commodities (i.e., coffee by percent, oilseeds by 8.4 percent, leather & leather products by 11.4 percent, meat & meat products by 12.8 percent, and gold by 72.1 percent). Consequently, the ratio of merchandise export to GDP dropped to 2.8 percent in 2018/2019 from 3.4 percent in 2017/2018 and 3.6 percent in 2016/2017 (see Table 5).

Table 5. External Sector Performance (Merchandise trade sector)

Items	2016/17	2017/18	2018/19	Percentage Change	
	A	B	C	B/A	C/B
Components of Trade Balance (in million USD)					
Exports	2,907.5	2,836.1	2,666.5	-2.5	-6.0
Imports	15,802.7	15,255.3	15,112.0	-3.5	-0.9
Trade balance	-12,895.3	-12,419.3	-12,445.5	-3.7	0.2
Components of Current Account as a Percentage of GDP					
Exports	3.6	3.4	2.8	-5.5	-17.1
Imports	19.3	18.1	15.8	-6.4	-12.6
Trade Balance	-15.8	-14.7	-13.0	-6.7	-11.6
Net Services	-0.7	-0.2	-0.6	-66.8	152.7
Net Private Transfers	6.7	7.2	6.7	7.3	-7.4
Current Account Deficit (excluding official transfers)	-9.8	-7.7	-6.9	-20.5	-10.7
Current Account Deficit (including official transfers)	-8.0	-6.3	-4.7	-21.7	-24.3

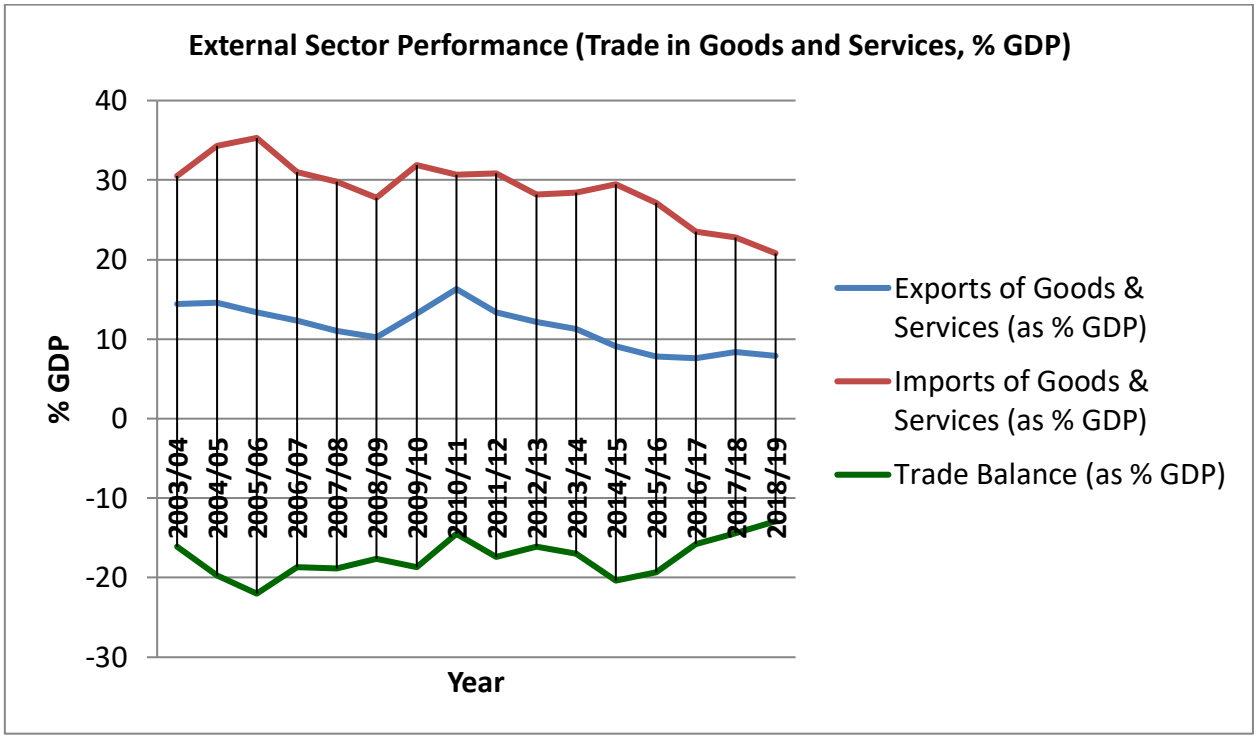
Source: NBE

In both the GTP I and II periods, the actual export performance of merchandise export misses its (planned) targets by a large margin. For example, the GTP 2 export target is 20.6% while actual performance is 7.7%. The main reasons for the export underperformance are related to policy problems (i.e., anti-export bias and insufficient and ineffective incentives), structural problems (lower productivity and inefficient logistics systems), and macroeconomic problems (e.g., exchange rate overvaluation)5. Services trade exhibits similar trends to that of merchandise trade. Despite the significant trade reforms that have moved Ethiopia towards a more market-oriented economy, Ethiopia has sustained a large trade balance gap (about 18 percent of GDP on average for the last fifteen years) (Figure 1). The main reasons for this are two. The first reason relates to Ethiopia's export vulnerability. Most of Ethiopia's exports (about 79 percent) come from agriculture. Ethiopia's concerted efforts to transition away from traditional

5 Gebreeyesus et al. (2017) and World Bank (2014)

commodity exports into higher-value sectors and sectors that are not heavily affected by external price and demand shocks have been quite slow (Assefa & Gedefe, 2016). Its exports are still vulnerable to demand shocks and price swings in global markets. The second explanation relates to large anti-export bias arising from trade logistics inefficiencies, insufficient and less effective export incentives, weak export institutions, and exchange rate overvaluations (Gebreyesus & Demile, 2017; WB, 2014).

Figure 1. Ethiopia's Trade Balance (Goods and Services): 2003/2004 – 2018/2019



Source: PDC, ERCA

(e) Saving – Investment Gap

There are significant improvements in bridging the saving-investment gap. However, Ethiopia's financing gap in investment remains large (i.e., averaged 15 percent of GDP between 2003/2004 and 208/2019). While savings increased from 17 percent in 2003/2004 to 23 percent in 2018/2019, investment has been already high (32 percent) since 2003/2004 and slightly increased to 35 percent in 2018/2019. In an attempt to close the financing gap, Ethiopia prioritized the attraction of foreign capital through FDI. Ethiopia has attracted large projects and brand manufacturers into its labor-intensive textile and garment, leather and leather goods sectors. While the growth of domestic investment has been slow, FDI inflow has been remarkable in sub-Saharan Africa – for example, in 2017, Ethiopia attracted 3.6 billion USD (UNCTAD, 2018).6 The same UNCTAD report also shows that Ethiopia's FDI inflow is only next to Myanmar among the least developing countries in the world.

6 According to UNCTAD's recent World Investment Report (2018), FDI has declined globally by 23 percent in 2017. While the decline also affected many African economies that rely on resources, such as oil, Ethiopia is considered to be a more resilient destination for export-oriented FDI in the same year.

Table 6. Saving - Investment Gap (2003/2004 - 2018/2019)

Year	Gross Capital Formation	Gross Domestic Savings	Saving - Investment gap
2003/04	32.3	16.9	(15.4)
2004/05	29.0	12.1	(16.9)
2005/06	30.7	11.1	(19.6)
2006/07	27.0	15.7	(11.3)
2007/08	27.3	13.1	(14.2)
2008/09	27.7	14.1	(13.6)
2009/10	30.1	13.8	(16.3)
2010/11	31.1	17.3	(13.8)
2011/12	36.0	19.6	(16.4)
2012/13	33.0	17.8	(15.2)
2013/14	36.8	20.7	(16.1)
2014/15	38.2	22.1	(16.1)
2015/16	37.3	22.4	(14.9)
2016/17	38.4	22.4	(16.0)
2017/18	34.1	24.3	(9.8)
2018/19	35.2	22.3	(12.9)
Average	**32.8**	**17.9**	(14.9)

(f) External Burden

Ethiopia's external debt stock reached USD 27.0 billion in 2018/19, showing a 4.9 percent annual growth relative to the preceding year mainly because of higher multilateral and commercial debts (see Table 7). During the same period, Ethiopia's external debt stock to GDP and export earnings ratios stood at 28.3 percent and 3.6 percent. However, a more useful measure of debt sustainability is the debt burden.

Table 7. Ethiopia's External Public Debt

Particulars	2016/17	2017/18	2018/19	Percentage Change	
	A	B	C	D=B/A	E=C/B
Annual Debt	2,930.6	3,505.1	2,804.4	19.6	-20.0
Debt Stock	23,337.2	25,773.5	27,039.3	10.4	4.9
Multilateral	9,105.1	10,491.8	11,683.6	15.2	11.4
Bilateral	8,139.4	8,526.6	8,420.3	4.8	-1.2
Commercial	6,092.7	6,755.1	6,935.4	10.9	2.7
Debt Services	1,288.1	1,602.6	1,995.7	24.4	24.5
Debt Stock to GDP Ratio (in %)1/	28.5	30.6	28.3	7.0	-7.5
Debt stock to export of goods and non-factor services	3.7	3.7	3.6	-2.3	-2.8
Debt services to export ratio	20.6	22.7	26.2	10.0	15.4

Source: NBE and MoF

The debt burden is measured by debt services to the export receipts. As can be seen from Table 7, external debt sustainability is a rising risk that is likely to impact Ethiopia's ability to service its debts and its access to external finance. For example, Ethiopia's external debt burden increased to 26.2 percent in 2018/2019 from 22.7 percent in 2017/2018, which is a 15.4 percent increase. With a public debt–to-GDP ratio of 57% (including publicly guaranteed debts) in 2018/2019, Ethiopia remains at high risk of debt distress, according to a 2019 debt sustainability analysis by the IMF7.

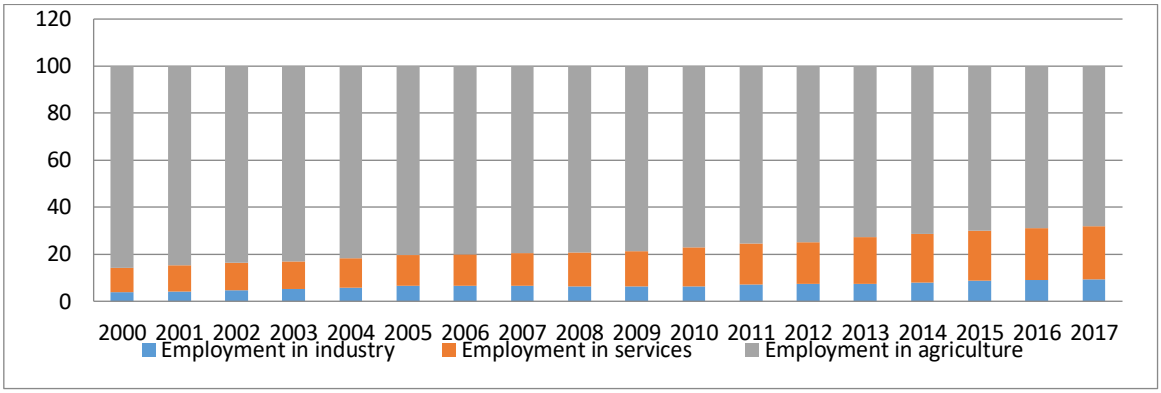
(ii) Key structural transformation indicators

Ever since Ethiopia started the SDPRP and especially since the launch of the first GTP (2010-2015) followed by the second GTP (2015-2020), Ethiopia has gravitated to a more active industrial policy aiming at bringing about structural transformation to its economy. The high level of economic growth observed in the country since 2003/2004 was largely driven by substantial public investment in infrastructure and the strong performance of the service sector that benefitted from a modest shift of labor from the agricultural sector. Out of the 9% real GDP growth in 2018/2019, the service sector, agriculture, and industry contributed 4.1, 1.3, and 3.6 percentage points, respectively. The GDP shares of the agriculture, industry, and service sectors changed from 41.1, 18.6, and 39.4 percent in 2014/2015 to 33.3, 28.1, and 39.8 percent in 2018/2019. Furthermore, extreme poverty (the percentage of the population living below the international poverty line) fell from 46% in 1996/1997 to 22% in 2018/2019. The achievement in terms of reducing poverty largely came from growth in agriculture and a modest improvement in the structural transformation between agriculture and industry. However, it is to be noted that more than 70% of the industrial sector's value-added comes from the construction sector. Hence, currently, the manufacturing sector contributes less than 8% to GDP (low even by Sub-Saharan Africa share which stands at about 10%). Therefore, achievements in structural transformation in terms of a change in the structure of the economy measured by sector value-added towards the manufacturing sector have been limited.

The second dimension of structural transformation is the way labor is allocated (measured as sectoral shares in employment). Employing close to 70% of the labor force, the agricultural sector continues to be the main employer in Ethiopia. The employment shares of the service and industrial sectors stand at 22 and 10% respectively (see Figure 2 and Figure 3), showing structural transformation in terms of employment remains is still untapped.

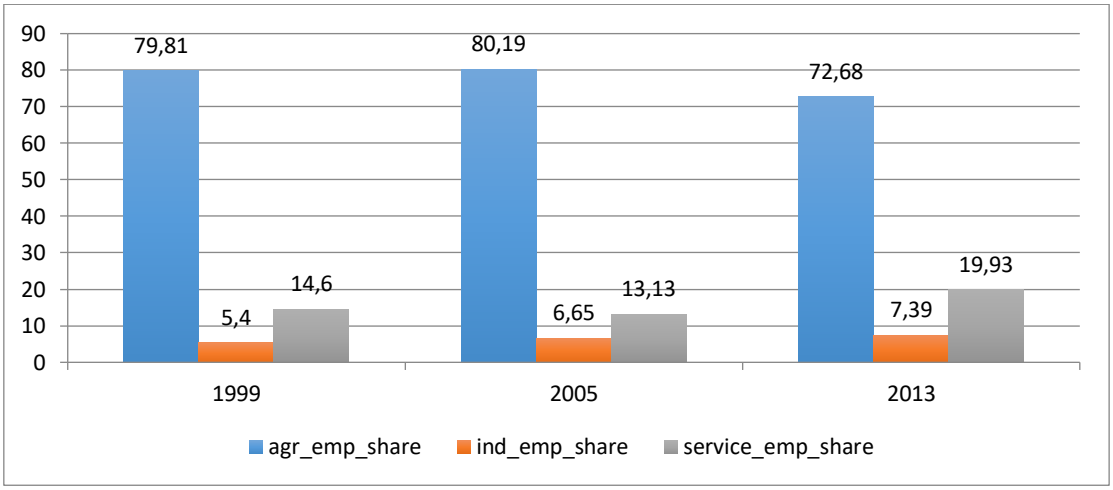
7 IMF 2019 Article IV for Ethiopia

Figure 2. Employment Share, by Sector (% of total employment), Modelled ILO Estimates



Source: WDI, Modeled ILO estimate

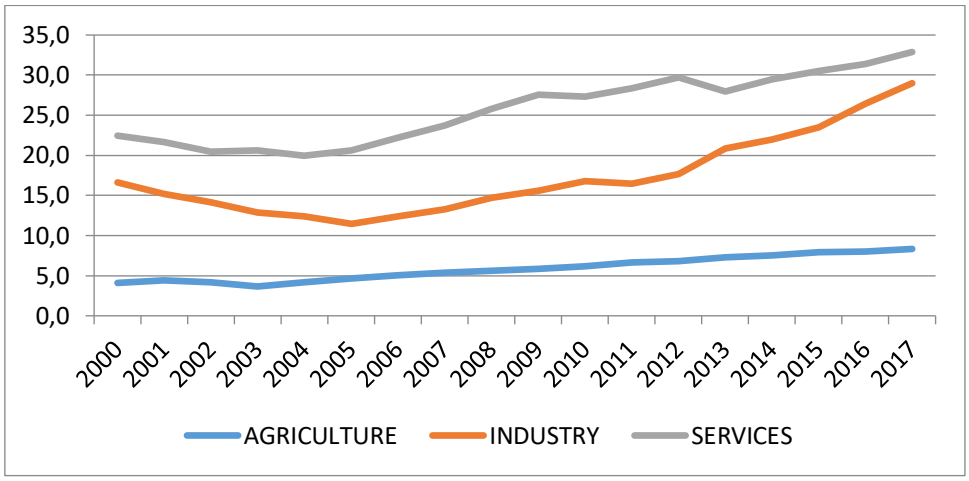
Figure 3. Employment Share, by Sector (% of total employment) Labour Force Surveys



Source: Compiled from the National Labour Force Surveys 1999, 2005, and 2013

The third dimension of structural transformation is sectoral productivity measured by value-added per worker. Even though the industrial sector commands the smallest share in value-added to GDP in the country; its value-added per worker has been closing-in to the level of the service sector and is higher than that of the agricultural sector. As shown in Figure 4, between 2005 and 2017, the value-added per worker in the industrial sector exhibited the highest growth of 152% while the agricultural and service sectors grew at 77% and 60% respectively. In 2017, the value-added per worker in the services sector and industrial sectors were 4 and 3.5 times more than that of agriculture. The large variation in productivity among the sectors signifies a large potential gain from structural transformation for Ethiopia in terms of productivity gain and hence long-term economic growth (Figure 4).

Figure 4. Value-added per worker in Thousands of Birr constant 2003 prices



Source: authors' computation from NBE and the World Bank's WDI

Ethiopia's industrialization: Constraints and Prospects

Ethiopia faces binding constraints that hinder its potential for industrialization. Some of the major constraints are discussed below.

- **Macroeconomic constraints**
  - Ethiopia has been experiencing severe balance of payments problems largely stemming from a weak external sector performance (IMF, 2020). But it also stems from a highly overvalued exchange rate and elevated external debt servicing needs. As a result, Ethiopia experiences a severe and persistent forex shortage and backlog. Such external sector vulnerabilities significantly undermine general (but especially investor) confidence. Furthermore, Ethiopia is experiencing persistently high inflation.

- **Structural transformation constraints**
  - First, Ethiopia's current industrial policy, whose excessive focus is on exports, tends to discourage production for the home market. Most consumer and light manufacturing enterprises are likely to focus on the domestic market at least in the initial stages of operation (Rodrik, 2008). Rodrik argues that production for the home market is no less valuable to the economy than production for foreign markets provided that foreign currency is priced correctly, and therefore recommends that governments encourage experimentation and investment by pioneer firms in manufacturing in the short to medium term without sheltering highly inefficient industries. Although Ethiopia encourages import substitution in some key industries, production for the domestic market is not largely covered by Ethiopia's current industrial policy.

  - Second, although Ethiopia puts the manufacturing sector at the center is its industrialization (NPC, 2015), its development has not been easy because the manufacturing sector suffers from coordination failure more than any other sector in the economy (Rodrik, 2004). Development of the manufacturing sector requires several and simultaneous interrelated investments that usually have high fixed costs. Although Ethiopia has been investing in infrastructure, it is still not enough to fully support and propel its industrialization.
  - Third, the lack of efficient transportation and logistics between Addis Ababa and Djibouti hinders the development of large-scale manufacturing. It takes a long time (about 42 days according to the WB) to transport big machinery and bulky products between Djibouti and Addis Ababa. Consequently, businesses incur unnecessary logistics costs, which dumps their competitiveness.

- Ethiopia's supply (generation) of electricity lags behind the growing demand. Consequently, a shortage of power and frequent power interruptions is quite common. This has significant pressure on Ethiopia's industrialization process. Investors wait 6 months to 1 year to get connected to a power grid (Assefa, B; Gebreeyesus, M; Weldeyes, F, 2018) before the introduction of industrial parks in Ethiopia. Now, this has been somehow alleviated through the industrial park scheme that is designed with their power substations. However, the power problem persists outside the industrial parks where the majority of enterprises exist.

- Poorly functioning backward linkages between industry (especially FDI) and local suppliers (and the wider economy in general). Ethiopia's industrial development strategy (as discussed in section 3) attaches great importance to the development of agro-industrial linkages and integrated industrial value chains. Despite this, Ethiopia's upstream (i.e., raw and intermediate materials) sector for most priority sectors remains highly underdeveloped (e.g., textile and apparel and leather sectors). An excessive emphasis has been placed on the garment and leather goods section of the value chains and such an approach simply assumed that if Ethiopia succeeds in attracting a large group of garment and leather goods enterprises, then this process will induce more production in the upper stream value chains (such as fabric, yarn, or semi/finished leather) (Assefa & Gebreeyesus, 2020). However, this did not happen in practice. This is a characteristic feature of many of Ethiopia's priority sectors and has remained the key constraint in creating strong supply linkages between FDI and local firms.

China's industrial development process and implications for Ethiopia

China's industrialization can be roughly divided into three stages (Xiaoyun, 2014).

- The first stage extends from 1953 to 1977 when China prioritized heavy industry (particularly the iron and steel industry) through public investment in medium and large enterprises. This period was termed as the great leap forward, and its overarching objective was to catch up with the developed world. However, the study indicated that the outcome was economic decline and imbalance.

- The second stage extends from 1978 to 1999 when China re-engineered its policy to a more balanced development approach, where agriculture and light manufacturing was added to the policy menu. This stage also encouraged the roles of the private sector.

- In the third stage (2000 onwards), China capitalized on the heavy industrialization that it started in stage one and took it to the highest level. It also added more knowledge-intensive sectors.

The second stage industrialization process seems quite relevant for Ethiopia. In the second stage, agricultural transformation through rural enterprises (China calls them township and village enterprises (TVEs)) and agricultural growth and the Special Economic Zones (SEZs) in selected strategic areas propelled Chinese industrialization. While China's rapid agricultural growth provided the Chinese economy initial capital and labor that are quite useful for industrialization, the SEZs focused on attracting large and FDI enterprises. This industrialization process resulted in a more balanced economic structure, more export, and massive employment. What useful lessons can Ethiopia draw from this? As discussed in section 4, Ethiopia's major struggles are particularly in two areas: ***structural transformation and export growth***. We think that China could offer some useful lessons in these two areas: rapid export growth, and structural transformation.

Implications and Lessons for Ethiopia's Industrialization

- **Lesson 1: Export**

Exports are critical to address the balance of payments problems Ethiopia currently faces and promote economic growth through (Helpman and Krugman 1985; Melitz 2003)

  - increased earnings of foreign exchange (thus relaxing balance of payments constraints),
  - economies of scale, and
  - industrial upgrading (through access to new technologies and knowledge)
  - accelerates productivity advances by placing firms under the discipline of export markets and by widening the contact with the developed world
  - Financing current account deficit more sustainably

China chiefly utilizes the SEZs and export processing zones to promote its exports. The zones are well-connected infrastructurally and have more autonomy on their management, operation, and financing systems that helps them to be competitive. On the other hand, Ethiopia hopes that much of its exports to come from the industrial parks. For example, Hawassa Industrial Park alone is expected to bring 1billion USD in export revenue when it operates at full capacity. However, much work remains to reach there. For example, Hawassa Industrial Park's export performance for the period 2017-18 is $20million. Compared to full capacity export, the current performance is about 2%. It is a similar story for the other industrial parks – e.g., the export performance of the Bole Lemi Industrial Park and Eastern Industrial Zone $32million and $14million, respectively.

The major explanation for this is the infrastructure deficit. Our review of Chinese industrial parks shows that the Chinese government used various financing sources – private, foreign, government, and joint ventures to raise the capital needed to build industrial parks and their infrastructures. For example, Shekou IP was successful in mobilizing diverse funding sources including foreign governments and commercial banks. A large chunk of the infrastructure expenditure was financed by foreign banks' loans, especially preferential loans from foreign export and import banks and loans from banks in Hong Kong. Since industrial park development requires huge upfront cost, which could be challenging for developing countries like Ethiopia to mobilize. As a result, industrial parks tend to lack sufficient connectivity and infrastructure to fully function and unleash their potential. This is one potential area that Ethiopian need to explore and the Chinese experience we have reviewed may offer some lessons.

The lesson from China on 'innovative park infrastructure financing' will require Ethiopia to make two important changes in its current policies and institutional arrangements:

- Ethiopia's Industrial Park Development Corporation (IPDC) keeps land banks, develops and operates public industrial parks. But in addition to developing and operating, according to the current IP proclamation, the IPDC also assumes a regulatory role. Its regulatory and land bank roles could potentially create a conflict of interest and render the business model of IPDC unclear. The business model of the IPDC needs to be strictly market-oriented where it develops and operates its Parks; invests individually or jointly with other domestic and international partners to boost its profitability. When the IPDC engages in market-oriented and profitable activities, it can generate income which can further be reinvested to develop more industrial parks and their infrastructures.

- Industrial parks are home to a diverse community of businesses, most of which tend to interact globally. Pursuant to this, it is clear that the park needs to have its own autonomous administrative model that can actively adapt to changing demands and conditions. This will have several benefits. First, granting adequate authority for the park administration to execute its management and operation improves efficiency. When Parks adopt autonomous administration, they can spare themselves from

potential inefficiencies at the macro (or country) level. Second, the Park will have a better standing in terms of access to finance. It can, for example, exploit its autonomy and flexibility to experiment with innovative and diverse ways of financing. This would help to add new and upgrade its infrastructures. It can easily mobilize external financial resources in the form of co-investments and loans. In this regard, China provided a great deal of power and responsibility to the individual zones who were able to decide policy for the zone at a local level to experiment, and this served as the key enabler to solve financial and other problems at the local level without taking time.

The second important explanation for weak exports is the exchange rate misalignment (overvaluation) problem. The overvaluation of the domestic currency has rendered the country's export performance/competitiveness weak. Ethiopia keeps making interval (spaced) devaluations but the misalignment problem remains intact. This calls for a more market-oriented solution. What lesson can China offer in this respect? China took a gradual approach to reform its exchange rate, taking into account the time needed to prepare for structural and financial reforms that are necessary conditions. In a developing country setting, it takes a long time for banks to acquire risk management expertise and build the necessary infrastructure for the new exchange rate regime. Some of the major lessons/experiences from China's forex policy particularly those that incentivize exports include

- With the implementation of a dual exchange rate; exporters allowed to convert their foreign currency at a favorable rate (2.80 versus 1.70 per dollar)
- Retention of a certain proportion of their foreign exchange earnings with higher proportion for exporters of high value-added products
- With sufficient forex reserve, China utilizes a policy of continuous and managed devaluations

- **Lesson 2: Dynamic domestic industrial capacity development through internalizing skills and technology**

Ethiopia primarily uses the industrial park program to attract foreign direct investment (FDI). Ethiopia considers FDI as one of the key avenues to technology transfer and local learning through backward linkages with local suppliers. FDI attraction to the country is, however, only a first step. There should be a genuine recognition that the mere presence of FDI in the economy does not automatically guarantee the promised benefits, particularly those related to technology and skills transfer through local linkages. The existing supplier linkage practices in the country might be characterized by a piecemeal or ad-hoc approach to linkages promotion. Instead, the government should establish a comprehensive 'supplier linkages program' involving a set of measures aimed at tackling constraints to inter-firm linkages at three levels: (i) the 'market level', addressing market failures that raise the cost of establishing inter-firm linkages; (ii) 'supply-side' interventions to improve firm-level productivity; and (iii) 'demand-side interventions, addressing constraints to foreign or large local enterprises to source inputs locally.

In China, industrial parks (Special Economic Zones) are established as a means to establish strong backward and forward linkages with the rest of the economy (Wong, K. Y., 1987). China's domestic linkage program also involves the provision of incentives for local firms from various parts of the country to invest in and around the SEZs, particularly those enterprises with better technology, management practices, and quality products (Wong, K. Y.; Chu, D. K., 1984). China utilizes the following learning & technological transfer mechanisms (Wong, K. Y., 1987):

- Technical cooperation (through contractual or incentivizing) with resident enterprises in which the foreign investor provides better equipment and components; and training for local personnel. This process creates an agglomeration of skill pools, knowledge and technology generation, diffusion, and innovation.
- Co-location - most Chinese SEZs are well plugged into existing local clusters. As a result, the SEZs and local clusters support each other through various business linkages.
- Joint ventures - Chinese SEZs also encourage joint ventures with local counterparts.

Learning from China, Ethiopia needs to leverage specialized policy tools and institutional setup for supplier linkage development in the country. To the best of our knowledge, there is no specialized institution to develop, manage, implement, and monitor linkage programs. Such a program can develop targeted interventions and initiatives to provide multifaceted support tools to addresses supply-side constraints such as quality and capacity problems and alleviates constraints to meeting international standards of local supplier firms. The capability gaps of local firms could be addressed through policies such as:

- Provision of corporate income tax incentives contingent on local sourcing (such as tax credits, reductions, deductions, capital allowances, etc). FDI firms do have the choice of sourcing locally versus relying on their foreign suppliers. Therefore, FDI firms that source locally and upgrade the quality of local suppliers through training and technology transfers should be rewarded. Such rewards can come in the form of corporate income tax incentives.
- Provision of matching grants and cost-sharing schemes in support of local firm upgrading. Supporting local suppliers through training services and technology upgrades is an expensive business for private firms. The costs of upgrading local suppliers cannot be fully recovered by FDI enterprises as local upgrading has a public good nature, hence the government needs to come in by sharing the cost of local upgrading.

- **Lesson 3: Agricultural development is essential for industrialization**

In the short run, improving agricultural productivity is imperative for Ethiopia's industrialization. Initial capital and labour that are necessary for industrialization come from agricultural development. Ethiopia's agriculture has shown some growth over the past 15 years but growth was largely driven by the expansion of arable land rather than an increase in productivity (Kuma et al., 2021). Consequently, Ethiopia's agricultural

sector does not supply sufficient food (reflected in high food inflation, which is above 20%) and there is very little labor movement out of agriculture according to the national labor force survey data. There is also a limited linkage between the agricultural sector and the industrial sector.

All in all, the limited growth in agricultural productivity led to high wages (hence less industrial) competitiveness, limited labour supply, and limited linkages. For example, many of Ethiopia's priority sectors (targeted by the industrial policy) are import-dependent (Assefa & Gebreeyesus, 2020). Since the 1978 reform, China's agricultural sector went through massive rural transformation and provided the industrial (urban) sector sufficient food, initial capital (through exports), agricultural inputs, and labour. The fact that agriculture was able to provide these crucial foundations helped China for its unimpeded industrialization at lower wages and lower food prices. For instance, from 1985-1994, more than 70 billion $US had been taken from agriculture through agricultural taxes and fees; and around 70 million rural laborers moved to non-agricultural sectors in the form of capital and labour (Xiaoyun, 2014). Likewise, China's agricultural growth helped keep food prices low, thus keeping wages very low for a long time, which eventually helped China unlock its comparative advantages in the labor-intensive manufacturing sector. In this regard, China's agricultural modernization could provide a significant lesson for Ethiopia.

China's agricultural transformation – major achievements	Lessons for Ethiopia
1. Primary focus on staple food production	This was enabled by land reforms (including consolidation), and massive investments in water infrastructure and technology. Ethiopia: Ethiopia gives a primary focus on staple foods. But it has a long way to go. Rural infrastructures need to be significantly improved. Land consolidation is also important for the effective adoption of technology.
2. Agricultural diversification	The addition of high-value crops (such as horticulture) through market reforms and road connectivity. Ethiopia: Ethiopia has little diversification into high-value crops although there is significant potential. Rural road connectivity and markets are crucial in this regard.
3. Rural non-farm economic activities	China has seen a significant rise in rural non-farm activities. In 1980, only 4% worked full time off the farm. This increased to 72% in 2012. The major driver for this was the local SMEs policy in rural China; and the development of labor and land rental markets. Ethiopia: Ethiopia has an urban SME policy but not a rural SME policy. Rural non-farm activities are almost non-existent. Labor and land rental markets are underdeveloped.
4. Agri. mechanization and more off-farm job	Major policy drivers include mechanization and land consolidation. Ethiopia:

	Land is fragmented and makes it difficult to apply mechanization and other technologies that require scale. Mechanization and land consolidation process in China are good lessons for Ethiopia. Especially, encouraging farmers to expand farm size through rental market and other mechanisms.

Sources: Adapted from (Huang, J.; Rozelle, S., 2018; Huang, J.; Ding, J., 2016; Huang & Rozelle, 1996)

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