



Background Paper No. 1

The Role of Industry Parks in the Local Economy: The Case of Small and Medium Enterprises (SMEs) in Ethiopia

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Executive Summary

In recent years, Ethiopia has tried to undertake an industrial policy to emerge as a manufacturing hub. Central to this strategy has been the operationalizing of multiple industrial parks post 2014. The study accordingly asks four key questions: What is the pattern of industrial policy in Ethiopia overtime? What is the role of industry park to the local economy, mainly performance of SMEs? What is the implication of political economy on the performance of industry parks in Ethiopia? What are the lessons on industry park to be drawn from best practices of Asian countries?

The study has several key findings. In Ethiopia, manufacturing in general is lagging in terms of value added and value added per-capita compared to other sectors and has not been a strong performer despite some successes. There are many reasons for this, including limited access to finance and raw materials, market demand constraint, poor logistics, quality constraint, skills constraint, forex restrictions, and regulations. The public industrial parks in the country with a major focus on textile and garment have revealed mixed performance in terms of output and employment. The parks have varied occupancy rates depending on management and location, with those closer to bigger cities performing better.

Industrial Park intervention, labor, capital, and technical change explain manufacturing growth in Ethiopia. This result has been found based on an empirical assessment of industry park effect on the performance of local manufacturing enterprises in the country, using a panel data set of 15 industrial groups for 24 years spanning from 1996 to 2019. Results reveal the pattern of employment and production of apparel, textiles, and garments after the introduction of Industry Park has increased. However, results show no evidence on the extent of industry parks impact in terms of technology transfer, knowledge transfer and value chain contribution to the local enterprises.

The performance of manufacturing firms in Ethiopia being influenced by the political institution is another major finding. Based on the empirical result, the polity2 index coefficient is found to be statistically significant and negative in affecting manufacturing performance. This implies only conducive political environment can enhance manufacturing enterprise performance in the case of Ethiopia. The key implications here are to create a SME-focused industrial park, relocate local SMEs on idle industry parks, develop private sector training for SME, and to create more favorable financing for SMEs alongside creating conducive political economy environment for investment.

Ultimately, the benchmarking analysis shows that Ethiopia lags East Asian successes. Lesson factors are identified from the Asian best practice which include assuring the establishment of strong linkages and spillovers of SEZs with local SMEs through policy intervention; introducing innovative cluster policy by government; establishing strong partnership with research centers, large local as well as FDI firms, universities and local SMEs; providing reliable infrastructure, creating conducive political and business environment; integrating SEZs into national development strategies; selective approach to trade openness, FDI and exchange rate management; consistent performance follow up; joint venture arrangement to effectively transfer technology and knowledge from FDI firms; creating national champions and global brands alongside sustained monitoring and evaluation.

Introduction

A. Background

Industrialization is essential element of growth and has an important role for poverty reduction and sustaining prosperous future (Kniivilä, 2007). The pursuit for industrialization is regarded as the most feasible option for structural transformation (UNDP, 2017). Likewise, industrial parks are a fundamental industrialization strategy that have a significant contribution in boosting economic output, absorbing scientific and technological progress, creates conducive platform for openness to outside world, economic experiment, and demonstration effects, induces local and global value chain, ecological preservation, and environmental protection (UNIDO and CAITEC, 2019; UNIDO, 2019; Xueyi & Meyer, 2011).

Inclusive and sustainable industrialization that supports poverty eradication is one major pillar recognized by the 2030 Agenda for sustainable development (UNIDO, 2019). Yet, industrial parks are considered as a catalyst to facilitate industrial development with its overarching objectives. In Asian countries like China, the republic of Korea, Indonesia, and Taiwan industrialization has played key role by promoting growth and decreasing poverty rates though the level of contribution varies across the countries (Kniivilä, 2007).

In developing countries on the other hand, premature deindustrialization with a decreasing and steady manufacturing as a share of GDP has become increasingly noticeable fact (UNIDO, 2019). Likewise, in Ethiopia industrialization over the decades has been low with less than 5 percent manufacturing as a share of GDP, on average (WDI, 2022).

Still, there is mixed empirical evidence on the socio-economic impact of industry parks to countries local economy in terms of promoting trade, innovation, employment opportunities (Rodríguez-Pose, 2014) export, knowledge, and technology transfer (Gebeyehu, 2017). In Asia, industry parks have been a success story mainly attributed to multiple factors such as commitment of government leadership, focused legal and regulatory framework, favorable location advantage, duty free raw material imports, updated and modern technologies, export tax exemptions, tax breaks, strong local manufacturing firms' absorptive capacity, skilled labor, strong public private partnership, political goodwill, and heavy infrastructure investment (Kihiko, 2018).

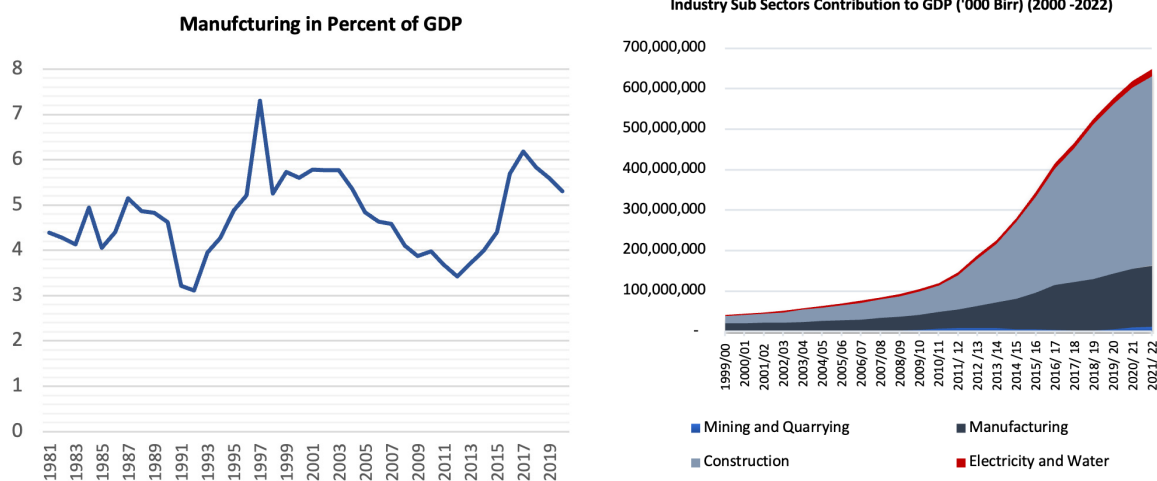
Industry Parks in East Asia have also played a key role in attracting investment, transferring technology, promoting export-led growth, economic diversification, industrial development, and structural transformation (Tesfachew, 2021). Likewise, China has been a success story on its special economic zones mainly explained by strategic locations, strong linkage with the local economy, long-term government commitment, technology upgrading, conducive business environment in the zones despite the constraint of environmental degradation to some extent (Zeng, 2015).

In Sub-Saharan Africa, the experience of industrial parks towards their socioeconomic contribution is extremely attributed to high degree of failure (Kihiko, 2018). Except for Mauritius, economic zones in Sub-Sharan African countries have been performing poor due to factors such as weak governance, weak implementation capacity, inadequate infrastructure, poor institutional and regulatory framework, lack of effective strategic planning and others (Zeng, 2015;2016).

In Ethiopia, industry parks have been operating since 2014 with mixed pattern in terms of its socio-economic contribution. It has been contributing to export promotion and employment generation though constrained with low linkage to the wider economy, unfocused clustering and spatially discrete, unaffordability of imported raw materials, delay on logistic services, foreign exchange shortage, raw material shortage, government bureaucracies and others (Gebeyehu, 2017; Giannecchini, 2018). The country even remains heavily dependent on imports of substantial amounts of semi processed and processed manufacturing food products that could potentially be produced by local SMEs (Brascesco et al., 2019).

The manufacturing trend for the last four decades in Ethiopia is depicted in figure 1 and 2, with a less than 6 percent average manufacturing contribution as a share of GDP. Based on figure 2, increase in the value added of industry sector is largely attributed to boom in the construction sub-sector in the past decades while the manufacturing has shown only a minimal increase. This raises a big empirical question on whether industrialization in real terms has been increasing or we have low industrialization or a premature deindustrialization pattern in the country.

Figure 1 and 2: Percentage Share of Manufacturing to GDP and Percentage Share of Industry to GDP



Source: WDI, 2022

Source: MPD, National Accounts Statistics

This study therefore intends to comprehend the existing performance of manufacturing enterprises in relation to Ethiopia’s industrial park strategy, patterns of industrial policies overtime, association between industry parks and the local economy mainly focusing on SMEs. It explores how SMEs in the country has been benefited or affected by the industry park strategy in the country. The study will also explore the Asian countries experience in terms of their IPs success factors, role of political institution on their respective industry parks as well as the pattern of their industrial policy. Ultimately, lessons will be drawn from the best practice of Asian countries followed by policy implications.

B. Rationale and Research Questions

This research is mainly expected to give insight on the impact of industry parks on local SMEs performance in Ethiopia. Also, it will indicate how the political economy affects the effectiveness of industry park strategies. Generally, this research empirically investigates the general question on how effective does the industry park strategy works in Ethiopia? Yet specifically it has the following research questions:

- ▶ What is the pattern of industrial policy in Ethiopia overtime?
- ▶ What is the role of industry park to the local economy, mainly performance of SMEs?
- ▶ What is the effect of political economy on the performance of industry parks in Ethiopia?
- ▶ What are the lessons on industry park to be drawn from best practices of Asian countries?

C. Data and Methodology

This study used both primary and secondary data to address the research questions. The primary data have been collected using personal observation, Focus Group Discussion (FGD) and key informant interview (KII) instruments. Yet, secondary data is gathered from Ethiopian Statistics Service (ESS), Industry Park Development Corporation (IPDC), Ethiopian Investment Commissions (EIC), Ministry of Trade (MoT), Ministry of Industry (Mol), Ethiopian Customs Authority (ECA), Bole Lemi Industry Park and Hawassa Industry Park.

A mixed approach of explorative and econometric analysis has been pursued to address the research questions. To empirically assess the role of industry parks on the local economy in Ethiopia, panel data

from ESS¹ on medium and large manufacturing survey data has been used. The panel data had been estimated using static and dynamic estimation strategies. Comparison has been made across different approaches (Fixed Effect (FE), Random Effect (RE), General Least Square (GLS) and Generalized Method of Moments (GMM) to assure consistency of the estimated coefficients across alternative methods. Yet, to address the dynamic element GMM estimation results are reported. All diagnostic tests are conducted to check robustness of results.

D. Organization of the Study

This study has six sections in addition to the introduction part briefly discussed above. The first section depicted conceptual framework which is used to measure and evaluate the performance of industry parks in Ethiopia and their role on the local economy. The second section presents the context analysis of industry parks in Ethiopia followed by the third section which presents overview of SMEs in Ethiopia with their respective challenges. Section fourth presents panel analysis showing the role of industry parks on the performance of local firms in Ethiopia. The fifth section discusses the benchmarking analysis of global best practices while section six concludes and gives policy implications based on the findings.

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1 Based on Ethiopian Statistics Service, manufacturing establishments are divided into three groups as:

- i. Large and Medium Scale Manufacturing Establishments, engaging 10 or more persons and using power -driven machines.
- ii. Small-Scale Manufacturing Establishments engaging less than 10 persons and use power -driven machines.
- iii. Cottage hand craft Manufacturing Establishments performing their activities by hand (i.e., using non -power driven machine.

1. Industry Park and the Local Economy

A. Overview: Terms and Concepts

Special economic zones (SEZ) are defined differently but in general terms it denotes a geographically demarcated areas within a country following different business rules, investment conditions, taxation laws, international trade and customs and regulatory environment different than prevailed elsewhere (Farole and Akinci, 2011; Kebede, 2020). Special economic zones basically include industry parks, export processing zones, free trade zones, economic and technology development zones, science and technology parks, high tech zones, enterprise zones, free ports and others (Zeng, 2016).

Industry parks (IPs) denote a concentrated set of firms operating in a demarcated infrastructure platform or it represents a provision of common infrastructure to a group of firms in a demarcated area (Saleman, & Jordan, 2015). Concentration of firms in this case provides significant spillover effect within and outside the park which include knowledge and technology spillover, information spillover, specialization, and division of labor among firms, market development, development of skilled labor market and others (Saleman, & Jordan, 2015).

IPs are key to stimulate economic development of countries by attracting foreign direct investment (FDI) and local investors, enhancing competitiveness, strengthening value chain, increasing job opportunities, facilitating export led growth and enterprise performance through their opportunity for knowledge and technology spillovers (World Bank, 2010). Industry parks also create different advantages for investors relative to what they enjoy in local economy which include infrastructure such as serviced land, utilities, factory shades that are easier to access and more reliable; special customs regimes with efficient customs administration and access to imported inputs free of tariffs and duties; attractive fiscal regime which include elimination or reduction of VAT, corporate tax and others and improved administrative and regulatory regimes (Farole and Moberg, 2014).

To effectually support industrialization and structural transformation in developing countries and middle-income countries inclusive and sustainable industrial parks are vital as they address business infrastructure challenges in particular geographical areas, overcomes investment barriers, generates high productivity, stimulates innovation and can foster social inclusion alongside environmental protection (UNIDO and CAITEC, 2019). In fact, industry parks or special economic zones can only be effective to promote structural transformation and industrialization if and only if implemented properly in the right context (Zeng, 2016). The main features or context for successful implementation of SEZ or IPs include strong linkage with the local economy, sound physical infrastructure, separate and efficient customs provision, clear goals, vigorous benchmarking and competition, strong vision and commitment from political and managerial leaders, pragmatism, autonomy and flexibility of governors, incentive structure, lack of political interference, attractive structure for FDI and others (World Bank, 2017).

B. Conceptual Framework

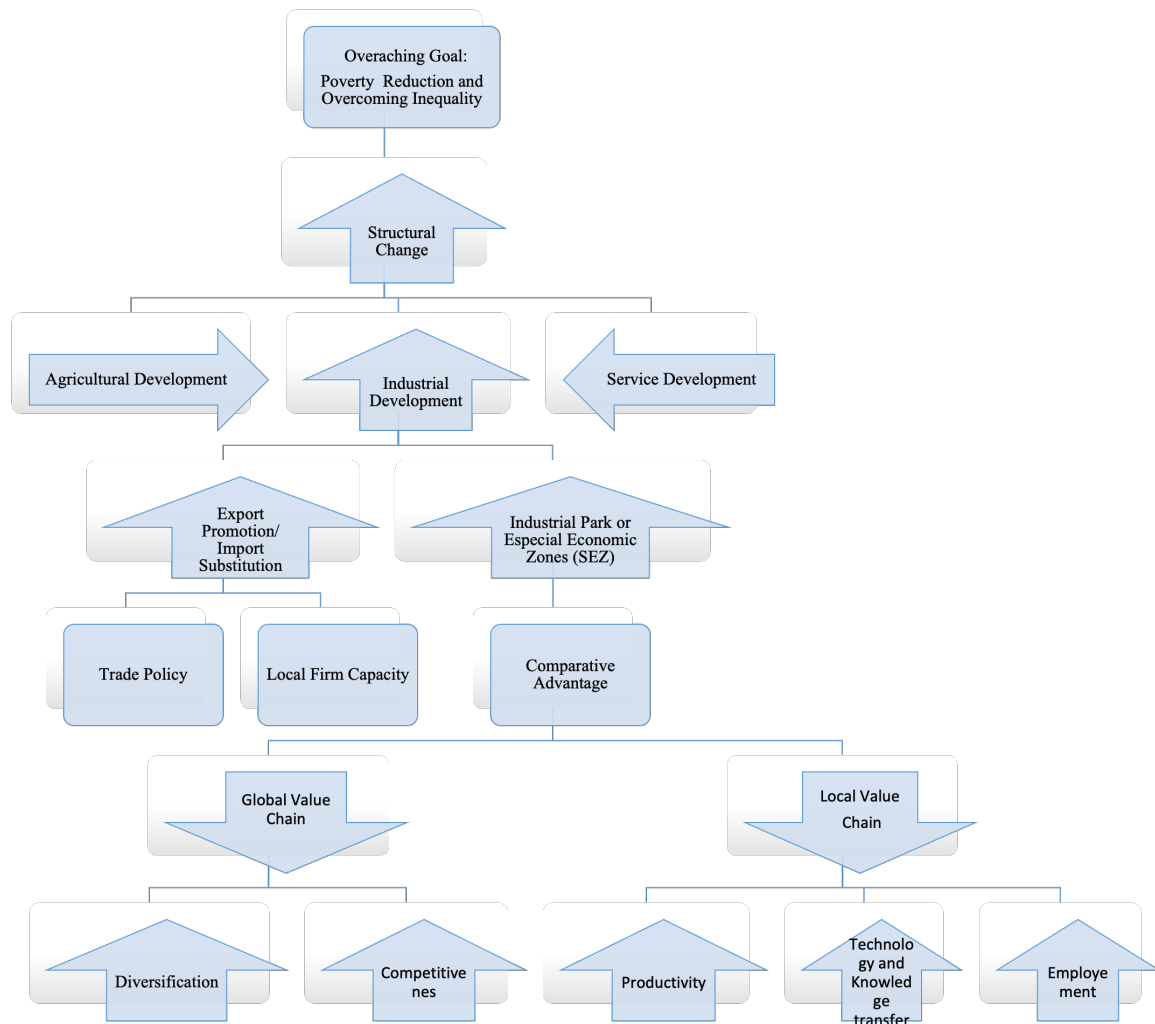
The sustainable development goals (SDGs) recognize sustainable industrialization and infrastructure for inclusive growth towards eradicating poverty. In a related note, developing countries reveal a noticeable pattern of a premature deindustrialization with manufacturing having a steady and decreasing share of their respective gross domestic product (UNIDO, 2019). In this regard, industrial parks are regarded to act as a catalyst to facilitate industrial development through their contribution to the rest of the economy and promoting socially and environmentally responsible processes (UNIDO, 2019).

Establishing a reference framework against which we can measure the performance of industry parks using indicators is therefore very demanding to investigate their respective impact on industry and

the overall economy. In general terms, industry park indicators can be classified in to economic, social, and environmental indicators. The economic indicators mainly include competitiveness, economic governance, enabling infrastructure while the social indicators include social inclusiveness, occupational health and safety, labor relation and welfare, quality social service management. The environmental indicator mainly focuses on environmentally appropriate cite, green infrastructure, green systems, emission and waste management, efficient and clean production (UNIDO,2019).

Figure 3 below presents how industrial development will have a role on poverty reduction and overcoming inequality through structural transformation which mainly be catalyzed by industrial transformations (Rodrik, 2013; 2014). The literature depicts the fact that industrialization can take place through different strategies such as export promotion, import substitution, industry park development or special economic zones. Successful industrialization mainly requires contextualized industrial policy, local firms' capacity, exploiting comparative advantage, competitiveness, and diversification which this creates a conducive platform for firms to integrate in a global market and induces local supply chain as well (Chang, 2002; Rodrik, 2016; Syrquin, and Chenery,1989). Yet, from public policy perspective promoting industrial parks is derived from the industrial policies that seeks to induce industrial transformation, competitiveness, diversification, and sustainable inclusive economies that brings structural change by correcting market failures (Syrquin, 2010; UNIDO, 2019).

Figure 3: Conceptual Framework of Industry Park Development for Industrialization



Source: Own Representation, 2022

Global value chain (GVC) represents the fragmentation of production activities across countries at which participation can be forward (export raw materials and components), backward (export finished good or import to export) or both (World Bank, 2019). Based on figure 4 below, the global value chain has expected outcomes and driver factors. The global value chain is expected to promote growth,

employment, environment protection, poverty, and inequality reduction. Yet, there are many factors that determine the value chain globally which include endowments, policies (Trade, openness and foreign exchange polices), institutions, geography, and market size (WB, 2019)

Figure 4: Conceptual Framework for Global Value Chains



Source: Own Representation, 2022

2. Industry Park Context in Ethiopia

Being the second most populous country in Africa, Ethiopia aspires to reach lower middle- income status (Ferede and Kebede, 2015). Yet, attaining the goal requires sustaining high growth and deepening structural change by shifting economic activities from low productivity to high productivity sectors especially to the manufacturing sector (UNDP, 2017). Industrial policy being a key for pursuing industrialization process, Ethiopia has implemented different policy strategies such as import substitution, export promotion and recently industry park to induce production, export, employment, linkage, technology, and knowledge transfer (Gebreeyesus, 2016; Kebede and Heshmati, 2020).

Despite the different efforts in terms of policy in Ethiopia, manufacturing as a share of GDP still has never exceeded 5 percent on average (Kebede, 2020; Kebede and Heshmati, 2020). Manufacturing in Ethiopia is far from structural change and being an engine for economic growth as it plays a marginalized role in production, export, intersectoral linkage and employment (Oqubay, 2018). This low contribution of manufacturing can be explained by several factors such as limited energy infrastructure, coordination and policy implementation failure, unfavorable incentive structure for local and foreign firms, inadequate sectoral linkage, limited source of finance and other factors (Ferede and Kebede, 2015; Oqubay, 2018; Gebreeyesus, 2016; Kebede and Heshmati, 2020). Yet, empirical evidence on the role of industry parks on Ethiopian local economy is scantily available. This study therefore focuses on examining the association between the latest industrial park strategy in Ethiopia with the local small and medium enterprises in terms of production and raw material linkage.

A. Overview of Industrial Policy in Ethiopia

Industrial policy is critical for the transition of societies from low productivity informal sectors to more productive, formal, and knowledge-based pattern of productive activities (Altenburg, 2010). Since the end of 19th century, Ethiopia has been striving to transform the structure of its economy with the emergence of modern manufacturing in the 1920s and 25 factories being set up by foreigners in 1927 (Fenta, 2014). In Ethiopia, successive governments had pursued their own respective industrial policy while the Imperial régime that runs from 1930-to 1974 formulated three consecutive five years development plans addressing the need for development of industrial sector, the Derg regime from 1974 to 1991 followed socialism with production of large-scale goods entirely being state owned and lately delivered ten years prospective plan with a little room for private sector engagement (Mulu,2013; Fenta, 2014; Kebede, 2020).

During EPDRF which is post 1991, Agricultural Development Led industrialization (ADLI) was guiding economic principle that allows private sector participation (Mulu, 2013). The design of comprehensive and full-fledged strategy with structural transformation in mind has been introduced in Ethiopia in 2003 as Industrial Development Strategy (IDS) (Kenichi, 2009; Tegenu,2011). IDS mainly aims at bringing structural change to the economy via industrial development. It specifically targets the share of industry to increase from 13 percent to 27 percent and induce manufacturing sector share contribution from 4 percent to 17 percent by the year 2025 (MOI, 2013). Yet, IDS targets to ensure manufacturing industry to be the main driver of growth that accelerates structural transformation by being source of export earnings, productivity, medium of technological transfer, as source of employment and to create technological capacity (UNDP, 2017).

Industrialization process in increasing number of countries have been supported by Industrial parks since the 1960s which contributed to their respective economic restructuring (UNIDO and CAITEC, 2019). Accordingly, Ethiopia with a vision of making the country a leading manufacturing hub in Africa by 2025, industry park development, implementation and expansion has become as its recent industrialization strategy (EIC, 2017). The major purpose of industry parks in Ethiopia is to improve sustainability and resilience of economic growth; to enhance contribution of manufacturing to national economy; to alleviate foreign exchange shortages; to stimulate stagnant exports and foreign direct investment; to reduce borrowing funded government and SOE investment and to transfer the lead of growth from public to private sector (Zhang et al., 2018).

B. Industry Pattern in Ethiopia

In Ethiopia, manufacturing consists of small and cottage industry alongside large and medium scale industries. However, manufacturing in general is lagging in terms of value added and value added per-capita compared to other sectors (Ferede and Kebede, 2015; Kebede, 2020). In figure 5 below, it shows the share of economic sectors in Ethiopia. In the early period, agriculture has been dominating followed by service and industry economic activities, respectively. Yet, manufacturing has revealed a steady share throughout the years indicating deindustrialization pattern over the years. Recently, the service sector has been coming front alongside agriculture without notable change in the manufacturing sector. From the employment side as indicated in fig 6, agriculture takes the lion share on average as more than 70 percent being employed in this sector followed by service and industry sector. Thus, both figures reveal that the economy has been dominated by agriculture in terms of economic activity and employment followed by the service sector with low contribution of industry in both cases.

Figure 5: Sector Share in Ethiopia

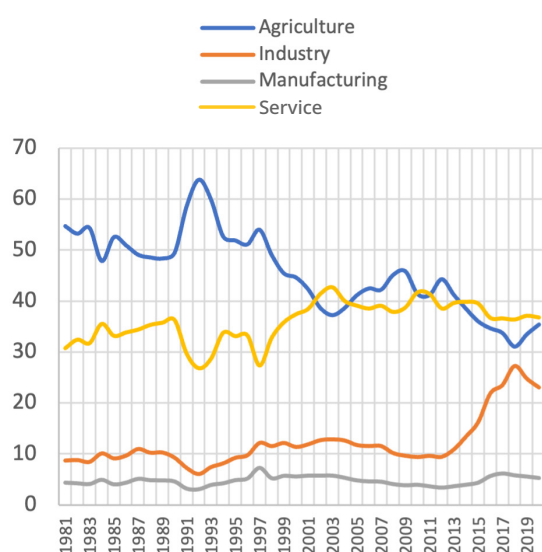
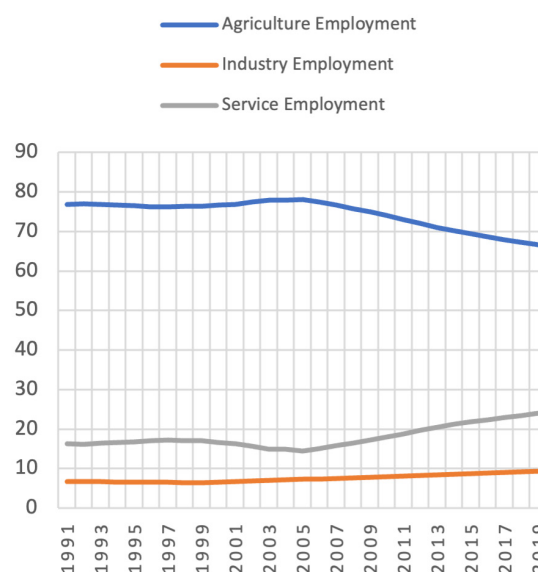


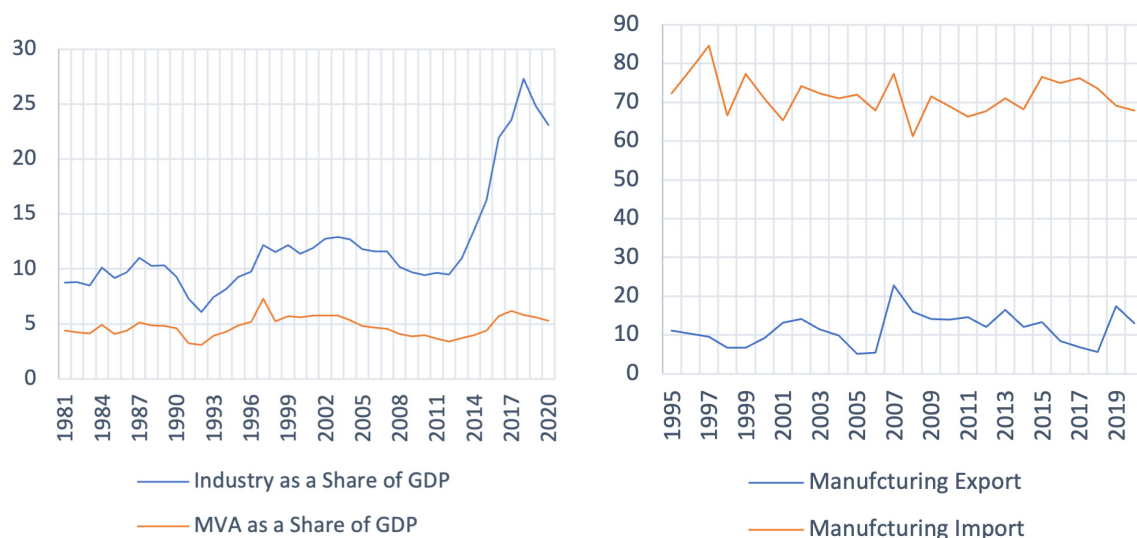
Figure 6: Sector Employment in Ethiopia



Source: WDI Database

Figure 7 below compares the pattern of aggregate industry sector that consists construction with the manufacturing sector. As indicated below, industry as a share of GDP has revealed an upward trend very recently which can be attributed to the boom in other industries than manufacturing. This is because the pattern of manufacturing overtime has never exceeded 5 percent on average for several decades which demands deep empirical investigation of why from different angles. Besides, figure 8 compares the manufacturing export and import share of total merchandise and reveals very wide gap with massive manufacturing trade deficit in Ethiopia overtime.

Figure 7: Manufacturing Pattern in Ethiopia Figure 8: Manufacturing Import and Export Trade Share



Source:WDI Database

C. Industry Park Context in Ethiopia

Industrial parks are essentially established to act as catalyst for investment, trade, employment, linkage, and wider economic growth by mainly focusing on improving competitiveness to facilitate transformation (Azmach, 2019). Ethiopia has not achieved structural transformation due to several factors such as lack of foreign exchange rate, capital, knowledge, infrastructure, inefficient institutional constraints etc. The country recently pursued industrial park as policy instrument to enhance transformation through promoting technological learning, attracting foreign investment, forming linkage with the rest of the economy, creating decent employment and so forth (Weldesilassie et al., 2017).

Table 1 below presents industry park establishments in Ethiopia with respective total area allotted for the park, number of sheds and sector of engagement. There are 13 public industrial parks in the country with major focus on textile and garment. Hawassa Industry Park has the largest number of shades following Bole-Lemi I industry park. The major sector in the parks is dominated by Textile and Garment. Yet, leather product, Agro-processing, pharmaceutical and ICT sectors are rarely located in the few parks in Ethiopia (See Table 1).

Table 1: Industry Park Establishment in Ethiopia

No	Name of Industrial Park	Total Area (land in hectare)	Number of Shades	Major sector
1	Bole-Lemi I	156	20	Textile & Garment
2	Hawassa	140	52	Textile & Garment
3	Kombolcha	75	9	Textile & Garment
4	Mekelle	75	15	Textile & Garment
5	Adama	120	19	Textile & Garment
6	Dire Dawa	150	15	Textile & Garment
7	Debre-Brhan	75	9	Textile & Garment
8	Jimma	75	9	Textile & Garment
9	Bahr-Dar	75	8	Textile & Garment
10	Semera	50	8	Multi
11	AIV	10	8	Textile, Garment & Leather Products

No	Name of Industrial Park	Total Area (land in hectare)	Number of Shades	Major sector
12	Bole Lemi II	171	2	Textile, Garment & Agro-Process
12	ICT park	200	6	ICT
13	Kilinto	280	-	Pharmaceutical

Source: IPDC

The capital investment and source of finance for the industry parks in Ethiopia is presented in Table 2 below. The capital investment is presented in both local currency and USD. Hawassa Industry Park is the most expensive investment made to establish the project and compile the required infrastructure to make it operational for the production process (see Table 2). Yet, it is the early operational and largest park as presented in table 1. Then, Dire Dawa, Bole-Lemi and Adama have the next huge capital investment cost, respectively. Mekele, Jimma and Bahir Dar industry parks follows through with relatively considerable capital investment cost followed by the remaining parks described on the table. Besides, the major source of financing for the parks investment is emanated from Sheba Bond (Euro Bond), Treasury, and IDF (see table 2). This capital investment cost had 10 years maturity period with annual interest payment. This implies the parks are expected to be productive enough to contribute in terms of production, employment, export, foreign exchange generation and linkage in order to settle the fund plus interest used to finance the industry parks.

Table 2: Investment Cost of Industry Parks

Capital Investment of Industry Parks				
No	Industry Parks	Local Currency (Birr)	In USD	Source of Fund
1	Hawassa	5,225,143,484.29	242,441,740.00	Sheba Bond
2	Kombolcha	1,969,415,212.50	90,425,348.00	Sheba Bond
3	Mekelle	1,960,423,978.84	86,026,602.00	Sheba Bond
4	Adama	2,925,109,810.80	118,992,821.00	Sheba Bond
5	Dire Dawa	3,235,297,067.73	136,600,357.00	Sheba Bond
6	Debre-Brhan	1,102,963,796.91	35,420,000.00	Sheba Bond
7	Jimma	1,499,744,291.10	60,782,655.84	Treasury
8	Bahir Dar	1,532,473,438.07	55,063,384.58	Treasury
9	Debre-Brhan	986,339,181.38	33,957,797.31	Treasury
10	Hawassa Shed 15	1,850,372,568.57	60,206,974.91	Treasury
11	Semera	579,469,429.53	15,081,573.34	Treasury
12	ICT park	260,873,460.22	-	Treasury
13	AIV	-	-	Treasury
14	Bole Lemi-I	2,384,920,667.94	-	IDF
15	Bole Lemi-2	-	-	
16	Kilinto	-	-	
Total		25,512,546,387.88	934,999,253.98USD	

Source: IPDC, 2022

Based on data from IPDC, table 3 presents the location of the industries across Ethiopia and their respective year of operation. The industry parks in Ethiopia are located in the Northern, Southern, Eastern, Western and Central part of Ethiopia indicating more focused on equity in terms of industry park distribution in the country. Regarding with, year of operation, the parks have started operation in different time periods. Except for AIV, the Bole Lemi I and Hawassa industry parks are the earliest operational industry parks in Ethiopia while Semera being the latest being operational industry park in Ethiopia (see table 3).

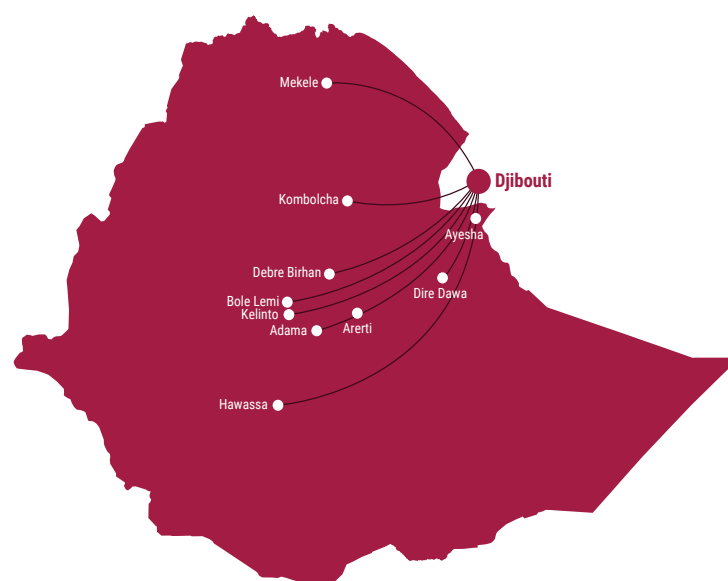
Table 3: Location and Year of Operation of Industry Parks in Ethiopia

No	Name of Industrial Park	Location (cities)	Year of Operation (G/C)
1	Bole-Lemi (I & II)	Addis Ababa	2014
2	Hawassa	Hawassa	2016
3	Kombolcha	Kombolcha (S/Wollo}	2017
4	Mekelle	Mekelle	2017
5	Adama	Adama	2018
6	Dire Dawa	Dire Dawa	2019
7	Debre-Brhan	Debre-Brhan	2019
8	Jimma	Jimma	2019
9	Bahr-Dar	Bahr-Dar	2020
10	Semera	Semera	2021
11	AIV	Addis Ababa	1989
12	ICT park	Serviced land (Addis Ababa)	2015
13	Kilinto	Serviced land (Addis Ababa)	2019

Source: IPDC 2022

The key factors that determine successful implementation of Industry Park operation includes policy reference, governance system, linkage to the rest of the economy, investment flow, effective knowledge and technology transfer (Weldesilassie et al., 2017; Zhang, 2018). Yet, strategic location of industry parks in terms of proximity to ports or convenient transport has a major success implication (Zhang, 2018; Gebrewolde, 2019). Figure 9 below depicts how each industry parks in Ethiopia are located from Djibouti port, which is/was the only and one port access for export of all the parks besides the Ethiopian Airlines Cargo transport. As strategic location has core implication on successful implementation of industry park operation towards contributing to global value chain alongside promotion of export, this will have its own implication in the case of Ethiopia in terms of limiting on time delivery of products to the buyers compared to the other counterpart competitive industry parks outside Ethiopia mainly Asian counterparts. This is because industrial park placement in Ethiopia among other factors is related with political decision than successful implementation of parks based on their respective strategic location requirements.

Figure 9: Location of Parks from Destination Departure Port

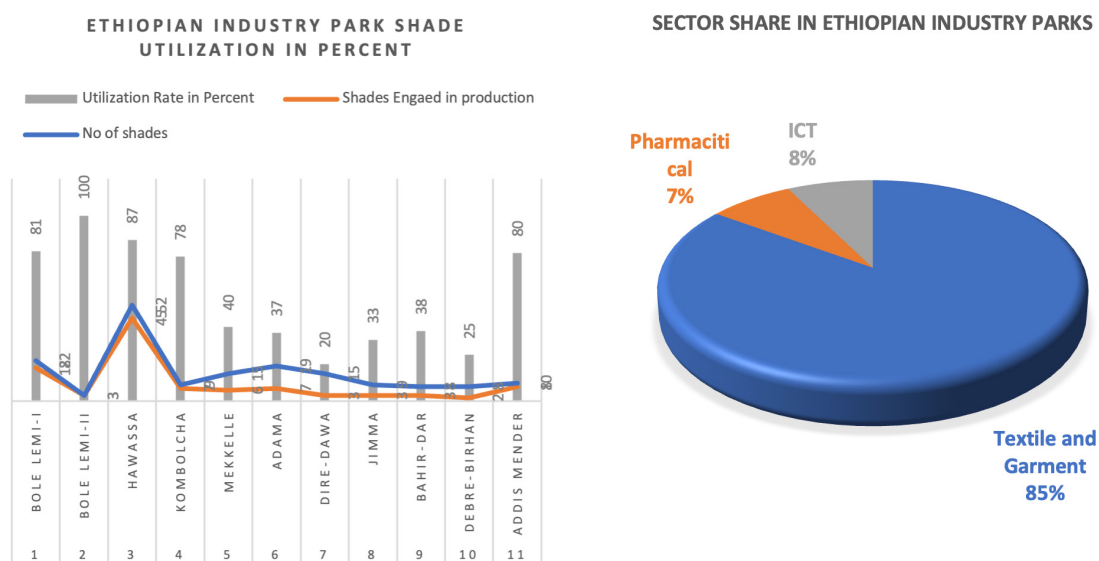


The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Map Creation date: 23 August 2023 Map Sources: OCHA

Source: UNCTAD, 2022

Figure 10 below presents the composition of sectors in Ethiopia Industry Parks. It is revealed that the parks are dominated by Textile and Garment production taking 85 percent on average. Yet, though not significantly huge there is also the pharmaceutical and ICT sector taking 7 and 8 percent share respectively. Comparing to the competitive advantage of the country in agriculture, leather production the sector composition misses to diversify in terms of including agro-processing and intensive leather production and export. The full utilization of industry parks has huge implication on its static and dynamic economic contribution (Asfaw, 2019; Farole, 2011; Yuan & Eden, 1992; Zeng, 2015). As it is depicted in figure 11 below the utilization of industry parks across the country varies significantly with being few have been utilized moderately (Bole Lemi I, Bole Lemi II and Hawassa) but most parks (Adama, Mekelle, Jimma, Bahirdar, Dire Dawa and Debre Birhan) are being underutilized indicating inefficient industry parks utilization across the country.

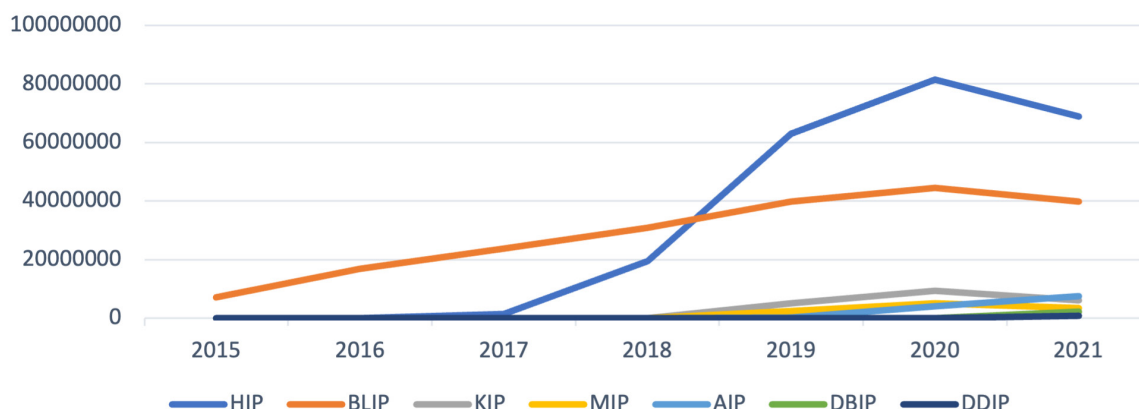
Figure 10 and 11: Ethiopian Industry Park Utilization and Sector Composition



Source: IPDC 2022

Figure 12 below shows the industry park export overtime in Ethiopia. As indicated in the figure, export across industry parks in Ethiopia varies. The pattern of export for Hawassa and Bole-Lemi industry parks has significant share relative to other parks with an upward trend overtime. Yet, other parks such as Kilinto, Adama, Debre Birhan and Dire Dawa also contribute to the export but relatively small share with steady trend. This indicates, different capacity of parks in terms of export promotion in Ethiopia (See fig 12).

Figure 12: Ethiopian Industry Parks Export Overtime in USD



Source: IPDC

To clearly understand the export contribution of Industry parks in Ethiopia the share of total export of the parks to total export² of Ethiopia has been calculated explicitly being revealed in table 4 below. Compared to total export in the country, the percentage share of Industry Parks export in Ethiopia is found to be significantly small, which is not more than 1.5 percent, on average.

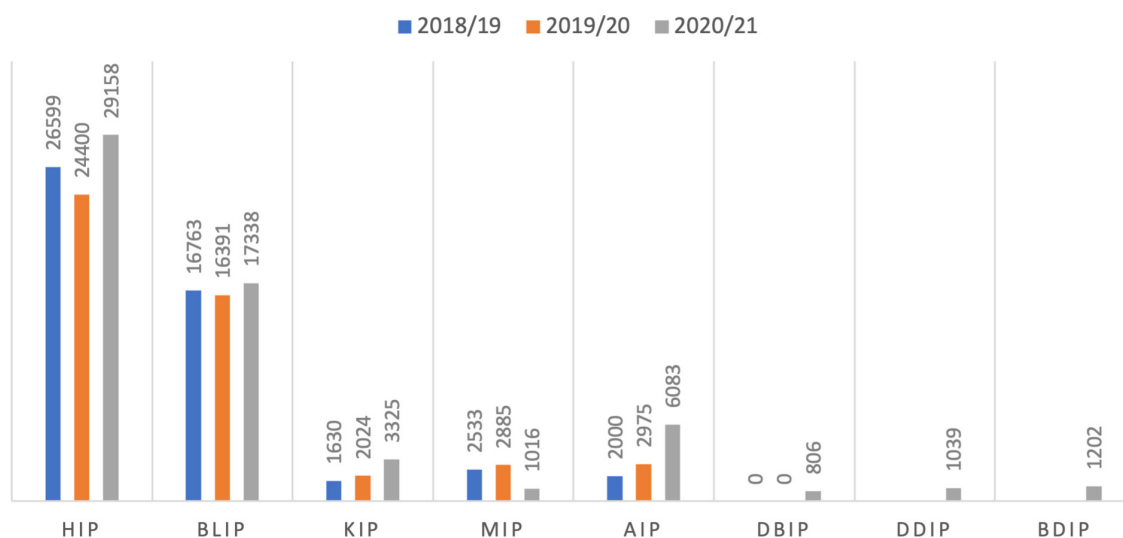
Table 4: Percentage Share of Industry Park Export in Ethiopia

Year	Annual Export in Ethiopia in USD	Annual Merchandise Export	Industry Park Export in USD	Industry Park Share to Export Merchandize	Industry Park Export Share to Total Export	Percentage Share of Industry Park Export in Ethiopia
2014	6,474,164,234	3,275,000,000	7247518	0.0022	0.0011	0.111945
2015	6,047,701,985	2,914,000,000	16956630	0.0058	0.0028	0.280381
2016	5,804,111,647	2,789,000,000	25396315	0.0091	0.0043	0.437557
2017	6,238,595,145	3,022,000,000	50331682	0.0166	0.0080	0.806779
2018	7,055,599,390	2,704,000,000	110742339	0.0409	0.0156	1.569567
2019	7,615,437,261	2,741,000,000	144684194	0.0527	0.0189	1.89988
2020	7,631,640,562	3,258,000,000	129003741	0.0395	0.0169	1.69038

Source: Authors Manipulation based on WDI and IPDC data

Employment creation is one major justification for the existence of Industry Parks in Ethiopia. Figure 13 shows, industry parks employment overtime in Ethiopia. Like the export case, the employment generation of industry parks in the country varies across them. Hawassa and Bole Lemi are the two prominent employer parks compared to the other parks located in the country. Yet, KIP, MIP and AIP are also contributing towards employment creation in the country though the contribution is not as huge as in the case of the two former prominent contributor industry parks. However, the employment opportunity created by DBIP, DDIP and BDIP are quite small compared to the former two cases.

Figure 13: Industry Parks Employment in Ethiopia Overtime



Source: IPDC

The gender composition of employment in industry parks in Ethiopia is presented in table 5 below. The table shows that, it varies across parks but on average, the share of female employees relative to

2 Exports of goods and services comprise all transactions between residents of a country and the rest of the world involving a change of ownership from residents to nonresidents of general merchandise, net exports of goods under merchanting, nonmonetary gold, and services and data are expressed in current U.S. dollars (The World Bank, 2022)

their male counterparts is significantly large in most of the parks. For instance, in 2019, in Bole-Lemi 89 percent are female employees, in Hawassa, 86 percent are female employees, while in Adama it is 96 percent and 91 percent, in Mekele industry park. In general, the pattern indicates gender imbalance in terms of employment across industry parks in Ethiopia with unnaturally more weight to females which has its own implications.

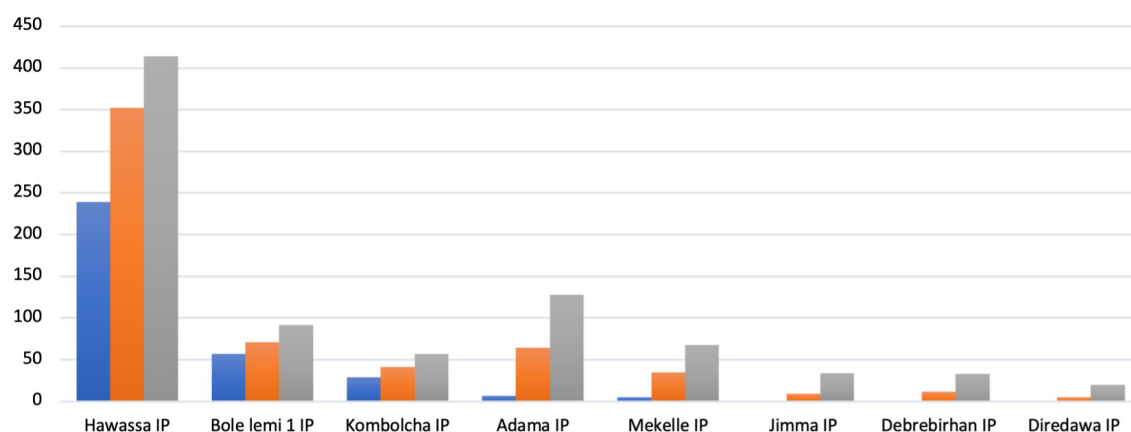
Table 5: Gender Composition of Employment of Industry Parks in Ethiopia Overtime

No	Industry Park	2017 Total	2018 Total	2019			2020			2021 Total
				M	F	M/F	M	F	M/F	
1	Bole-Lemi	14,820	16,763	1,608	14,661	0.11	1,832	15,637	0.12	21,738
2	Hawassa	18,140	26,599	3234	23550	0.14	3,964	25,743	0.15	33,783
3	Kombolcha		1,630	253	1,875	0.13	374	3,268	0.11	3,684
4	Adama		2,000	107	2,891	0.04	401	5,682	0.07	8,414
5	Mekele			274	2,982	0.09	129	897	0.14	-
6	Dire-Dawa			22	220	0.1	540	499	1.08	2,288
7	Jimma			192	905	0.21	198	1,269	0.16	360
8	Debre Brhan			519	560	0.93	166	772	0.22	1,455
9	ICT Park			872	1,610	0.54	682	590	1.16	2,248
10	Addis Industry Park			632	1,851	0.34	191	1,742	0.11	2,198
11	Kilinto			1,608			33	124	0.27	561
12	Bahr Dar			3234			327	961	0.34	1,243
13	Semera							15,637		356

Source: IPDC

Based on data accessed from IPDC, the pattern of Industry Parks Revenue as revealed in figure 14 below alters across the parks. The revenue generated from Hawassa industry park overtime is significantly larger compared to others. Except for Bole Lemi-I, Kombolcha and Adama parks, the contribution of other parks depicted in the figure is significantly low and none for few parks implying some parks being idle and operating under capacity.

Figure 14: Selected Industry Parks Revenue Overtime (Million Birr) (2019 to 2021)



Source: IPDC

Industry parks are basically expected to contribute to huge employment opportunity alongside knowledge and technology transfer that can be absorbed by the local human capital (Asfaw, 2019; UNIDO and CAITEC, 2019). Figure 15 shows the labor turnover across Ethiopian Industry Parks. Comparing the pattern, it varies across the parks where the turnover is high in Bole Lemi and Hawassa while is relatively low in the other underutilized parks (Adama, Mekelle, Dire Dawa and Debre Birhan and others). This can be explained by factors such as housing problem, low wage rate, increasing living expenses (Abebe

et al, 2019). This has a pessimistic implication on employment safety, sustainability as well as the level of technology and knowledge transfer (See figure 15).

Figure 15: Labor Turnover Across Ethiopian Industry Parks (2021)

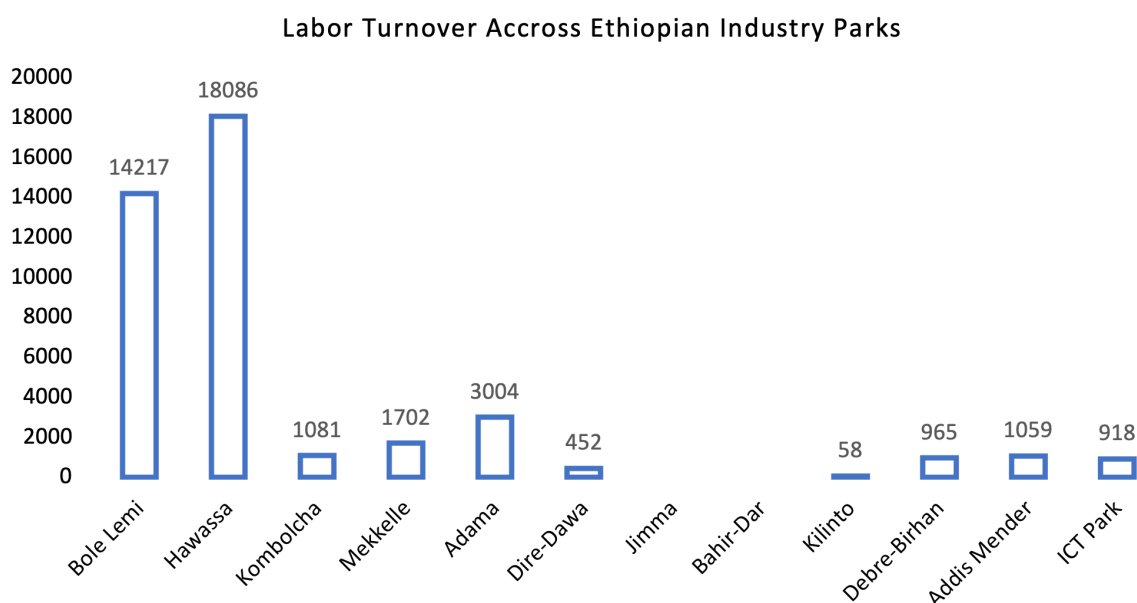


Table 6 below reveals the share of local or Ethiopian firms located within the industry parks in the country. As can be seen explicitly, except for a few parks the share of local firms in the industry parks on the early operational and prominent parks is found to be little compared to the expected linkage and engagement level of local firms in the industry park. Yet, there are a few parks with significant engagement of local firms which are AIV, ICT, Kilinto and Dire Dawa industry parks. However, the level of engagement in terms of knowledge and technology sharing, production and raw material linkage is yet to be explored.

Table 6: Local Manufacturing Firms Located Across the Industry Parks in Ethiopia

No	Name of Industrial Park	Share of Ethiopian Firms in the Industry Parks	In Percent
1	Bole-Lemi (I & II)	0.0716	7 percent
2	Hawassa	0.0909	9 percent
3	Kombolcha	0.000	0 percent
4	Mekelle	0.1667	16.6 percent
5	Adama	0.1111	11 percent
6	Dire Dawa	0.4	40 percent
7	Debre-Brhan	0.000	0 percent
8	Jimma	0.0000	0 percent
9	Bahr-Dar	0.000	0 percent
10	Semera	-	-
11	AIV	100	100 percent
12	ICT park	0.8	80 percent
13	Kilinto	0.9	90 percent

Source: IPDC

Different shocks have appeared globally and locally that limits the performance of the overall economy and the different economic sectors. Table 7 below summarizes the implication of COVID-19, internal conflict and Ukraine conflict on manufacturing firms in Ethiopia (see table 7).

Table 7: The Shadow of Multiple Shocks on Ethiopian Manufacturing Firms³

Shocks	Effect on Manufacturing Firms
COVID-19	<p>FDI Firms and local large manufacturing firms</p> <ul style="list-style-type: none"> ▶ Demand shock due to international reduction in the demand for the regular apparel and textile production (shut-down effect). On average, 20%⁴ reduction in orders by buyers alongside the lowered import supply and employment reduction has been at nearly 17% on average (Mengistu et al., 2020). ▶ FDI firm inflow reduction, production reshuffling & redistribution of resources in to COVID_19 relevant products ▶ Foreign exchange limitation
	<p>SMEs</p> <ul style="list-style-type: none"> ▶ Limited linkage with the global economy (Abebe et al, 2019; Mengistu et al. 2020). ▶ Local demand constraint due to reshuffling of income by consumers for alternative use to overcome the shock impact
Internal Conflict	<ul style="list-style-type: none"> ▶ The conflict has led to AGOA suspension which use to benefit FDI export firms in Ethiopia. This has led to production and export constraint for FDI firms in the industry park including exiling of firms to other markets like the case of PVH. Yet, the FDI firms in the parks are mainly dominated by Asian factories that effect of AGOA suspension on majority firms is not magnified. ▶ The internal conflict effect on manufacturing firms is revealed at different level across regions in the country. ▶ Mekelle industry park in Tigray is currently not operational, and infrastructure is damaged requiring huge cost ▶ Kombucha Industry Park in Amhara has been negatively affected by the war, and operations are limited with huge infrastructure loss. ▶ Manufacturing firms in the country had been affected by foreign exchange supply constraint limiting importing raw materials.
Ukraine Conflict	<ul style="list-style-type: none"> ▶ This shock has an implication of reducing agricultural products such as grain and sunflowers seed oil which affects trade and investment. It basically increased the international commodity price specifically of the price of fertilizer, food staple, oil and gas (Zeufack et al.2022). ▶ Food importer manufacturing firms in Ethiopia are highly affected as a price hike in gasoline price will result in increase in cost of imported raw materials

This section started with a glimpse review of industrialization and industry policy in Ethiopia followed by a descriptive analysis on Ethiopian industry pattern alongside the context of industry parks in the country. It is indicated that the concept of industrialization in Ethiopia has been introduced in the end of 19th century. To bring structural change, different efforts have been made as the country has adopted industrialization policy and strategies that potentially can transform the structure. However, despite the different interventions in terms of consecutive development plans across different governing regimes, development strategies like ADLI, industrial strategies such as import substitution, export promotion, industry park development strategy alongside the latest national level Industrial Development Strategy (IDS), the contribution of manufacturing activity in Ethiopia towards promoting export, foreign exchange, employment, production, and linkage has remained quite low.

Furthermore, the data in the industry park reveals that thirteen public owned industry parks are available in the country with different operational year, export contribution, production capacity, employment contribution and gender composition as well as imperceptible linkage contribution to the local economy. Of the thirteen industry parks, Hawassa is one among the early operational parks and has relatively huge contribution in terms of export, employment and revenue to the economy followed by the Bole-Lemi I industrial park. The share of industry parks export to total export in the country overtime however is found to be, considerably low.



3 Scoping review approach alongside secondary data source from EIC and IPDC have been used to show the impact of multiple shocks on Ethiopian manufacturing firms.

4 Mengistu, A., Krishnan, P., Maaskant, K., Meyer, C. J., & Krkoska, E. (2020). *Firms in Ethiopia's industrial parks: Covid-19 impacts, challenges, and government response*. World Bank.

The location of the parks is distributed across the country in every direction with equity justification missing the huge opportunity cost emanated from large capital investment on industry park establishment. The parks establishment should have considered strategic location to port and transportation that majorly determines successful implementation of IPS. The data also reveals that the engagement of local firms in the major industrial parks is found to be very limited with some exceptional industrial parks. However, this is a general indication which demands further detailed empirical investigation on how the parks are explicitly related to the local economy. Therefore, this chapter aimed at revealing the existing context of industry, industry policy and industry park in Ethiopia to be followed by a specific and detailed empirical analysis on the linkage of the parks with the local small and medium enterprises (SMEs).

3. SMEs in Ethiopia

A. SME Overview

In most developing countries, SMEs⁵ may not have technology, knowledge, finance, and capacity to contribute to the large firms supply chain in a cost-efficient way and are very constrained with adhering to quality standards (Abdullah, 2000). Besides, poor infrastructure, poor communication, lack of finance, restrictive enabling environment have been supply-chain risks and constraints for SMEs in developing countries (WBG, 2018; Quak, 2019). SMEs in Ethiopia is defined as those having 11 to 15 employees as small and more than 50 employees considered as medium plus small as having paid up capital between 20,000 to 500,000 and medium are those with more than 500,000 paid up capital in local currency, respectively (Hagos, 2012)⁶.

UNDP as a means of strengthening resilience during the multiple shocks it mainly focuses on MSMEs development and job creation with five central pillars including forward-looking market intelligence; building inclusive markets with multinational corporations and facilitating market access; acceleration of digital transformation; finance deployment to SMEs and the government and enabling SMEs survival and growth through strengthening the ecosystems (UNDP, 2021). Table 1 below presents the number of small and medium enterprises in Ethiopia in the year 2021. The small enterprises distributed in different regions of the country are 16, 805 in total. The medium enterprises distributed across the country is 5, 808 in total (see table 8).

Table 8: Medium and Small manufacturing enterprise in Ethiopia in 2021

Manufacturing Enterprise	Number	In Percent	Remark
Medium	5808	26	
Small	16 805	74	
Total	22, 613	100	

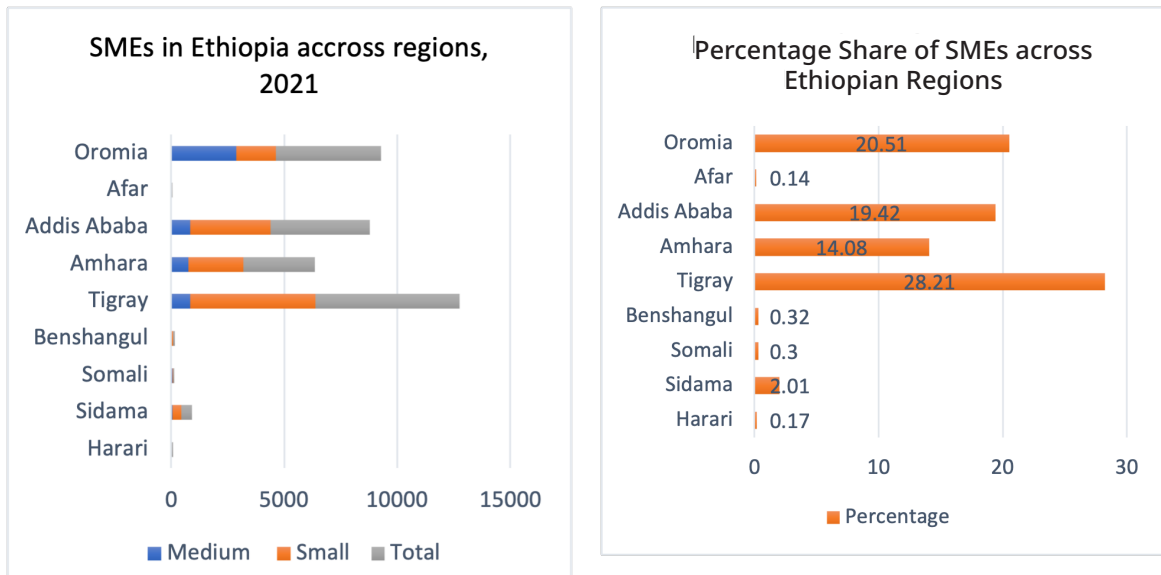
Source: SMEs Enterprise Ethiopia

Figure 16 and 17 below depicts the distribution of SMEs and their respective percentage share across regions in Ethiopia. On average, small enterprises are considerably located in Tigray, Addis Ababa, Oromia and Amhara regions respectively while medium enterprises are more traced in Oromia and Addis Ababa, Tigray, and Amhara. However, though we can find SMEs in other regions as well relatively they have small share from total SMEs located in the country (see figure 1 and 2).

5 Different indicators are used to define SMEs which include number of employees, sales value, or value of their assets at which the cutoffs vary from country to country. For instance, in China, SMEs are defined as having up to 1000 workers in some sectors while in Thailand cutoff is up to 200 workers (Abe et al., 2015; Abdullah, 2000). Micro and small-scale enterprise (MSEs) development in Ethiopia goes back to 1997 with the objective of inducing growth and equitable development, promoting growth, creating long term jobs, establishing basis for medium and large firms along with creating strong cooperating within the MSEs. MSEs had apriority sectors that include textile and clothing, agrobusiness, food production, metalwork and craft, small scale farming and fishing etc (Abagissa, 2021). According to CSA definition, small scale manufacturing enterprises are establishments employing less than ten persons and using motor operated equipment while medium manufacturing represents establishments engaging more than 10 persons (CSA, 2004; Abagissa, 2021). Still, the contribution of manufacturing in Ethiopia has been very low for decades (WDI, 2022).

6 Recently, there is new definition of SMEs in Ethiopia, but official document is not yet released by MOI.

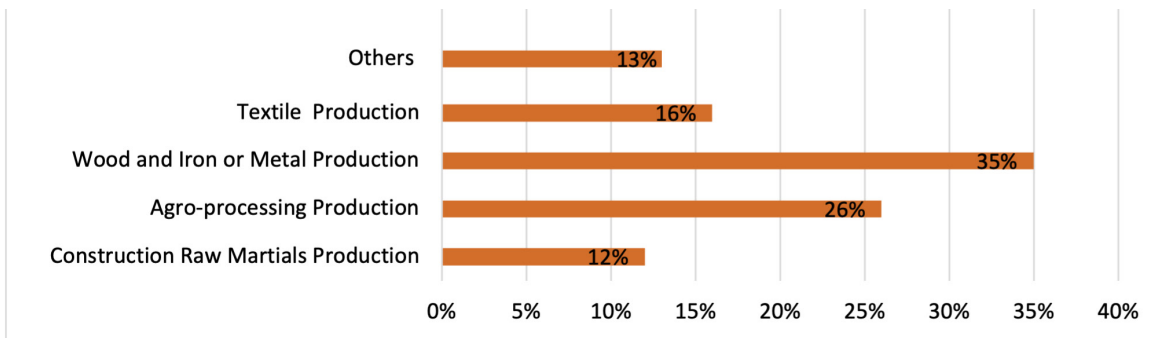
Figure 16: Regional Distribution of SMEs in Ethiopia Figure 17: Percentage Share of SMEs across Regions



Source: SMEs Enterprise, Ethiopia

The figure below shows the industry share of SMEs in Ethiopia. It is indicated that wood and iron 35 percent, textile 16 percent, Agro-processing 26 percent, raw material for construction contributes 12 percent, the rest industries 13 percent. (See figure 18).

Figure 18: SMEs Industry Share in Ethiopia, 2021

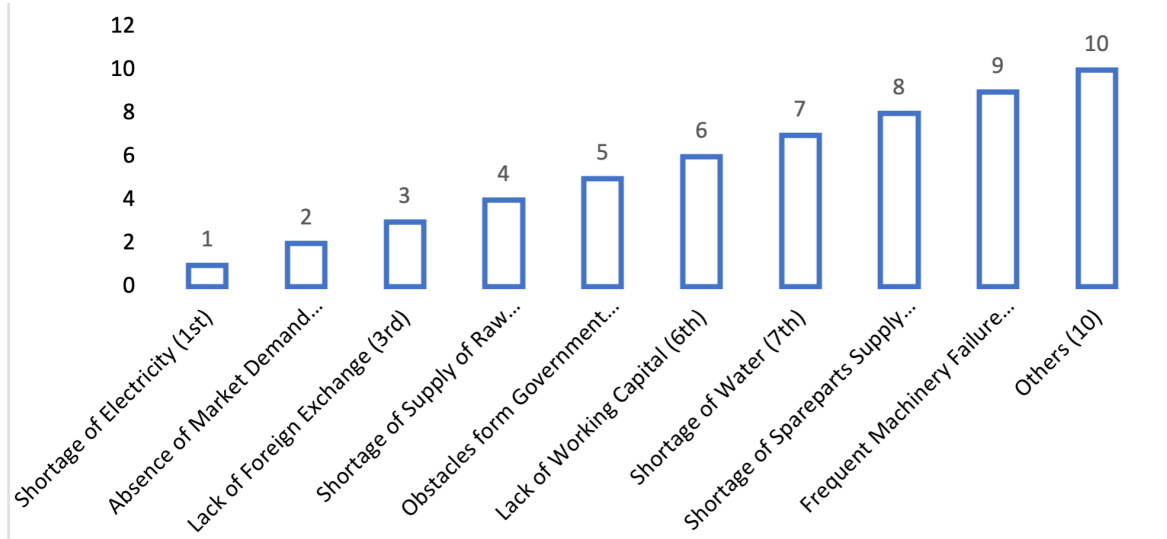


Source: SMEs Enterprise, Ethiopia

B. SMEs Key Challenges in Ethiopia⁷

SMEs in Ethiopia face several key challenges. These constraints are documented below (see figure 19).

Figure 19: Challenges of Small and Medium Enterprises in Ethiopia (Ranked from 1 up to 10)



Source: Compiled by the Author, (Ethiopian Central Statistics Survey)

- ▶ **Low quality of raw materials and inputs compared to the global standard requirement:** The quality of raw materials delivered by SMEs is low and do not attain the international market standard being one major constraint for them to deliver inputs for large and FDI firms in Ethiopian industry parks.
- ▶ **Limited tariff incentive structure:** The tariff incentive on imported raw materials for local SMEs compared to large and FDI firms. FDI firms inside the IPs are given duty-free incentive to import raw materials and this limits the competitiveness performance of local firms with the FDI ones due to relatively high cost of imported raw materials.
- ▶ **Limited finance and loan availability:** The availability of finance for SMEs to sustain their production activity is very limited and should come up with a collateral that compensates the loan to be accessed from the availed financial institutions.
- ▶ **Limited skill and capacity of the SMEs on production and marketing:** They are provided with short term training but still it is not demand driven or context relevant. This limits their respective performance in production, marketing and being competitive with international counterpart firms.
- ▶ **Inadequate interest of local investors to engage in SMEs or manufacturing firms** due to the long hassle related to it and the alternative investment land availability option that has an easy money return compared to renting a shed and doing business with relatively huge cost, long procedures, and limited number of established international buyers or customers.
- ▶ **Unfavorable /or neutral rules and regulations for local SMEs development** in Ethiopia relative to the context of promoting FDI and large exporting firms in the country.
- ▶ **Limited Foreign exchange availability:** for the SMEs production process importing raw materials demands foreign exchange and the limited availability in addition to the high tariff unlike duty free treatment of FDI firms will make the performance of the firms to be unprogressive.
- ▶ **Low product marketability in the local and international market:** for the local SMEs the market availability is low though the existing population in the local economy is huge market potential. Yet, for quality reasons, weak marketing strategies and raw material supply constraints, poor infrastructure in the regions, low access to financial loan, the SMEs have low product marketability.
- ▶ **Limited follow up:** After establishing the SMEs there is limited capacity and performance in terms following up their respective progress and the challenges that limited their overall performance.
- ▶ **Limited specific formal structure** established to link the industry park with the local economy specifically the SMEs.

7 Exploratory approach is used to identify key factors influencing SMEs at which primary data has been sourced from key informant stakeholders (IPDC, EIC, SMES, CSA, NBE, UNIDO, MOI)

- ▶ **Inadequate infrastructure availability for local SMEs** is another major constraint limiting the performance of production. Compared to FDI firms located in the IPS which are availed with tax holiday, sheds, cheap labor, investment administration institutions, utilities, water supplies, waste management system etc, the local SMEs which are supposed to be gears of the economy have limited infrastructure availability.
- ▶ **Technology utilization capacity of local SMEs** in Ethiopia is limited due to the absorptive capacity of the existing human capital employment in the sector and mismatch of the existing skill with the technological knowhow introduced in the sector to upgrade production, export, logistics, marketing, and overall business administration.
- ▶ **Political environment is** one key factor to shape the economic effect of IPs on local economy and the performance of SMEs, respectively. When the focus is distracted by different shocks such as covid, conflict and global crisis, the attention and support to be delivered for SMEs will be hijacked which have huge opportunity cost on the functioning and overall performance of SMEs. Yet, regional capacity disparity and a centralized administration structure at federal level of SMEs and their respective link with IPs has also performance limiting factor.
- ▶ **Data constraint on SMEs:** in Ethiopia the definition of SMEs varies across different government institutions. The availability of microlevel data on SMEs that determines evaluation of their respective performance in terms of linkage is not availed properly and comprehensively. Yet, different data sets are availed by the different agencies with different level of intensities making the evaluation to be challenging. This requires huge attention in terms of harmonizing the SMEs definition in the country and establishing rich and strong survey or census database at national level.

4. The Role of Industry Parks in the Local Economy: The Case of Ethiopia

Little empirical evidence is available that directly examines the socio-economic effect of Industry Parks in the Ethiopian local economy and the performance of local firms (Negesa et al., 2022; Oya and Schaefer, 2021). Thus, this section presents evidence on the role of industry parks in the local economy in Ethiopia mainly focusing on manufacturing enterprises in the country.

A. Descriptive Statistics

The descriptive statistics section presents the summary statistics of variables of the econometric model, the patterns on establishment, production, employment, capital, labor productivity and total factor productivity for 15 manufacturing industry clusters overtime. In Table 9 below the mean, minimum and maximum values for the variables in the model are clearly depicted. There are 15 industrial groups with 24 years duration ranging from 1996 to 2019 giving 360 observations. Data for establishment, production, employment, and capital is sourced from the Ethiopian Statistics Service. Production and capital are reported in billions of birrs and employment on the table is reported in thousands (see table 9).

Table 9: Summary Statistics of Variables in the Econometric Panel Model

Variables	Variations	Mean	Std. Dev.	Minimum	Maximum	Observations
ID	Overall	8	4.327	1	15	N=360
	Between		4.472	1	15	n=15
	Within		0	8	8	T=24
Years	Overall	2007.5	6.931	1996	2019	N=360
	Between		0	2007.5	2007.5	n=15
	Within		6.931	1996	2019	T=24
Establishments	Overall	125.14	178.99	0	1193	N=360
	Between		144.98	0.958	527.58	n=15
	Within		111.19	-228.43	790.56	T=24
Production	Overall	4.006	8.830	0.005	74.59	N=360
	Between		5.282	0.559	22.07	n=15
	Within		7.201	-15.88	56.53	T=24
Labor	Overall	11.607	15.125	0.048	90.70	N=360
	Between		11.773	0.866	45.79	n=15
	Within		9.952	-10.988	72.20	T=24
Capital	Overall	2.161	6.320	0	52.54	N=360
	Between		2.909	0.127	10.52	n=15
	Within		5.659	-7.777	52.25	T=24
Technical Change	Overall	12.5	6.931	1	24	N=360
	Between		0	12.5	12.5	n=15
	Within		6.931	1	24	T=24

Variables	Variations	Mean	Std. Dev.	Minimum	Maximum	Observations
Labor Productivity	Overall	91.927	244.12	-174.35	3329.20	N=360
	Between		100.41	13.16	432.36	n=15
	Within		223.90	-356.45	2988.77	T=24
Industry Park Shock	Overall	0.162	0.368	0	1	N=360
	Between		0.019	0.090	0.166	n=15
	Within		0.368	-0.004	1.071	T=24

Source: Compiled by the authors using Stata

Variables Pattern Overtime

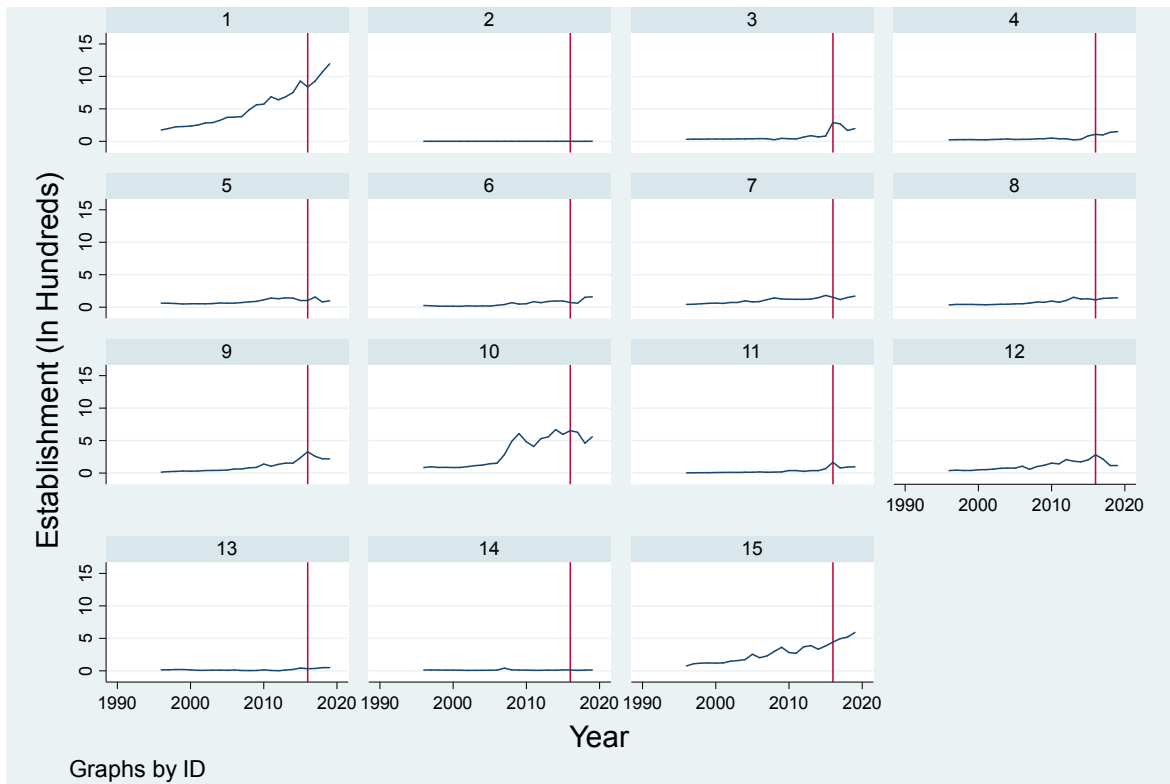
Based on the data from the Ethiopian Statistics Service, manufacturing enterprises are classified in to 15 clusters which are food products and beverage industry (ID=1); tobacco products industry (ID=2); textiles industry (ID=3); wearing apparel except fur apparel industry (ID=4); tanning and dressing of leather; manufacture of footwear, luggage and handbags industry (ID=5); wood and of products of wood and cork, except furniture industry (ID=6); paper, paper products and printing industry (ID=7); chemicals and chemical products industry (ID=8); rubber and plastic products industry (ID=9); other non-metallic mineral products industry (ID=10); basic Iron and steel industry (ID=11); fabricated metal products except machinery and equipment industry (ID=12); machinery and equipment industry (ID=13); motor vehicles, trailers & semi-trailer industry (ID=14) and furniture industry (ID=15) (see table 10).

Table 10: Manufacturing Industry Groups Cluster

Industry Group	Industry ID
Manufacture of Food Products and Beverages	1
Manufacture of Tobacco Products	2
Manufacture of Textiles	3
Manufacture of Wearing Apparel, Except Fur Apparel	4
Tanning and Dressing of Leather; Manufacture of Footwear, Luggage and Handbags	5
Manufacture of Wood and of Products of Wood and cork, Except Furniture	6
Manufacture of Paper, Paper Products and Printing	7
Manufacture of Chemicals and Chemical Products	8
Manufacture of Rubber and Plastic Products	9
Manufacture of Other Non-Metallic Mineral Products	10
Manufacture of Basic Iron and Steel	11
Manufacture of Fabricated Metal Products Except Machinery and Equipment	12
Manufacture of Machinery and Equipment N.E.C.	13
Manufacture of Motor Vehicles, Trailers & Semi-Trailer	14
Manufacture of Furniture	15

Figure 20 below shows establishment of firms classified by industry groups in Ethiopia. It is indicated that there is a heterogeneous pattern of establishment across the groups over time. The food products and beverage industry (ID=1), other non-metallic mineral industry (ID=10) and furniture industry (ID=15) shows an increasing pattern overtime compared to the others which had steady pattern for over 2 decades implying sluggish establishment growth in many of the industry groups (see fig 1). Yet, to see the impact of industry park establishment on the pattern of manufacturing firms' development, we made a comparison of the trend before IP and after. The graph below indicates that industries like food and beverage (ID=1), textiles (ID=3) and manufacture of apparel (ID=4) have revealed an increasing trend after the commencement of the industry parks (see fig 17).

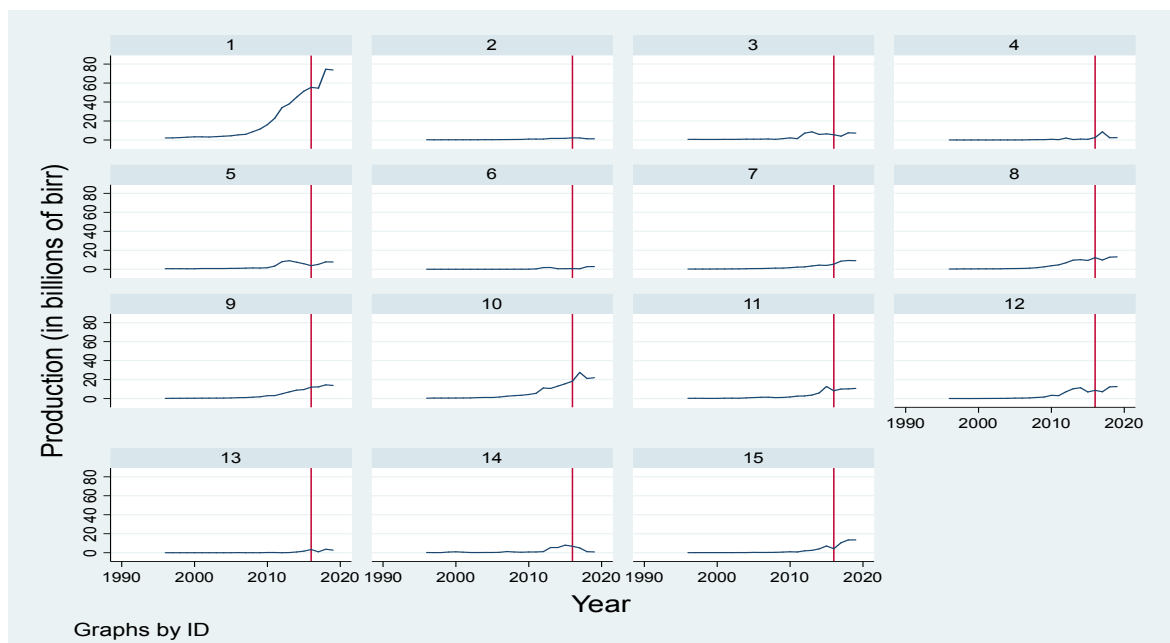
Figure 20: **Establishment** Pattern by Industry Groups



Source: Compiled by the Author using Stata

The production pattern of manufacturing firms over two decades is presented in figure 21 below. The 15 manufacturing industry groups reveal dissimilar patterns in terms of their respective production. The food and beverage (ID=1) have an increasing trend unlike most of them. After the introduction of industry parks in Ethiopia the production of textiles (ID=3), apparel (ID=4) and rubber and plastic (ID=9) has showed upward trend besides food and beverage industry (ID=1). However, the overall trend of the manufacturing firms on average is not changing implying a steady growth for decades, which can be one symptom of low industrialization pattern in the country requiring active policy intervention.

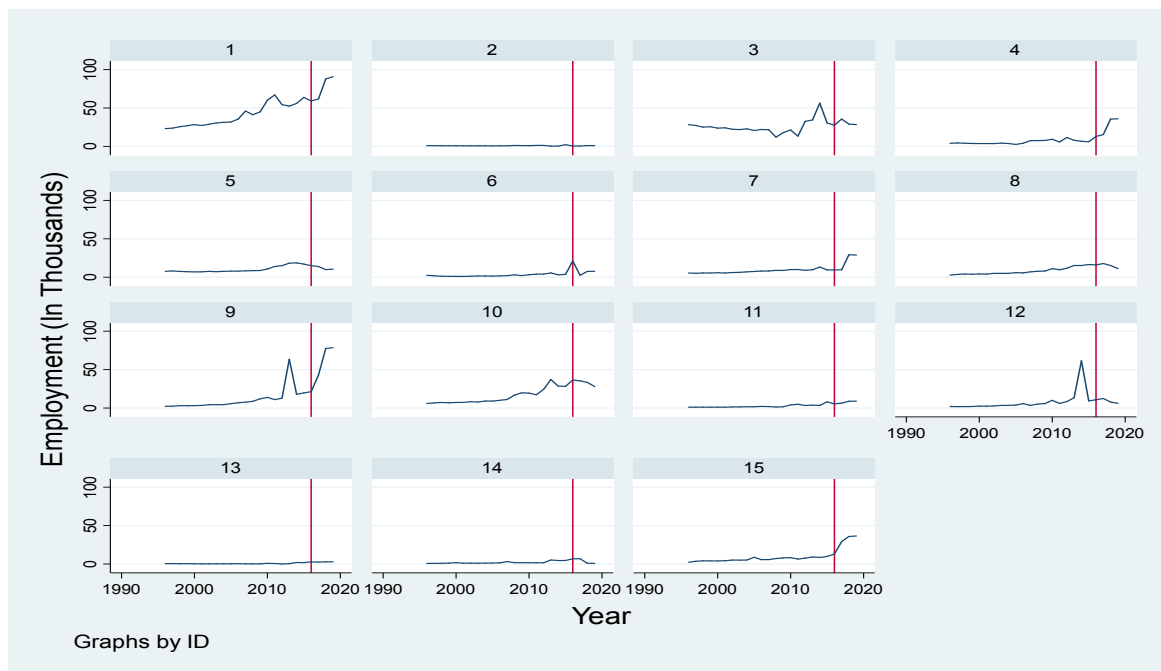
Figure 21: **Production** Pattern by Industry Groups



Source: Compiled by the author using Stata

Industrialization is a key element of development with different strategies for pursuing it (Echevarria, 1995; Lewis 1954) while deindustrialization represents the decline or steady growth of manufacturing employment and output, respectively (Rowthorn and Ramaswamy, 1999; Rodrick, 2016; Kebede, 2020). Figure 22 below presents the trend of employment for the manufacturing firms in Ethiopia clustered in 15 industrial groups. Comparing the industry groups, more employment is in the food and beverage industry groups (ID=1) with the lowest employment in the tobacco industry (ID=2). Our focus is what happened after the industry park shock to the pattern of employment in the manufacturing industry groups. It is indicated that employment in textile (ID=3), apparel (ID=4) and food and beverage (ID=1) have revealed an upward pattern. This signifies industry park can be one candidate to increase the pattern of employment in those manufacturing industries though to claim largely it needs empirical analysis.

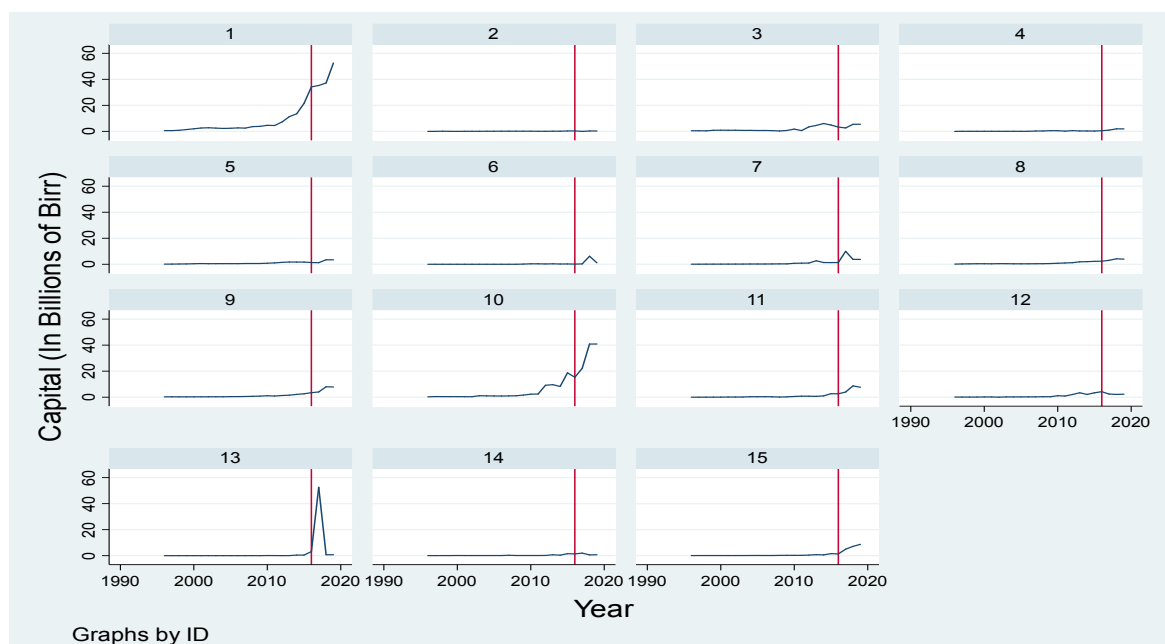
Figure 22: **Employment** Pattern by Industry Groups



Source: Compiled by the Author using Stata

In Ethiopia, most manufacturing firms are labor intensive that the intensity of capital is moderate compared to capital intensive industries elsewhere. Figure 23 below shows the capital used by manufacturing firms clustered in industry groups. Comparing the groups, the food and beverage industry (ID=1) and other non-metallic mineral products industry (ID=10) have more capital investment than the rest industry groups. After the industry park, the capital in machinery and equipment industry (ID=13), other non-metallic mineral products industry (ID=10) as well as food and beverage industry (ID=1) has revealed an upward trend (see figure 23).

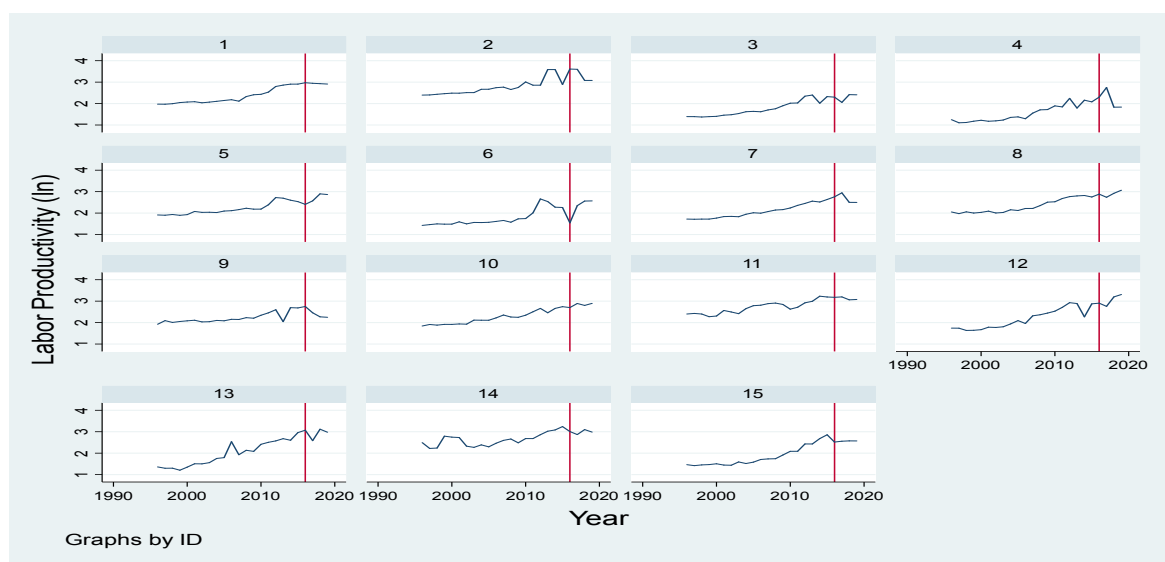
Figure 23: **Capital** Pattern by Industry Groups



Source: Compiled by the Author using Stata

The labor productivity growth of manufacturing firms in Ethiopia is depicted on figure 24 below for the 15 industry clusters. For over 20 years the labor productivity for the manufacturing firms is moderate as it has flat trend for almost all the groups overtime implying the productivity of labor in the manufacturing firms has not significantly improved though revealed a moderate change over the years. This implies the labor productivity of manufacturing firms in Ethiopia is low compared to its Asian counterparts (Dinh et al., 2012).

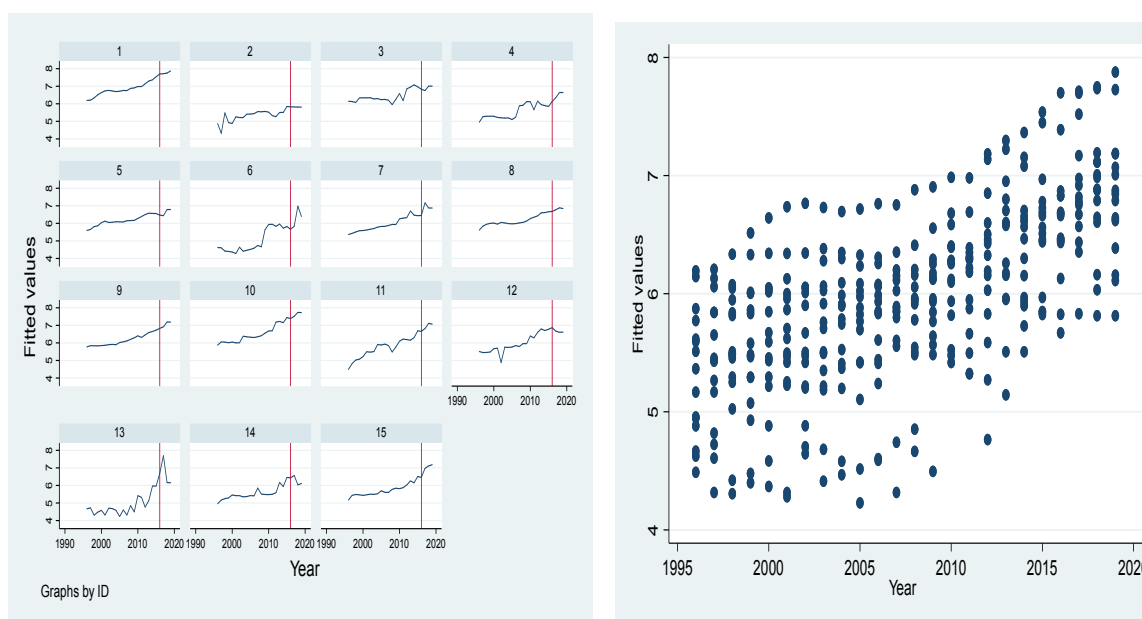
Figure 24: **Labor Productivity** Growth by Industry Group



Source: Compiled by the Author using Stata

Productivity growth at manufacturing level has a significant role for attaining sustainable development (Papadogonas and Voulgaris, 2005; Fedulova et al., 2019). Figure 25 and 26 below indicates the total factor productivity of manufacturing firms in Ethiopia. The 15 industry groups have varying pattern overtime. Yet, the total factor productivity for the consecutive two decades of the manufacturing industry has been moderate with a flattery upward trend. It implies positive but slow improvement in total productivity in manufacturing firms in Ethiopia. Yet, the introduction of industry parks does not indicate a dramatic shift in the pattern of the total factor productivity of the industry groups inquiring to work more on absorbing technological knowhow to the local manufacturing firms (see figure 25 and 26).

Figure 25 and 26: **Total Factor Productivity** by Industry Group



Source: Compiled by the Author using Stata

B. Econometric Estimation

To empirically assess the effect of industry park on the performance of local manufacturing firms in Ethiopia, a panel data set of 15 industrial groups for 24 years spanning from 1996 to 2019 has been used. Different models are being estimated using fixed effect, random effect and generalized least square panel and dynamic panel (GMM) methods. The model has manufacturing growth as dependent variable and labor, capital, technical change, industry park shock and polity2 index as explanatory variables. In the fixed effect estimation, labor has found to be positive and statically significant in the five models to explain manufacturing growth in Ethiopia. Likewise, capital is a positive and significant factor to explain manufacturing growth. Technology is another explanatory variable in the model found statically significant and positive to explain manufacturing growth in Ethiopia though with low magnitude (see table 11).

Another interesting result is the positive and statistically significant effect of industry park shock on the performance of manufacturing firms in Ethiopia. This indicates the establishment of the industrial park is positive in general, but this does not show the specific details. The estimation result also indicates the effect of political economy measured using polity2 index on the manufacturing growth in Ethiopia. The result shows that political economy has negative and significant effect on the performance of manufacturing industries (see table 11).

Table 11: Panel Fixed Effect Estimates

Dependent Variable: Manufacturing Production (in Ln)	(1)	(2)	(3)	(4)	(5)
Labor	1.837*** (0.140)	0.840*** (0.148)	0.685*** (0.156)	0.684*** (0.149)	1.091*** (0.214)
Capital		0.593*** (0.109)	0.191* (0.099)	0.133 (0.098)	0.087 (0.156)
Technology			0.048*** (0.005)	0.043*** (0.004)	
Industry Park Shock				0.255*** (0.077)	

Dependent Variable: Manufacturing Production (in Ln)	(1)	(2)	(3)	(4)	(5)
Polity2 index	-	-	-	-	-0.115*** (0.030)
Constant	-1.475** (0.527)	-1.077*** (0.325)	1.157* (0.581)	1.499*** (0.607)	0.423*** (0.563)
Observations	320	320	320	320	251
Number of Groups	15	15	15	15	15
Rsq	0.5250	0.7206	0.7803	0.7794	0.5175

Robust standard error in parentheses and *, **, *** indicate significance level at 10%, 5% and 1% significance level respectively.

Table 12 below shows the estimate result of panel random effect for five alternative models. In this case labor, capital, technical change, and industry park shock are found to be positive and statistically significant to explain manufacturing growth in Ethiopia. Besides, political economy is found to be statistically significant to negatively affect manufacturing performance in Ethiopia. However, in panel data analysis, we need to decide if fixed effect or random effect model best suits the data using Hausman test. The result of the Hausman test is reported in table 12 below.

Table 12: Panel Random Effect Estimates

Dependent Variable: Manufacturing Production (in Ln)	(1)	(2)	(3)	(4)	(5)
Labor	1.717*** (0.115)	0.659*** (0.109)	0.649*** (0.107)	0.639*** (0.142)	0.603*** (0.173)
Capital		0.641*** (0.065)	0.262*** (0.044)	0.177*** (0.086)	0.368*** (0.113)
Technology			0.041*** (0.003)	0.042*** (0.003)	-
Industry Park Shock				0.246*** (0.077)	-
Constant	-0.431 (0.691)	-0.075 (0.318)	1.566*** (0.319)	1.441** (0.535)	0.703* (0.382)
Polity2 index	-	-	-	-	-0.109*** (0.025)
Observations	360	360	360	360	251
Number of Groups	15	15	15	15	15
Rsq	0.5799	0.8002	0.8401	0.7867	0.5511

Robust standard error in parentheses and *, **, *** indicate significance level at 10%, 5% and 1% significance level respectively.

To choose from FE and RE model, Hausman test is conducted with null hypothesis stating Random effect is consistent. The p value for the test is less than 1 percent significance level that we rejected the null and failed to reject the alternative hypothesis. This implies the FE model fits the data better than the random effect model (see table 13).

Table 13: Hausman Test to Select Between Fixed and Random Effect Models

Null Hypothesis: Ho	Alternative Hypothesis:H1	Hausman Test Decision (P-value)	Decision (Appropriate Model)
Random Effect Model is Consistent	Fixed Effect Model Is Consistent	0.0000	FE

After estimating the coefficients, the next step is to make a diagnostic test of the model or make post estimation test for autocorrelation, heteroscedasticity, and cross-sectional dependence of the panel model. To control those estimation biases, the general list square form is used which gives coefficient estimates controlled from cross-sectional dependence, autocorrelation, and heteroscedasticity. Accordingly, the estimation result of FGLS indicates that labor, capital, technical change, and industry park shock has a statistically positive effect on manufacturing performance in Ethiopia. Thus, the empirical finding illustrates the fact that industry park establishment has a positive effect to Ethiopian economy though this is in general sense indicating a detailed and specific data collection and impact evaluation to examine the explicit effect on different sectors and economic variables in terms of magnitude and direction. A program intervention that addresses the data, measurement, methodology and impact constraints towards evaluating the impact of industry park on Ethiopian economy can resolve the aforementioned drawbacks (see table 14).

Table 14: FGLS Estimates

Dependent Variable: Manufacturing Firms Production (in Ln)	Coefficient	Std. Err.	P-Value
Labor	0.268***	0.059	0.000
Capital	0.558***	0.051	0.000
Technological Change	0.027***	0.004	0.000
Industry Park Shock	0.170**	0.069	0.014
Constant	0.892***	0.150	0.000
Observations		352	
Number of Groups		15	
Panels		Homoscedastic	
Correlation		No Autocorrelation	

Robust standard error in parentheses and *, **, *** indicate significance level at 10%, 5% and 1% significance level, respectively.

Table 15 below presents dynamic panel model estimates. Based on the GMM estimation result, lagged production, labor, capital, technical change and industry park intervention has positive role towards inducing manufacturing firms' production in Ethiopia (See Table 15).

Table 15: Dynamic Panel Estimates: GMM

Dependent Variable: Manufacturing Firms Production (in Ln)	Coefficient	Std. Err.	P-Value
Production L1	0.3622**	0.1439	0.012
Labor	0.5682**	0.2356	0.016
Capital	0.2776**	0.1194	0.020
Technological Change	0.2244**	0.0885	0.011
Industry Park Shock	0.1377*	0.0818	0.093
Constant	1.2335**	0.5871	0.036
Observations		311	
Number of Groups		15	

Robust standard error in parentheses and *, **, *** indicate significance level at 10%, 5% and 1% significance level respectively.

5. Benchmarking Global Practice

Though the path to development is intertwined with obstacles, traps, and frequent reversals, in the past half century East Asian nations has managed to complete their economic fitness journey by leveraging their comparative advantage alongside implementing structural changes in their respective economy (Lin et al., 2020). They have showed impressive transformation from agriculture to industry including an upgrading from labor intensive industries to high value adding modern industries like automobiles and electronics with huge opportunities provided by globalization (Kumar, 2020). In fact, the East Asians in 1960s were among the list of poor countries in the globe but fortune has been twisted in their industrialization and economic performance through the implementation of indigenous and contextualized reforms and policies (Cho, 2012).

Those countries including Japan, China, Singapore, Malaysia, Thailand, and Vietnam have achieved industrialization development implementing extensive strategic interventions by their respective government through building domestic production capacity, ensure competitiveness, fostering technological upgrading and innovation, by creating national champions and global brands, FDI and selective approach to trade openness and strategic exchange rate management (Kumar, 2020). Yet, in East Asia SEZs have been designed to attract investment in labor-intensive manufacturing industries by multinational corporations and became a cornerstone of trade as the countries shifted their policies from import substitution to export led growth policy by aiming to integrate in a global market (Farole and Moberg, 2014).

In Asian economies, MSMEs are the driving force of their respective economy accounting for an average 97 percent of all enterprises and 69 percent of their labor force and the increased FDI inflows in Asian countries has created the demand for MSMEs domestic products and services towards supporting industries for parts and components (Zhongming and Wei, 2020). In ASEAN countries productivity growth is mainly determined by the performance of individual firms in their respective country, mainly the small and medium sized enterprises (SMEs). In fact, aggregate productivity is shaped by either enhanced capabilities for productivity growth with in all firms in the country or reallocation of resources between SMEs which results from business dynamics (OECD, 2021).

MSMEs in Southeast Asia are classified using combined four criteria which include number of employees, annual sales turnover, capital invested and net or total assets (Zhongming and Wei, 2020). Research and development, establishment of industrial linkage coupled with cluster formation, market availability, training or education are some of the strategies used by southeast Asian countries towards developing their SMEs (Chisala, 2008). Six decades ago, Asia has been twice as poor as Africa but currently has become twice as rich as they have heavily invested in technology and intensive training on various skill that induces productivity (Chisala, 2008). Therefore, it will be reasonable to learn from this ironic best practice that twisted their fate. In our case, the case of China, Korea and Singapore, Vietnam are selected for the benchmarking analysis in terms of successful link of industry park with their respective local economy specifically with MSMEs.

China

In China, the opening up in 1978, laid the foundation for its economic development through the establishment and rapid expansion of industry parks and special economic zones which prompted economic growth, accelerated industrialization pace and its global market integration (UNIDO and CAITEC, 2019). China has been successful towards its industry park implementation process by working parallelly on rural reforms, port governance, attraction of FDI, conflict avoidance, exchange rate management (Zafar, 2010).

Figure 27 and 28 below represents the manufacturing trade in China and the share of manufacturing value added to GDP in the country. The manufacturing trade pattern in China after 1996 has revealed a positive balance with an export outweighing import over the years implying significant trade surplus in the manufacturing sector. Yet, the share of the sector to GDP has been 30 percent on average over the decade implying robust industrialization pattern in the country with more than a quarter share of the manufacturing activity of the total economic production.

Figure 27: Manufacturing Trade in China

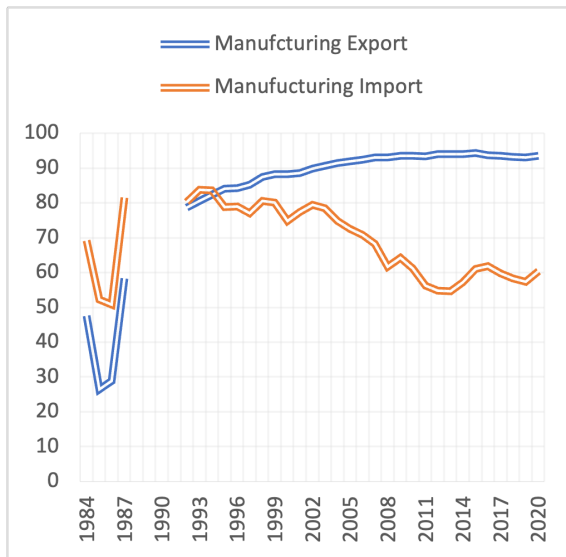
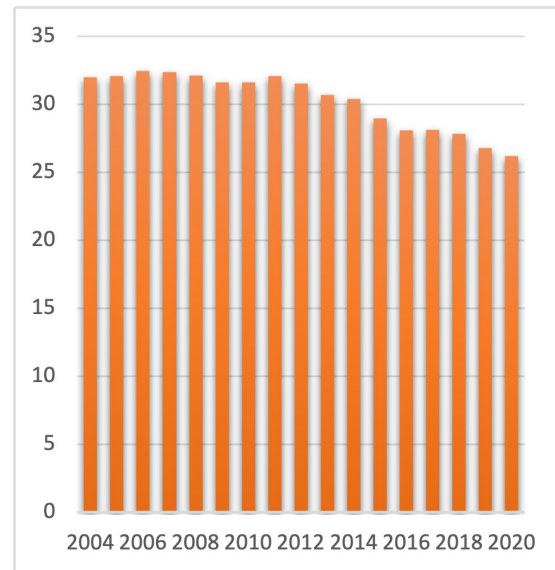


Figure 28: Manufacturing Share of GDP in China



Source: WDI database

Industry Park and Local Economy Linkage in China: Industrial Park policy in China is the key outcomes of opening and reform policy in the country adopted in 1978 and based on this industry park in China have played a key role in driving economic development in the country, its internationalization, and the growth of the industry sector in the economy (UNIDO and CAITEC, 2019). For instance, Suzhou Industrial Park in China has become one of the leading economic and development zones in the country being miniature of China’s economic achievement for over four decades mainly attributed to the governance quality of government as institution that has successfully shaped the economic activities (Xie and Lu, 2021).

In China, industrial parks are leader in attracting talents from across the country which augmented the technology and knowledge spillover transfer to be smooth for the huge absorptive capacity advantage of the talents; projects in the parks shall be high-tech, apply mature technologies, and have high value added and a good market prospect: they also have established labor unions to protect interest and rights of employees. The parks also provide professional and technical trainings for the employees regularly, high labor productivity and the parks in China intensively have been working on harmonious employer-employee relation to induce productivity (UNIDO and CAITEC, 2019).

Korea

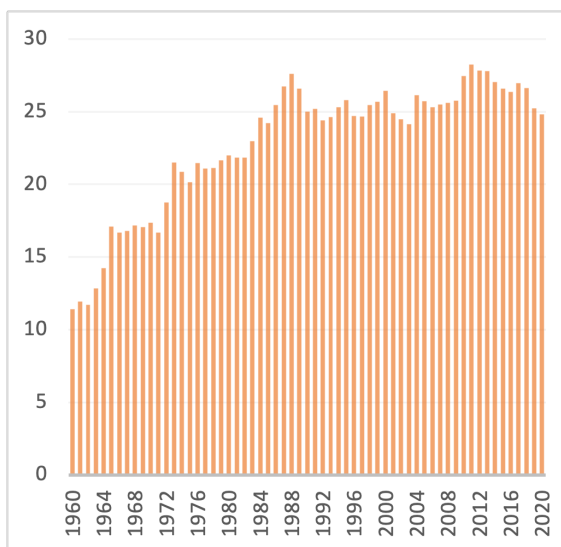
After 1945, the Korean economy was very disadvantaged as result of the Japanese Occupation from 1910 to 45 and Korean war from 1950 to 53 where the overall structure has been distracted during the war (Cho, 2012). The country however made a continuous effort to recover to rebuild the economy by starting with fostering the white industries named after the factories for flour sugar and cotton. Yet, in 1960s Korea was one of the world’s poorest countries with significant trade deficit and low per capita GDP. The Korean government has introduced export oriented industrial policy, government led economic development, aggressive investment on industry parks to support light export industries, promoted expansion of saving and foreign investment, fostering specific industries with unbalanced economic development strategy inured to overcome those challenges (Cho, 2012).

Figure 29 and 30 below shows the manufacturing trade and the value-added share overtime in Korea, respectively. The pattern of manufacturing trade indicates that after mid 1960s export of manufacturing in the country has been greater than manufacturing import indicating manufacturing trade surplus in Korea over the decades till recent times. Yet, the share of manufacturing value added to GDP has an increasing trend and has been covering the quarter share, on average. This performance is attributed to many factors but mainly the export oriented industrial policy alongside aggressive investment on industry parks in the country (Cho, 2012).

Figure 29: Manufacturing Trade in Korea



Figure 30: Manufacturing Share of GDP in Korea



Source: WDI database

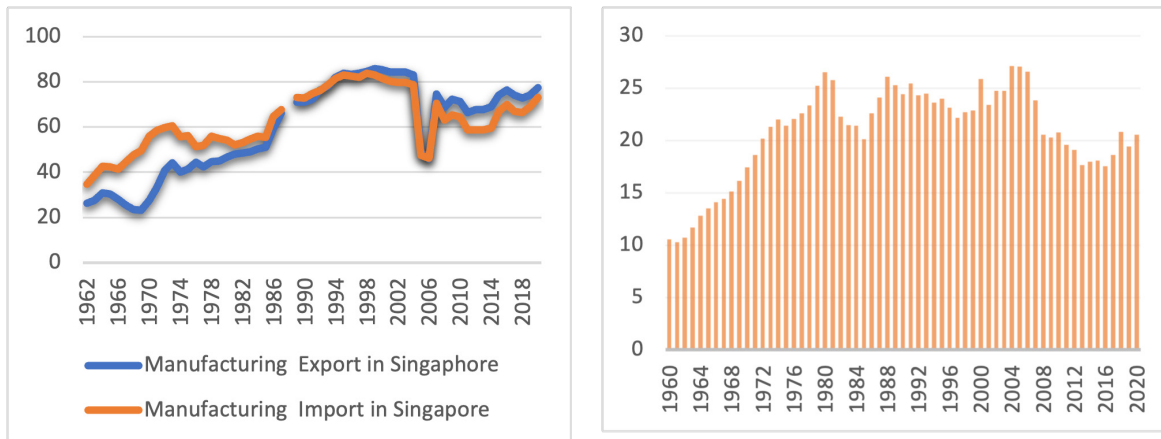
Industry Park and Local Economy Linkage in Korea: In Korea, the SMEs have managed to integrate in international markets for different reasons such as corporate strategies, technological innovations, customer relation and service delivery reputation, research and development, international marketing strategies and others (Suh and Kim, 2014). Besides, the innovative cluster policy by the government has contributed to strengthening linkage between firms, research centers, universities towards forming local innovation network alongside linkage between SMEs and large firms (Park and Chung, 2012).

To develop absorptive capacity of local SMEs in Korea, intensity of effort has critically facilitated towards the extent of learning; possession of relevant knowledge improved when partners share similar business background and collaborative support from knowledge and technology transferring firms has been mandatory to induce the actual learning absorption by local SMEs (Park and Ghauri, 2011). Successful performance of SEZs in the country heavily depended on building strong linkages and spillovers with the local economy; providing reliable infrastructure; mainstreaming SEZs in to national development agendas; creating conducive political environment and enabling working business environment alongside mainstreaming SEZs into national development strategies (Mugano, 2021).

Singapore

Singapore has risen to be premier world city and an important base for multinational manufacturing attributed to its reputation for corruption free administration, overall integrity of legal and financial system as well as infrastructural efficiency that significantly contributed to its economic development (Mirza, 1986; Huff 1995; Yeoh, 2005; Rodan, 2016). Figure 31 and 32 below reveals manufacturing trade and manufacturing share of GDP in Singapore, respectively. In the early 1970s and 1980s manufacturing import in Singapore has been excessive of the export but in late 1990s a twist had been made which makes the manufacturing export to dominate the import leading to considerable trade surplus in this sector. Yet, manufacturing share as a share of GDP in Singapore on average has been more than 20 percent for decades indicating the industrialization pattern in the country (See below, figure 31 and 32).

Figure 31: Manufacturing Trade in Singapore Figure 32: Manufacturing Share of GDP in Singapore



Source: WDI Database

Industry Park and Local Economy Linkage in Singapore: The industrialization in East Asian countries including Singapore has been achieved by extensive strategic interventions by the government to ensure competitiveness through harnessing scale economies, building domestic production capacities, fostering technological upgrade and innovation, selective approach to trade openness, FDI and exchange rate management alongside creating national champions and global brands (Kumar, 2020).

In Singapore, SMEs is defined based on annual sales or turnover and number of workers. The government used several initiatives to support SMEs and Enterprise Singapore which is agency for developing local enterprises aiming at raising productivity, accelerating internationalization, and strengthening innovation has focused on strategic pillars such as developing human capital, building enterprise capabilities, strength the enterprise ecosystem and establish strong partnership and networks (Zhongming and Wei, 2020). In Singapore, the major key success factors for SMEs performance are attributed to a strong, visionary, and capable leadership, adopting operationally and contextually correct strategic approach; a committed, supportive, and strong management team; ability to identify and focus on market; ability to develop and sustain capability and strong customer and client relationship (Ghosh et al. 2001).

Vietnam

In Vietnam industry parks have contributed to the development of local supporting industries and services, to economic restructuring and creating jobs for a large part of the labor force. Yet, the parks also have limitations as a large amount of agricultural and residential land has been recovered to build and develop industry parks (Markowski et al., 2019). Figure 33 below presents the percentage manufacturing export and import of Vietnam out of its total merchandise export and import respectively. Both the share of manufacturing export and import are considerably high over time. Yet, in early periods manufacturing trade was negative but Vietnam has managed to twist the pattern and managed manufacturing trade surplus with export exceeding the import of manufacturing merchandise in the country (see figure 29). Likewise, figure 34 depicts the share of manufacturing to GDP in Vietnam overtime. On average, manufacturing has been more than 17 percent as a share of GDP indicating considerable share which positively contributes to the industrialization pate of the country overtime.

Figure 33: Manufacturing Trade in Vietnam

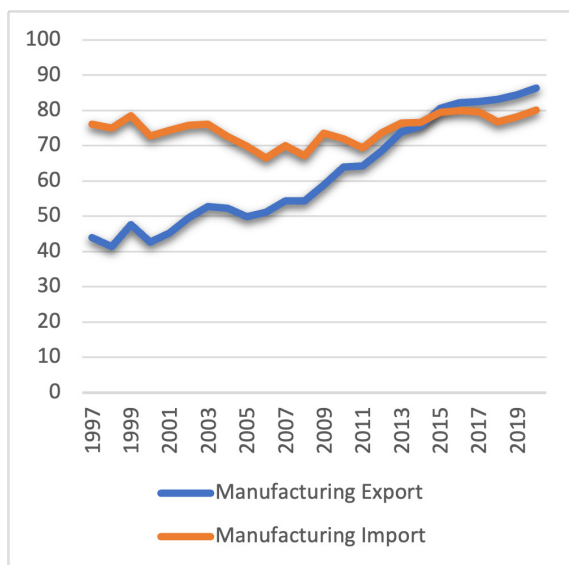
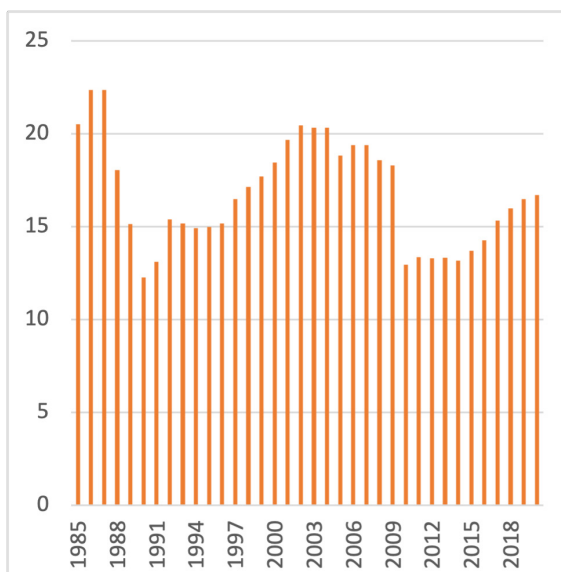


Figure 34: Manufacturing Share to GDP in Vietnam



Industry Park and Local Economy Linkage in Vietnam :In Vietnam, studies show that there is a relative difference in average income of households per capita income between industrial park households and non-industry park households. Average income received by industry park employees is higher than their counterparts indicating positive impact of the parks on the livelihood of the households (Khuong and Quoc, 2016; Markowski et al., 2019). Yet, employee job satisfaction, employee work motivation, ethical leadership and organizational justice had significant impact on the performance of the employees and the productivity in the industrial park firms (Khuong and Quoc, 2016). Basically, the development of key economic zones in Vietnam has been one of important economic development policies implemented since 1997 (Tran et al. 2019). The government in Vietnam has worked to bring shared development and spreading it to all people in the economy and all geographical area of administration to increase the specialization, increases resources use efficiency that can accelerate the development of regions in the country though results has been quite limited (Tran et al. 2019).

Industry Parks in Ethiopia

The Bole Lemi II and Debre Birhan industry parks are relatively the best practices in Ethiopia in terms of value chain as they have factories that connected their respective production with the local economy. For instance, Soufflet malt Ethiopia is a factory located at Bole Lemi industrial park in the outskirts of Addis Ababa, the capital city of Ethiopia. It is a malt factory aimed at producing 60 ,000 tons of malt yearly and created a linkage with over 20, 000 farmers located and is working on the import substitution direction of the country (Borkena, 2022; IPDC, 2022).

Likewise, Boortmalt malting company being originated from France is in Debre Birhan industry park addressing the growth in the number of breweries in the country alongside rising demand for malt (Addis Fortune, 2017; IPDC, 2022). In both cases, the factories are working conciding with import substitution strategy and are relatively better in terms of linkage to the local economy by taking raw materials, delivering extension service trainings on standards, and saving foreign exchange that could have been used to import the malt from the rest of the world.

Integrated Agroindustry’s in Ethiopia: The industry sector in Ethiopia is expected to contribute to GDP growth, job creation, small and medium sized enterprise (SMEs) development as the overall goal of Industrial Development Strategy (IDS) is to accelerate structural transformation via enhanced industrialization, by raising share of manufacturing industry to GDP from 4 to 18 percent in 2025 and the industry share to GDP from 13 to 25 percent in the same year (UNIDO, 2017). Likewise, Agro-industry development in the country is expected to realize the potential of agriculture modernization, rural industrialization and ultimately the structural transformation through operational advanced industrialization process in the country (Ghione et al. 2021). This accordingly has led to the high recognition of integrated agro-industrial parks (IAIPs) by the government alongside rural transformation center (RTC) aiming at integrating agricultural value chain actors (UNIDO, 2017).

The Integrated-Agroindustry zone in Ethiopia has exemplary patterns in terms of established value

chain that empowers the local economy and production engagement of different stakeholders within the economy to promote industrialization and economic diversification in the country. For instance, the case of Yirgalem Integrated Agro-industry park is established with an aim to increase export of processed agricultural products and to substitute import. It also aims to induce employment and value chain with the local farmers in the country. This site started production in 2021 and manufacture avocado oil, honey, milk, and coffee capsules (UNIDO, 2021). It uses the raw materials from local firms which strengthens the impact of the park on the local economy linkage. Yet, the factory gives a training to local suppliers on the standard requirement of raw materials to be delivered (UNIDO, 2021; BIE 2022).

This and the previous section of the study provides of the study provides theoretical framework against which the performance of industry park in terms of the local economy impact can be evaluated alongside benchmarking analysis of ASIAN countries best practice in terms of empowering their local SMEs for their respective industrialization process. The case of Ethiopia in terms of SMEs performance, key challenges and relatively best industry park performance are concisely presented.

Several factors have been identified to explain the success for the performance of SMEs and their respective strong linkage with SEZs. The factors include strategic opening and industrial reform policy; governance quality; attracting relevant abilities to use the absorptive capacity advantage of the talents by SMEs; application of mature technologies; good market prospect; intensive professional and technical training; high labor productivity; promoting labor union; corporate strategies.

Besides, strong customer relation strategy; service delivery reputation; promoting sustainable research and development (R&D); international marketing strategies; innovative cluster policy by government and relevant stakeholders; strong partnership with research centers, large local and FDI firms, universities and local SMEs; assuring the establishment of strong linkages and spillovers of SEZs with local SMEs; providing reliable infrastructure, creating conducive political and business environment also are key factors.

Still, integrating SEZs into national development strategies; selective approach to trade openness, FDI and exchange rate management; creating national champions and global brands; developing human capital; building enterprise capacities; establish strong partnership and networks; adopting operationally and contextually correct strategic approach for the local economy and SMEs; ethical leadership and organizational justice; regional administration empowerment; shared responsibility of stakeholders are crucial success factors (Ghosh et al. 2001; Khuong and Quoc, 2016; Tran et al. 2019; Kumar, 2020; Zhongming and Wei, 2020; Mugano, 2021).

There are also different challenges identified that constraints the strong linkage of SEZ with local economy and SMEs. These include limited finance and loan availability; low quality of raw materials and inputs compared to the global standard requirement; constrained tariff incentive structure; limited skill and capacity of the SMEs on production and marketing; inadequate interest of local investors to engage in SMEs or manufacturing firms; unfavorable /or neutral rules and regulations for local SMEs development.

Furthermore, limited foreign exchange availability; low product marketability in the local and international market; limited progress follow up; inadequate specific formal structure established to link the industry park with the local economy specifically the SMEs; Inadequate infrastructure availability for local SMEs; low technology utilization capacity of local SMEs; unfavorable political environment; reliable data availability constraint on SMEs; major supply chain constraint are also key constraints for strong linkage between SEZs and SMEs (UNIDO, 2016. WBG, 2018; Quak, 2019; Tran et al. 2019).

6. Policy Implications

The study provides the following key implications to be addressed in the short run, medium term and long run:

1. Short run:

- ▶ **Mix the export promotion strategy** of the country with **import substitution strategy for selected manufacturing products** with **strong local value chain** potential that can be produced by local SMEs. These include **leather production, agro-processing, textile, apparel, selected fruits such as apple** which has extensive market demand globally, **avocado** (strong local supply chain) etc.
- ▶ **Introduce apparent-ship of SMEs employees** (Managers, technicians, experts, etc) in industry park FDI firms so that they can absorb know-how and technology and use it for own.
- ▶ **Introduce strong monitoring and evaluation** of the industry park intervention and its spillover effect on the local economy.
- ▶ **Introduce global quality standard** for local SMEs on raw material production and distribution to FDI firms.
- ▶ **Policy alignment program** to harmonize SMEs policy, Industry Policy, Industry Park Strategies, trade policy and logistics strategy in Ethiopia.

2. Medium Term:

- ▶ **Finance** has been a bottleneck for SMEs operation that creating **flexible credit availability finance structure** is very demanding.
- ▶ **Introduce incentive mechanisms** for SMEs such as **tax holidays, land availability, private-public ownership arrangement, joint venture establishment with foreign firms, SMEs industry park as a pilot project**, etc.
- ▶ **Foreign exchange** has been one major pitfall for SMEs that this can be managed through the intervention on **the exchange rate policy, enforcing local market to be as a source for raw materials** to reduce the demand for foreign exchange. Yet, **by increasing the capacity of SMEs to make them one means of foreign exchange generation through their respective export.**
- ▶ **Capacity building hub** for Ethiopian SMEs in terms of **absorbing ability of the knowledge and technology from FDI firms** alongside **delivering applied training on global standard and quality requirements of export merchandize, marketing to the global market, branding and entrepreneurship.**

3. Long term:

- ▶ **Modernizing the logistic system is key to** improve the industry park performance and its linkage with the local economy.
- ▶ **Working culture and preference of firms on quick return trade sector has been one constraint** on the low performance of SMEs that a combination of instruments such as regulations and education policy shall be used to shift this pattern positively in the long run if to bring structural shift.
- ▶ **Structural change** through inducing agricultural productivity, manufacturing growth, service sector expansion with strong interlinkage among themselves.

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Annex

AI: Companies and Country of Origin in Each Industry Parks in Ethiopia

Table 15: Summary of Companies Across Industry Parks

No	HIP	BLIP	KIP	MIP	AIP	DBIP	DDIP	BDIP
1	PVH Manufacturing PLC	New wide Garment Ethiopia Branch Company	Carvico Ethiopia	SCM	Antex Textile	Ek Knitting	HAN PLAST Manufacturing PLC	hop lun
2	JP Textile (Ethiopia) plc	George Shoe Ethiopia PLC	Pungkook Ethiopia PLC	Strathmore Apparel	Sunapparel Manufacturing PLC (sunshine-New-bridge Local sale)		Seamless Apparel Manufacturing PLC	
3	Arvind Lifestyle Manufacturing PLC	Arvind Lifestyle Apparel Manufacturing PLC	Saytex Spinning PLC	KPR Exports PLC	kindom Ethiopia		S&D Chemicals PLC	
4	Quadrant Apparel PLC	Vestis Garment production PLC	Trybus Bridgtex PLC				Andrea Shoes Manufacturing PLC	
5	Chargers Fashion Technologies PLC	Jay Jay Garment PLC	Seyang				Wuxi	
6	Isabella Socks Manufacturing PLC	Lyu Shoutato Factory PLC.	Fuanly					
7	Hidramani Garment PLC	Evertop Sports Wear Plc.						
8	Silver spark Apparel Ethiopia PLC	C & H Garment PLC						
9	Tal Garment PLC	Shints ETP Garments PLC						
10	Centery Garments PLC (PTU)	KEI Industrial Engineering Consultancy PLC						

No	HIP	BLIP	KIP	MIP	AIP	DBIP	DDIP	BDIP
11	EPIC Apparel PLC	Ashton Apparel Manufacturing PLC						
12	Ontex Hygienic disposal PLC							
13	Hela Indochine Appareal LTD							
14	Indochine apparel Ltd							
15	Everest textil co.Ltd							
16	Jiangsu golden textile							
17	Best international Garment PLC							
18	Sumbiri Intimate Apparel PLC							
19	ITL Apparel labelling solution plc							
20	JAS Holding							
21	Nasa Ethiopia							
22	JPGE							

Table 16: Bole Lemi (I & II) Industrial Park Companies

No	Name of Companies	Country of origin	Sector/the existing product type product	Remark
1	New Wide Garment Ethiopia LTD Company	Taiwan	Garment	
2	Arvind Lifestyle Apparel Africa	India	Garment	
3	Vests Garment Production plc	India	Garment	
4	Jay Jay Garment PLC	India	Garment	
5	Lyushoutao factory plc.	China	Leather Hand Gloves	
6	Ever Top sportswearplc.	Korea	Garment	

No	Name of Companies	Country of origin	Sector/the existing product type product	Remark
7	SUMEC Eth. Textile & Manufacturing Plc.	China	Garment	
8	Shints ETP Garment plc.	S. Korea	Garment	
9	KEI Industrial engineering consultancy PLC	Korea	Garment	
10	Ashton Apparel Manufacturing	India	Garment	
11	BJI Ethiopia(shifted Sheds)	China	Corona kits	
12	Amalga Engineering	Ethiopia	Stove	0.0714
13	Shangtex land	China	Textile	
14	Suflie land	France	Malt	

Table 17: Hawassa Industrial Park Companies

No.	Name of Companies	Country of origin	Sector/the existing product type product	Remark
1	JP Textile (Ethiopia) PLC.	China	Textile	
2	Arvind Lifestyle Manufacturing PLC	India	Garment Nainly Jeans	
3	Quadrant Apparel PLC	China	Garment	
4	Chargers Fashion Technologies PLC	France & Ethio	Garment	
5	ITL Apparel labeling solution plc	S. Africa	Accessory lebling	
6	Isabella Socks Manufacturing PLC	Sirilanka	Socks	
7	Hirdaramani Garment PLC	Sirilanka	Garment	
8	Silver Spark Apparel Ethiopia PLC	India	Garments mainly jeans & suit	
9	Tal Garment PLC	China/	Garment	
10	Century Garments PLC	Indonesia	Garment	
11	EPIC Apparel PLC	China	Garment	
12	Ontex Hygienic disposal PLC	Belgium	Diper	
13	Hela Indochine Apparel	Sirilanka	Apparel	
14	Indochine Apparel PLC	China	Apparel	
15	Everest Textile S.C	China	Garment	
16	KGG garment /Jiangsu golden Textile (KGG)	China	Garment	
17	Best International Garments PLC	India	Garment	
18	Sumbiri Intimate Apparel	Indonesia	Garment	
19	JAS Holding	Ethiopia	Garment	0.0909
20	NASA Garments PLC	Ethiopia	Garment	
21	JPGE/JP Garments (Ethiopia) PLC	China	Garment	
22	Seamless Apparel Manufacturing PLC	India	Garment	

Table 18: Kombolha Industrial Park Companies

No.	Name of Companies	Country of Origin	Sector/the existing product type product	Remark
1	Carvico Ethiopia Plc	Italy	Textile	
2	Fuanlai Textile Ethiopia	PRC	Textile	
3	Pungkook Bag Manufacturing Plc	South Korea	Leather	
4	Trybus Bridgetex Ethiopia	USA&PRC	Garment	0

Table 19. Mekele Industrial Park-Companies

No.	Name of Companies	Country of origin	Sector/the existing product type product	Remark
1	SCM	India	Garment	
2	Strathmore apparel	Sri Lanka & Bangladesh	Garment	
3	KPR exports plc.	India	Garment	
4	Intrade Ethio. Co (UK)LTD	Sudan/UK	Garment	
5	Laurence foot wear	China	Shoes or leather products	
6	Royal medical dressing textile	Ethiopia & China	Textile	
7	GS Ethiopia textile	China	Garment	
8	Hail Michael garment	Ethiopia	Garment	0.166
9	Loutus (MBM)	India	Garment	

Table 20. Adama Industrial Park Companies

No.	Name of Companies	Country of origin	Sector/the existing product type product	Remark
1	Antex Textile PLC	China	Textile & Garments	
2	YKK	Japan	Textile & Garments	
3	Eagle pack	Ethiopian	Textile & Garments	0.1111
4	Charter Vencher	China	Textile & Garments	
5	Joten	Norway	Textile & Garments	
6	GTA	China	Textile & Garments	
7	Portwest	England	Textile & Garments	
8	King dom land 32	China	Textile & Garments	
9	Sunshine Land 80	China	Textile & Garments	

Table 21: Dire Dawa Industrial Park Companies

No.	Name of Companies	Country of origin	Sector/the existing product type product	Remark
1	Wuxi Number One Cotton Textile (Manufacturing P.L.C	China	Garment &Textile	
2	Andrea Shoes Manufacturing P.L.C	Italia	Apparel	
3	Hanplast Manufacturing P.L.C	Ethiopia	Packaging for Cement	0.4
4	S&D Chemical Manufacturing P.L.C	Sri Lanka	Garment &Textile	
5	Elauto Engineering	Ethiopia	Vehicle assembly assemble	New

Table 22: Debr Birhan Industrial Park Company

No	Name of Companies	Country of Origin	Sector/the existing product type product	Remark
1	Ek Knitt	Spain	Textile & Garments	
2	Sun Apparel	Taiwan (china)	Garments	
3	Shang chang	China	Garments	0
4	Bolt malt	France	Agro processing	

Table 23. Jimma Industrial Park Company

No.	Name of Companies	Country of Origin	Sector/the existing product type product	Remark
1	Huajian International Light Industry City (Ethiopian) Plc.	China	Apparel & Textile	0

Table 24: Bahir Dar Industrial Park Company

No.	Name of Companies	Country of Origin	Sector/the existing product type product	Remark
1	Hop Lun Ethiopia Investment	China	Apparel	0

Table 25: Addis Industry Village Companies

No	Name of Companies	Country of Origin	Sector	Remark
1	Zelalem habte Shoe & Sole Factory Shoe	Ethiopia	leather / Shoe	100
2	African Cottons PLC	Ethiopia	Garment and Textile	
3	Cristal Capital Service S.C	Ethiopia	leather / Shoe	
4	Yunus Garment PLC	Ethiopia	Garment	
5	Concept International Ethiopia PLC	Ethiopia	Garment	
6	Pittards products Manufacturing S.C	Ethiopia /UK	leather products	
7	Dire Industries P.L.C	Ethiopia	leather / Shoe	
8	Tezal Global Foot Wear Industries PLC	Ethiopia	leather products	
9	OASIS Abyssinia PLC	Ethiopia	Garment	

No	Name of Companies	Country of Origin	Sector	Remark
10	TRIO CRAFT PLC	Ethiopia	Garment	
11	Wossi Garment PLC	Ethiopia	Garment	
12	LUCY GARMENT INDUSTRIES PLC	Ethiopia	Garment	
13	Tamra Techno packaging PLC	Ethiopia	Garment	
14	Oke Jamaica shoe plc.	Ethiopia	Leather / Shoe	

Table 26: Kilinto IP Companies

No	Name of company	Country of Origin	Sector	Remark
1	Africure Pharmaceuticals Ethiopia PLC	Mauritius	General Medical products	
2	Dagim Dereje Pharmaceuticals	Ethiopia	General Medical products	0.9
3	Ethiopian Pharmaceuticals Manufacturing SC	Ethiopia	Beta Lactams	
4	Glocare Pharma Manufacturing PLC	India	General Medical products	
5	Lewi Pharmaceuticals	Ethiopia	General Medical products	
6	Prime point packaging PLC	Ethiopia	General Medical products	
7	Zhende Ethiopia Medical PLC	Ethiopia	General Medical products	
8	New Millinum	Ethiopia	Medical Kits manufacturing	
9	Royal	Ethiopia	Face Mask manufacturing	
10	TKBD	Ethiopia	Face Mask manufacturing	

Table 27: ICT Park Companies

No	Name of Companies	Country of Origin	Sector	Remark
1	Africom Technology	Ethiopia	IT Enabled Business	
2	Hambil Information Technology	Ethiopia	IT Enabled Business	
3	Kestor Computer	Ethiopia	IT Enabled Business	
4	Emmajack Software	Ethiopia	IT Enabled Business	
5	Ronabit Consults	Ethiopia	IT Enabled Business	
6	Infosys Plc	Ethiopia	IT Enabled Business	
7	Custer Computer Plc	Ethiopia	IT Enabled Business	
8	Excced It System	Ethiopia	IT Enabled Business	
9	Sometec Trading Plc	Ethiopia	IT Enabled Business	0.8
10	Neuronet Plc	Ethiopia	IT Enabled Business	
11	Gissila General Busness(E-System Africa)	Ethiopia	IT Enabled Business	
12	Cimac Ink Ethiopia	Ethiopia	IT Enabled Business	
13	Fkg Degital Tecnology	Ethiopia	IT Enabled Business	
14	Orange Digital Center	France	IT Enabled Excellence	
15	Koica	Korean	IT Enabled Excellence	
16	Ahadu Tech ICT Solution	Ethiopia	IT Enabled Business	
17	Online System House	Ethiopia	IT Enabled Business	
18	Uds	Ethiopia	IT Enabled Business	



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