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Assessment of Performance of Ethiopia's Special Economic Zones Under the Home-grown Economic Reform Agenda: Evidence from Employment and Exports in selected SEZs (2017 – 2025)

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Assessment of Performance of Ethiopia's Special Economic Zones Under the Home-grown Economic Reform Agenda: Evidence from Employment and Exports in selected SEZs (2017 – 2025)

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Declaration of Originality

I hereby declare that this thesis entitled "Assessment of Performance of Ethiopia's Special Economic Zones Under the Home-grown Economic Reform Agenda: Evidence from Employment and Exports in selected SEZs (2017 – 2025)" is my original work and has not been presented to any other university for a degree. All sources of information and data have been duly acknowledged and cited.

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Letter of Approval

This is to certify that the thesis prepared by Feven Mulugeta entitled "Assessment of Performance of Ethiopia's Special Economic Zones Under the Home-grown Economic Reform Agenda: Evidence from Employment and Exports in selected SEZs (2017 – 2025)" Submitted in partial fulfilment of the requirements for the Degree of Master of Art in Public Policy and Development Management (MAPPDM) and complies with the regulation of university and meets the accepted standards with respect to originality and quality.

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Abstract

This study examined the performance of Special Economic Zones (SEZs) in Ethiopia under the Home-Grown Economic Reform Agenda focusing on employment and export outcomes as well as a discussion on social and environmental changes. It aimed to assess the performance of SEZs under HGER by analysing measurable economic results and briefly discussing institutional and operational changes that shaped these outcomes. In doing so, the study aimed to address a gap in existing studies which focus on evaluating SEZ performance with limited indicators without consideration of recent policy reforms and implementation dynamics. The research used mixed methods approach combining quantitative analysis that focused on examining employment and export performance and qualitative analysis that looked into how the reforms were experienced and implemented in practice. Both approaches compared pre reform (2017 – 2019) and post reform (2020 – 2025) periods. For the quantitative analysis descriptive statistics were complemented by econometric analysis using a fixed effects panel model that removes permanent differences across SEZs ensuring the estimated effect is driven by changes over time rather than structural differences between zones and across time. For the qualitative analysis document review and a semi structured interview with relevant stakeholders was used to assess the perceived impact of HGER measures on SEZ operations, incentives and support provided, challenges and opportunities and social and environmental considerations. In total, 14 semi structured interviews were conducted across three selected SEZs including Hawassa, Bole Lemi and Adama, involving SEZ managers, workers representatives and government officials. The findings show that average employment and export levels were higher in the post reform period with employment increasing by approximately 53 percent and exports by approximately 105 percent on average relative to the pre reform period. However, these changes fluctuated across zones and time suggesting that the study does not provide strong evidence to attributable measurable performance improvements directly to the reforms. The qualitative findings helped explain this pattern by showing that there are gradual improvements in things related to governance, institutional coordination and social and environmental standards but structural challenges related to infrastructure inefficiencies, foreign exchange constraints, logistical issues and labour related problems persist limiting performance and contributing to the fluctuations observed in the quantitative results. The findings suggest that the reforms may have contributed to improvements in the institutional and operational environment of SEZs although their measurable economic effects remain unclear highlighting the need for continued institutional strengthening and improved policy coordination.

Key Words: Special Economic Zones, Home Grown Economic Reform Agenda, Export, Employment, Social and Environmental Impacts.

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Abbreviations and Acronyms

AfCFTA	African Continental Free Trade Area
CSA	Central Statistical Agency
EIC	Ethiopian Investment Commission
EIH	Ethiopian Investment Holdings
FDI	Foreign Direct Investment
GTP	Growth and Transformation Plan
HGER	Home Grown Economic Reform Agenda
ICT	Information and communication technology
IPDC	Industrial Parks Development Corporation
MIC	Manufacturing Industry Council
MoF	Ministry of Finance
MoI	Ministry of Industry
MoPD	Ministry of Planning and Development
MSME	Micro, Small, and Medium Enterprise
NBE	National Bank of Ethiopia
PPP	Public Private Partnership
REER	Real Effective Exchange Rate
SEZ	Special Economic Zone
SME	Small and Medium Enterprise
SOE	State Owned Enterprise
TVET	Technical and Vocational Education and Training
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organization

Chapter One: Introduction

1.1 Background of the study

Special Economic Zones (SEZs), geographical areas often attended by business enabling policies and special incentives, have historically been used by many developed and developing countries as a policy tool to promote industrialization and economic transformation. They've been seen as an area of focus in the economic growth scene especially with developing countries like Ethiopia working on shifting from low productivity sectors such as traditional agriculture to higher productivity sectors like manufacturing and modern services to achieve a sustained and inclusive economic development (Hazakis, 2014; Zeng, 2010).

Globally, SEZs are defined as geographically demarcated areas operating under special fiscal and regulatory regimes to promote exports, create employment opportunities and attract investment. The adoption of SEZs as part of broader industrial policy frameworks is aimed at integration to global value chains and achieving structural transformation and their implementation in several African countries including Ethiopia can be attributed to the success of the SEZs in East Asia and other regions (Farole & Akinci, 2011; Zeng, 2001, UNCTAD, 2021).

In Ethiopia, the concept of SEZs gained traction in the early 2000s as part of the country's industrial development strategy. The approach was first implemented through industrial parks but was later formalized under the Growth and Transformation plans (GTP I and II). This was then further reinforced by the Home-grown economic reform agenda (HGER) which was launched in 2019 and moved to its second phase (HGER II) in 2023.

The Home-Grown Economic Reform Agenda was launched with the main objective of creating a sustainable economic growth through private investment and structural transformation. The reform contains three main pillars at the macro financial, sectoral and structural levels. The macro financial reforms focus on reducing risks associated with public debt, stabilizing inflation, lowering external vulnerabilities, and enhancing growth, exports and investment, while the structural reforms are aimed to address challenges restricting private sector growth. The sectoral reforms focus on addressing market failures and sectoral regulatory and investment constraints. With this sectoral pillar, manufacturing is one of the five selected priority sectors for which measures will be taken to promote investment (Ministry of Finance, 2020).

Studies suggest that industry sector and manufacturing in particular, benefits from economies of scale, clustering effects and innovation which had made it the engine of sustained growth worldwide. Agricultural commodities like coffee, spices and tea account for more than one third of total exports of Ethiopia showing dominance in the country's current export structure while machinery, Industrial inputs and chemicals make up large amount of the import. This imbalance shows the need for value addition and diversification toward industrial goods and SEZs play a critical role in this transformation (Gebrehiwot, 2021).

However, although traditional economic theories emphasise the importance of manufacturing in driving structural transformation and economic growth, recent evidence shows that manufacturing in Ethiopia has not performed as strongly as expected. According to World Bank data, manufacturing value added accounted for only 4 percent of GDP in 2024, indicating a limited contribution of the sector to overall output. Recent analysis by the International Growth Centre also finds that manufacturing's share in GDP, employment, and exports remains minimal despite sustained policy support, while labour has increasingly shifted out of agriculture mainly into low-productivity informal services rather than into manufacturing. This suggests that the manufacturing sector has not yet delivered the scale of employment absorption, export diversification, and structural transformation anticipated under Ethiopia's industrial development strategy. The UNDP Ethiopia Quarterly Economic Profile similarly notes that while the services sector remains resilient, manufacturing continues to be weak. These trends raise important questions about the continued prioritisation of manufacturing under the Home-Grown Economic Reform Agenda. (Gebreyesus & Abegaz, 2025).

Some academic literature on SEZs show that their effectiveness is context dependent and usually is shaped by the interplay of governance structures, local institutions and the broader policy environment. Hazakis (2014) explains how the success or failure of SEZs is affected not only by the regulatory frameworks and incentives provided but also by the dynamic interaction between economic agents and institutional structures withing the SEZs. This is a sentiment echoed by Farole and Akinci(2011) who reiterate that SEZs should not be viewed as a one size fits all solution but as policy tools whose outcomes depend on their integration with national development strategies and the quality of their implementation.

Prior research suggests that SEZs could contribute largely to the manufacturing sector of a nation and facilitate structural transformation which has historically contributed to the economic growth of developed nations. In these countries, shifting from low to high productivity sectors is expected to

bring the needed change in economic outcomes. Low productivity sectors like agriculture while being essential for the economy are constrained by land and give diminishing returns leading to limited gains compared to other sectors. And the service sector while offering employment opportunities, it experiences slower productivity growth unless linked to knowledge intensive or high-tech activities.

Between 2004 and 2018, Ethiopia has experienced over a decade of rapid real GDP growth averaging more than 10% annually. This growth was largely driven by a public investment led model that prioritized infrastructure and human capital development which while resulting in significant poverty reduction and improvement in access to education, health and basic services, it also led to huge macroeconomic vulnerabilities like persistent trade deficits, rising external debt, high inflation and foreign exchange shortage. Issues with regulatory framework and access to finance constrained the private sector's growth and led to low productivity, limited export diversification, weak integration to the global value chain and the overall weakening of the manufacturing sector (Gebrehiwot, 2021).

Designed to achieve inclusive and sustainable development, address macroeconomic imbalances and promote private sector led growth, the Home-Grown Economic Reform Agenda (HGER) was introduced as a comprehensive national policy framework in 2019 with it currently being in its second phase of implementation (HGER 2.0) starting form 2023/24. The 2019 version of HGER contained three main pillars of macroeconomic, structural and sectoral reforms while the HGER 2.0 is structured four pillars of macroeconomic, investment and trade sector, productive sector and public sector reforms. On the first phase of HGER, stabilizing inflation, improving external balances and reducing public debt are some objectives carried out under the macroeconomic pillar. Improvement of business environment, streamlining of regulations and strengthening of public sector efficiency are among the focus of the structural reforms. The sectoral pillar focuses on manufacturing, agriculture, tourism, mining and ICT sectors with the aim of addressing issues with regulation and market failures in order to promote productivity and investment ((Ministry of Finance, 2024).

Both phases of the HGER refer to SEZs as strategic tool for industrialisation, attracting FDI, and export growth with key direct measures outlined in the agenda including: Establishing a legal and regulatory framework for SEZs (SEZ Proclamation No 1322/2024), Improving logistics, infrastructure and customs processes of SEZs, providing targeted incentives and supports for SEZ development and operation, enhancing linkages between SEZs, industrial parks and the broader economy, working on skills development and labour market reforms to support SEZ based industries,

and promoting private sector participation and public private partnerships in SEZ development. Aside from the interventions directly outlined to promote SEZ development, many of the broader HGER reforms are expected to have huge indirect effects on SEZ performance. A stable environment that will strengthen SEZ investment and operation could be created by implementing measures related to exchange rate management and inflation control that will affect the macroeconomic scene. To reduce transaction costs and improve the trade and logistics scene, measures like logistics liberalization, customs digitalisation and infrastructure investment could be effective. Initiatives on financial sector deepening, public sector and governance reforms and skills and labour market reforms are expected to positively impact the performance of SEZs (Ministry of Finance, 2024).

A strong monitoring and evaluation system to assess the impacts of SEZs is needed especially with SEZs being considered as a tool to promote industrialization and contribute to economic development. Conducting robust studies in this area will help us understand whether SEZs are achieving their intended objectives and to identify future areas for reform. As SEZs receive incentives and policy support, in addition to studies on their economic outcomes and performance, there is also a huge importance in considering the social and environmental dimensions of SEZ performance (Alexianu et al., 2019: Hazakis, 2014).

This is particularly relevant in Ethiopia's context where the HGER has introduced significant changes to the policy landscape for which ongoing assessment of SEZs performance across economic, social and environmental dimensions is needed. The manufacturing sector and special economic zones of Ethiopia are receiving policy support but there aren't many studies on the performance of SEZs in Ethiopia across multiple economic, environmental and social dimensions within the context of the implementation of the Home-grown Economic Reform Agenda.

This research provides an evidence-based assessment of the performance of SEZs in Ethiopia under the Home-grown economic reform agenda focusing on employment and export figures from selected SEZs with qualitative discussion on social, environmental and institutional changes. The assessment shows how SEZs are performing and whether current strategies are supporting their growth. Their performance was studied within the context of the implementation of HGER and the reforms under HGER will be treated as the main independent variables with a focus on macroeconomic measures, policy changes, regulatory improvements and institutional developments introduced under HGER.

1.2 Statement of the Problem

Under the Home-grown Economic Reform Agenda (HGER) which came into effect from 2019 and with its second phase HGER II in 2023, Ethiopia has designed and is implementing ambitious economic reforms aimed at promoting economic growth. Within this reform, manufacturing is one of the priority sectors and the development and expansion of Special Economic Zones is considered a strategic tool to propel industrial growth, attract foreign direct investment and create employment opportunities. The legal foundation for SEZs in Ethiopia and their role in creating an export led growth is outlined in the SEZ proclamation No. 1322/2024 ((Ministry of Finance, 2024).

Although SEZs have gained recognition for their potential to promote structural transformation, attract investment and create employment, there is limited clear evidence on whether they are actually achieving these outcomes in the Ethiopian context. Existing evidence on industrial parks, which form the core of SEZs in Ethiopia, shows mixed and inconclusive results. While some studies highlight increases in export earnings and job creation, others point to challenges related to low productivity, high worker turnover, operational inefficiencies and weak linkages with the domestic economy (Guteta & Worku, 2022; Zhang et al., 2018). This creates uncertainty regarding the actual effectiveness of SEZs in delivering their intended outcomes and raises concerns about whether they are consistently contributing to industrialisation and structural transformation objectives.

With the implementation of HGER, new sets of macroeconomic, structural and sectoral reforms have been introduced (Ministry of Finance, 2020). Despite these policy changes, there is still limited empirical evidence on whether SEZ performance has improved under the reform framework. Most existing studies focus narrowly on industrial parks and rely on a limited set of economic indicators such as exports and employment. As a result, they provide only a partial understanding of SEZ outcomes and do not adequately capture how recent reforms have influenced broader performance dimensions.

With recent reforms and new legal frameworks introducing changes in SEZ operational and governance structures, it remains unclear whether these changes have addressed previously identified challenges. Earlier studies highlight persistent constraints including weak institutional coordination, limited integration with local value chains, infrastructure deficiencies and difficulties in attracting and retaining foreign investment (Zhang et al., 2018; Guteta & Worku, 2022; Farole & Moberg, 2014). However, there is insufficient evidence on whether the reforms introduced under HGER have improved these conditions or whether such constraints continue to limit SEZ performance. This creates a clear policy concern regarding the effectiveness of current reform efforts.

An additional concern relates to broader structural transformation trends in Ethiopia. Recent empirical evidence shows that, despite sustained policy attention and investment, the manufacturing sector has not expanded as expected, with a relatively low contribution to GDP, employment and exports. For instance, manufacturing value added accounted for only around 4 percent of GDP in 2024, indicating a limited contribution to overall economic output. Furthermore, recent studies show that manufacturing's share in GDP, employment and exports remains minimal, while labour has increasingly shifted from agriculture into low-productivity informal service activities rather than into manufacturing (Gebreeyesus & Abegaz, 2025). This trend is also consistent with broader evidence showing that structural transformation in Ethiopia has been uneven, with manufacturing failing to absorb labour at the expected scale. Given that SEZs are designed as key instruments to support manufacturing-led industrialisation, this raises a critical question about whether SEZs are effectively performing their intended role within the reform agenda. This raises concerns about whether SEZs are effectively supporting manufacturing-led industrialisation and highlights broader uncertainty about their role within Ethiopia's structural transformation strategy.

While there is a substantial body of research on SEZs and industrial parks globally, existing evidence on Ethiopia remains fragmented. Most studies focus on specific industrial parks or on individual performance indicators such as exports and employment, often providing partial insights (Farole & Moberg, 2014; Karambakuwa et al., 2020). There is limited integrative analysis that simultaneously examines economic, social, environmental and institutional outcomes, particularly within the context of recent reforms. As a result, the overall performance of SEZs under HGER remains insufficiently understood.

This study addressed these issues by providing an evidence-based assessment of the performance of SEZs in Ethiopia under the Home-Grown Economic Reform Agenda. The analysis focused on employment and export outcomes in selected SEZs and was complemented by qualitative insights on institutional, social and environmental dimensions. By examining performance within the context of recent reforms, the study contributes to a clearer understanding of the effectiveness of SEZs as policy instruments and provides insights relevant for improving their implementation.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this research is to assess the performance of Ethiopia's Special Economic Zones (SEZs) under the Home-grown Economic Reform Agenda (HGER) focusing on employment and export outcomes with qualitative insights on institutional and social changes.

1.3.2 Specific Objectives

1. To analyse the changes in employment levels in selected SEZs in Ethiopia before and after the implementation of HGER (comparing periods before and after 2019).
2. To examine trends in export performance of selected SEZs in Ethiopia's before and after the implementation of HGER.
3. To identify key operational challenges affecting the performance of selected SEZs in Ethiopia based on qualitative evidence.
4. To assess perceived institutional, social and environmental changes associated with SEZ operations under HGER using qualitative analysis.

1.4 Research Questions

1. How have employment levels in selected SEZs in Ethiopia's changed before and after the implementation of HGER?
2. How has export performance in selected SEZs in Ethiopia's changed before and after the implementation of HGER?
3. What are the key operational challenges affecting SEZ performance of selected SEZs in Ethiopia?
4. What institutional, social and environmental changes are associated with SEZ operations under HGER as perceived by key stakeholders?

1.5 Research Hypothesis

Hypothesis 1: Changes in employment levels in selected SEZs in Ethiopia's following the implementation of HGER.

- $H0_1$: The implementation of HGER has not led to a significant change in employment levels in selected SEZs in Ethiopia.
- $H1_1$: The implementation of HGER has led to a significant change in employment levels in selected SEZs in Ethiopia.

Hypothesis 2: Changes in export performance in selected SEZs in Ethiopia following the implementation of HGER.

- $H0_2$: The implementation of HGER has not led to a statistically significant change in export performance in selected SEZs in Ethiopia.
- $H1_2$: The implementation of HGER has led to a statistically significant change in export performance in selected SEZs in Ethiopia.

Hypotheses are formulated only for employment and export performance, as these variables are quantitatively measurable and suitable for econometric analysis. Social, environmental and institutional aspects of SEZ performance are examined throughqualitative methodsand therefore are not tested using formal hypotheses.

1.6 Significance of the Study

This study addresses gaps in existing research on the effectiveness of SEZs in Ethiopia by providing empirical evidence on the impact of recent policy reforms, it also contributes towards advancing the literature on SEZs by implementing multidimensional assessment of their performance, additionally the findings of this study inform future academic research into the relationship between economic reform agenda and SEZ performance.

In addition to its theoretical significance, the findings of this study offer some practical contributions by providing actionable insights for policy makers so they can refine SEZ strategies to better propel economic growth, by supporting SEZ managers, investors and development partners in making informed decisions to enhance operational effectiveness, by providing guidance for future administrative and legislative improvements, and by informing international development agencies and investors interested in Ethiopia's economic transformation and SEZ potential. This research not only fills an important knowledge gap but also supports more effective policy, practice and decisions thereby contributing to Ethiopia's economic transformation and development.

1.7 Scope of the Study

Geographically, the study focuses on operational Special Economic Zones (SEZs) within Ethiopia as defined by the SEZ proclamation No. 1322/2024. The quantitative analysis covers data from multiple SEZs, including Hawassa, Bole Lemi, Adama, Kombolcha, Dire Dawa Free Trade Zone and Debre Birhan, subject to data availability. However, the qualitative component of the study is limited to selected SEZs, specifically Hawassa, Bole Lemi and Adama, which are used as case studies for in-depth analysis.

The study primarily assesses SEZ performance using two measurable economic indicators: employment and export performance. These indicators form the core of the quantitative analysis. In

addition, the study explores institutional, social and environmental aspects of SEZ performance through qualitative methods, focusing on stakeholder perceptions rather than quantitative measurement of these dimensions.

The performance of SEZs is analysed within the context of the implementation of the Home-Grown Economic Reform Agenda (HGER). The study examines changes in SEZ performance before and after the introduction of the reform, with HGER-related macroeconomic, policy and regulatory changes considered as contextual factors influencing performance rather than directly measured causal variables.

Temporally, the study covers the period from 2017 to 2025. The years 2017–2019 represent the pre-reform period, while 2020–2025 represent the post-reform period, allowing for a comparative analysis of SEZ performance before and after the introduction of HGER.

In terms of **institutional scope**, the study considers key government actors involved in SEZ development and regulation, including the Ethiopian Investment Commission (EIC), Industrial Parks Development Corporation (IPDC), Ethiopian Investment Holdings (EIH) and the Ministry of Finance. However, the analysis does not attempt a comprehensive institutional evaluation but focuses on how institutional and policy changes are reflected in SEZ performance.

Finally, the findings of the study are limited to the selected SEZs, and the indicators analysed and therefore should not be interpreted as representing the performance of all SEZs in Ethiopia.

1.8 Organization of the Study

The thesis is structured into five chapters with the first chapter introducing the study by providing background, statement of the problem, research objectives and questions, significance of the study, scope of the study and limitations of the study. Chapter two contains a comprehensive literature review including theoretical review, empirical evidence, research gap and conceptual framework. Chapter three provides the research methodology including research approach, design, data source, collection, sampling and analysis methods. Chapter four presents an analysis and discussion of the results by referring to the findings obtained from the analysis. Chapter five contains conclusions and recommendations and suggestion areas for future research.

1.9 Limitation of the Study

One major limitation of the study lies in the fact that the implementation of the Home-Grown Economic Reform Agenda (HGER) and the formalization of SEZs in Ethiopia is relatively recent which may lead to long term impacts and trends not being fully observable. Additionally, the

qualitative analysis part of the study is done using purposive sampling of SEZs and stakeholders which may not capture the full diversity of experiences across all zones in the country. Furthermore, the quantitative analysis used dummy variable to compare SEZ performance before and after the implementation of HGER so it may not capture the full effect of the reform because observed changes could also be influenced by external factors beyond the reform. Despite these limitations, the study is done using mixed methods approach and employs triangulation of data sources which is intended to increase the validity and reliability of the findings. And for the quantitative analysis, the model uses error term to reflect the external factors affecting the performance of SEZs.

Chapter Two: Literature Review

2.1 Conceptual Literature Review

2.1.1 Special Economic Zones (SEZs): Definition, relevance and Objectives

Special Economic Zones (SEZs) have been serving as an instrument for economic growth of both developing and developed nations reflecting their global importance and adaptability across diverse contexts. SEZs are commonly defined as geographically delineated areas within a country where these areas have differing business and trade laws from the rest of the nation. These areas are provided with incentives like customs process that's simplified, administrative procedure that's streamlined, fiscal incentives like tax holidays and reduced bureaucratic procedures. (Alexianu et al, 2019)

Industrial policy and economic development measures have come to centre SEZs worldwide with SEZs expanding from fewer than 1,000 zones in the late 1990s to over 5,400 in 2019 showing the increasing belief in their potential to promote industrialization, investment and structural transformation. (Farole & Moberg, 2014).

SEZs have many objectives including promoting exports, FDI, technology transfer, employment and industrialization. Their policy rationale is mainly their potential to bring economic transformation by promoting competitive business environments, reducing transaction costs and concentrating resources. SEZs work to fix structural constraints that are hurdles to economic growth by providing incentives and favourable outcomes. (Duranton & Venables, 2018)

As they provide a competitive edge in the global contest for efficient internationally mobile investment, SEZs are seen as tools for piloting business reforms and putting investment in limited areas where nationwide reforms are difficult to implement. They address market failures like poor regulatory environments, inefficient infrastructure and issues with land markets, and they also serve as trial for policy allowing governments to test reforms and measure their impacts before scaling them to the wider economy. (Auty, 2011)

The relevance of SEZs is widely accepted and can be seen by their adoption in more than 140 countries as of 2019 having around 5,400 SEZs with almost three quarters of developing economies and nearly all transition economies implementing them. SEZs have been playing an important role in the economic transformation of several nations. In China, SEZs have accounted for 22% of national GDP, 60% of exports, 46% of FDI and creation of over 30 million jobs and in Mauritius, SEZs have facilitated the transition from an economy that was highly dependent on agriculture to a major

exporter of apparel and later to shifting to ICT and financial services. (Tang, 2020, Zeng, 2010, UNCTAD, 2019).

The modern version of SEZs began around late 1990s with one of the earliest successful examples being Ireland's Shannon Free Zone and the model gained momentum after China established its first SEZ in early 1980s known as Shenzhen which transformed from small fishing village to a global manufacturing hub. SEZs now have various forms like export processing zones (EPZs), free xones, technology parks, industrial parks, and eco industrial parks. (Zeng 2010, Tang,2020)

2.1.2 Characteristics of SEZs

Many literatures discuss the characteristics of SEZs, below are some of the common key characters SEZs commonly exhibit according to Farole & Akinci (2011) and Alexianu et al (2019)

- Geographic Delimitation: They have clearly defined boundaries being fenced and physically separated from surrounding territories.
- Regulatory Exemptions: These areas are provided with special legal and regulatory incentives including reduced tax rates, tax holidays, streamlined administrative procedures, duty free raw material imports and other incentives.
- Sectoral Focus: the zones may target specific industries like electronics, biotechnology, textiles or they may be multi activity depending on national development strategies.
- Infrastructure support: The zones enjoy provision of high-quality infrastructure like communications, reliable power and transport links which are often superior to those available in the nation.
- Governance and Management: SEZs have a range of autonomy and accountability with their management belonging either to private developers, government agencies or hybrid models.
- Single window clearance: SEZs receive simplified business registration, licensing and customs processes that reduce bureaucratic hurdles

(Farole & Akinci, 2011 Alexianu et al, 2019)

2.1.3 SEZs in Ethiopia

SEZs in Ethiopia which are often referred interchangeably as industrial parks are central to the country's industrialization and export led growth strategy. The concept of SEZs gained traction in the early 2000s in Ethiopia as part of the country's industrial development strategy. Prior to SEZs, the

approach was first implemented with industrial parks but later on got formalized under the Growth and Transformation plans (GTP I and II). Following their formalization, they began being developed and expanded quickly in mid 2010s as they were being listed by the government as catalysts for job creation and integration into global value chains. (Ministry of Finance, 2024).

SEZs in Ethiopia are being managed by a state-owned enterprise known as the Industrial Parks Development Corporation (IPDC). IPDC was set up in December 2014 and provides operational oversight of the parks and works on advancing Ethiopia's industrialization. IPDC currently operates under Ethiopian Investment Holdings (EIH), the country's sovereign wealth fund but was previously operating under the Ministry of Industry (MoI) prior to 2024. A manufacturing Industry Council (MIC) has been created to provide high level policy guidance, strategic oversight and coordination among key stakeholders in the manufacturing sector further strengthening the governance structure. (Industrial Parks Development Corporation, n.d.)

The Special Economic Zones Proclamation provides the legal basis for the establishment, governance and operation of the SEZs in Ethiopia. The SEZ proclamation and subsequent directives aim to improve transparency, attract investment and ensure efficient use of resources.

The incentives offered to both domestic and foreign investors to attract them into the SEZs include:

- Income tax holidays with investors receiving exemptions from income tax for up to 10 – 15 years depending on the sector, location and export share.
- Customs duty exemptions with capital goods, construction materials and raw materials needed for export being imported duty free.
- Exemption from export taxes for all products produced for export
- Losses incurred during the tax holiday can be carried forward for up to half the exemption period.
- Foreign investors can freely repatriate profits, dividends and proceeds from sales or liquidation.
- One stop shops are provided with comprehensive centralized services for permits, licensing, customs and banking.
- Access to land and infrastructure for investors with long term leases and factory sheds being provided.
- Work permits and visas will be easily accessible for expatriate staff and their families.
- SEZ based firms will receive access to foreign currency for importing inputs.

- Quality and compliance with support for achieving international certifications being provided.
- Subsidised utility rates with electricity and other utilities being provided at competitive rates.
- Guarantee against expropriation with investors being protected against expropriation and receiving compensation at market value if it occurs.

The following SEZs are currently the main focus of Ethiopia's industrialisation strategy:

- **Adama SEZ** (Oromia Region): Has 14 investors in 19 factory sheds with two additional private developer facilities. Its export oriented focusing on textile and garment manufacturing.
- **Bole Lemi SEZ** (Addis Ababa): Is a major export-oriented zone with 32 companies, 14 of which are operational mainly in apparel and other export activities. It's expanding into multi sector manufacturing including kitchen utensils and paint production.
- **Hawassa SEZ** (Sidama Region): Is a key driver of Ethiopia's garment industry hosting 15 active factories across 52 sheds. It's the first SEZ in Ethiopia to get various certifications like the ISO 9001, ISO 14001, and laboratory management certifications making it a leader in quality compliance and sustainability.
- **Dire Dawa Free Trade Zone** (Dire Dawa Region): Attracts strong investment interest particularly in trade and is anchored by manufacturing and logistics operations including electric vehicle assembly and cement packaging.
- **Kombolcha SEZ** (Amhara Region): Hosts three FDIs and two local enterprises and has a huge role in economic normalisation in a conflict affected area.
- **Debre Birhan SEZ** (Amhara Region): Hosts three companies across eight factory sheds focused on textiles for export to Europe and sports materials for the US market with some malt production.
- **Eastern Industrial Park** (Oromia Region): operates in light manufacturing of textiles and construction materials. Was operational since 2012 and is the first privately developed park.
- **Mekelle Industrial Park** (Tigray Region): Is mostly operational in textile and apparel production. Was opened in 2017 and has faced challenged due to regional conflict and instability.
- **Jimma Industrial Park** (Oromia Region): Was opened in 2019 and focuses on agro processing and light manufacturing production.

- **Kilinto pharmaceutical Industrial Park** (Addis Ababa): Was opened in 2020 and focuses on pharmaceuticals and medical supplies.
- **Bahir Dar Industrial Park** (Amhara Region): Was opened in 2020 and focuses on textiles and garments production
- **Arerti Industrial Park** (Amhara Region): Was opened in 2019 and focuses on building materials and light manufacturing.
- **Yirgaalem Integrated Agro Industrial Park** (Sidama Region): Was opened in 2020 and focuses on agro processing production.

2.1.4 Objectives and Expected Outcomes of SEZs

SEZs are commonly established to:

- Promote export growth
- Attract foreign direct investment (FDI)
- Generate employment
- Facilitate technology transfer
- Support industrial development

These objectives are based on the expectation that SEZs create a competitive and supportive business environment by reducing transaction costs and addressing structural constraints such as poor infrastructure and regulatory inefficiencies (Duranton & Venables, 2018).

Although SEZs have been widely adopted, their performance varies significantly across countries and contexts.

Factors contributing to the success of SEZs

- Strong institutional frameworks and governance
- Integration with national industrial policies
- Effective infrastructure and logistics systems
- Linkages with local firms and supply chains
- Stable macroeconomic and political environment

Successful examples such as China and Mauritius demonstrate how SEZs can drive structural transformation when supported by strong policy coordination and long-term commitment (Zeng, 2010).

Factors contributing to the failure of SEZs

- Weak institutional capacity and governance
- Limited integration with the domestic economy
- Over-reliance on incentives without productivity gains
- Infrastructure deficits
- Poor policy implementation

In many developing countries, SEZs have failed to generate expected spillovers, operating instead as isolated enclaves with limited impact on broader economic development (Farole & Moberg, 2014).

2.2 Theoretical Literature Review

2.2.1 Central Theoretical Framework

This study is primarily guided by the Structural Transformation and Agglomeration Framework.

This framework conceptualises SEZs as instruments that facilitate the movement of resources from low-productivity sectors to higher-productivity industrial activities, particularly manufacturing. SEZs are expected to support this process by attracting investment, promoting exports and generating employment (Rodrik, 2007; Farole & Moberg, 2014).

At the same time, agglomeration theory explains how clustering firms within SEZs can lead to productivity gains through:

- economies of scale
- knowledge spillovers
- improved access to inputs and services

Together, these frameworks provide a basis for analysing SEZ performance in terms of employment creation and export performance.

2.2.2 Supporting Theoretical Perspectives

SEZs have been conceptualized based on theoretical models that list their rationale, design and expected outcomes. Some of the major models are:

- **Market Failure and Policy Experimentation Models:** According to these models, SEZs are targeted responses to market failures that hinder investment and industrial development. some

major market failures include issues with infrastructure, regulation, and malfunctioning of land markets which can be addressed by creating areas with streamlined regulations, improved infrastructure and fiscal incentives which will enable SEZs to serve as platform for governments to test reforms and new approaches before scaling them to the wider economy. Because they enable concentration of resources and policy experimentation, SEZs have special value where reforms nationwide are politically or financially challenging. (Hamada, 1974; Auty,2011; Farole & Moberg, 2014).

- **Second Best Theory and Institutional Experimentation:** This theory states that when there is lack of ability to implement nationwide and economy wide reforms, targeted interventions like the SEZs can be used to improve welfare by working to correct distortions. SEZs will enable institutional experimentation by allowing governments to introduce new regulatory frameworks, incentive structures and administrative processes in a controlled environment. Particularly, this theory is relevant for developing countries since these nations can use SEZs as demonstration sites for broader policy reforms. (Hamada, 1974 Javorcik, 2004; FIAS, 2008)
- **Agglomeration, Clustering, and Spillover Models:** These models conceptualize SEZs as tools to promote industrial agglomeration and clustering which facilitates knowledge spillovers, generates economies of scale and increases productivity. SEZs are useful in creating a link with firms, suppliers and service providers by putting them in shared areas with infrastructure and services. Agglomeration effects can promote technology transfer, productivity and skills development with it creating positive spillovers beyond the Zone. (Javorcik, 2004; Kee, 2015; Atkin et al, 2017)
- **Structural Transformation and Linkages Framework:** This theory holds that SEZs play a role in shifting resources from low productive to hughly productive activities with the theory considering them within broader framework of structural transformation. It's explained that SEZs have backward and forward linkages and create positive spillovers to the domestic economy in addition to contributing to upgrade of domestic industries and support of development of local supplier networks. (Rodrik, 2007; Farole & Moberg, 2014)
- **Political Economy and Governance Models:** These models hold that SEZs are closely related to institutional capacity, political commitment and governance structures showing how strong institutional frameworks, alignment with national development objectives and political commitment is really important. It's stated that long term commitment from policy

makers and political support are critical determinants of SEZ performance. (Farole & Moberg, 2014; Karambakuwa et al, 2020).

- **Environmental and Social Considerations:** In order to promote resource efficiency, alignment with international standards and environmental sustainability, eco industrial parks are being used within the SEZ framework. The impacts SEZs can have on land use, local communities and ecosystems are being recognized with their environmental and social dimensions being stressed. (Karambakuwa et al, 2020)

SEZ Implementation Models

Below are some models used by nations to implement SEZ as explained by Tang, 2020 and Fraole & Akinci, 2011

- **Industrial Parks:** These are areas in which infrastructure and services for manufacturing and industrial activities are concentrated, sometimes without a special regime.
- **Export Processing Zones (EPZs):** These are areas that are offered streamlined export procedures, duty free imports of raw materials and other incentives and the territory is aimed at promoting export-oriented manufacturing.
- **Free Trade Zones:** The parks are often given the opportunity to operate customs free and are given business friendly regulations and are designed to aid in cross boarder supply chains.
- **High Tech Development Zones and Eco Industrial Parks:** The parks are set up to promote resource efficiency and environmental sustainability by targeting innovative sectors. (Tang, 2020; Fraole & Akinci, 2011).

In the context of Ethiopia, where SEZs are designed to support manufacturing-led industrialisation under HGER, these theories provide a framework for analysing performance outcomes. However, given existing evidence of weak structural transformation and limited manufacturing growth, the effectiveness of SEZs in achieving these theoretical outcomes remains uncertain.

This study therefore assesses whether SEZs in Ethiopia are contributing to employment creation and export growth in line with theoretical expectations, while also exploring the underlying institutional and operational factors influencing their performance.

2.3 Empirical Review

The literature available on the study area of effectiveness of Special Economic Zones are many with the SEZs worldwide being examined for their economic, social and environmental impacts which allows us to draw lessons from successful or less effective cases. Below are some of the literatures done around the world that provide insights into the factors that shape the outcomes and policy approaches of SEZs.

2.3.1 The case of Developed Countries

A recent study by Borzenko, Kuznietsova, and Bilko (2025) presents a comprehensive analysis of the evolution of China's SEZs focusing on their transformation from traditional labour-intensive manufacturing hubs to eco industrial parks. SEZs like Shenzhen, Xiamen and Zhuhai which were set up initially have contributed significantly towards investment, exports and as an experiment to test market-oriented reforms. These zones have not only been contributing to rapid economic growth and urbanization but also were serving as models for industrialization and technological innovation. According to the study, strong government commitment, ability to adapt to changing economic conditions and flexible policy frameworks were the main drivers of the success of China's SEZs.

The study concluded that there was a focus on sustainable development and environmental protection within the context of China's SEZs and their transition towards an eco-industrial park. The authors noted that China's SEZs have been performing well gaining expected outcomes in coastal regions, however, in inland areas, the outcome wasn't as effective which led the authors to highlight the need for tailored policy approaches. As China is one of the leading nations in SEZ development, a lot can be learned from their experience including the importance of alignment of SEZ development with national strategies, integration of environmental objectives into industrial policy and promotion of innovation. By referring to China's experience, the study highlighted the huge potential of SEZs to drive economic development especially when the SEZs are supported by good governance and policy learning. (Borzenko, Kuznietsova, Bilko, 2025)

Another study by Dinh, Lu, Kuo and Nguyen (2025) done on SEZs in China examines the relationship between SEZs and sustainable development in the nation with a special focus on the integration of economic, social and environmental objectives. It was shown how significant SEZs were in promoting industrialization, export and employment and how useful they were to experiment policy and institutional reform. Successful case where the SEZs have adopted green technologies and environmental management systems were also shown. The authors also identified some issues like environmental pressures, enforcement of sustainability standards and regional disparities. It was

concluded that the future performance of SEZs in China will be determined by their ability to balance economic growth with environmental protection and social inclusion. The need for integrated and comprehensive policy frameworks, continuous monitoring and stakeholder engagement is among the valuable lessons that can be learned from China's SEZs.

The development of SEZs in Southeast Asia specifically nations like Vietnam, Thailand and Malaysia was examined by a study by ASEAN Secretariat (2016). The study showed that strong governance, effective public private partnerships and provision of high-quality infrastructure are among the characters of successful SEZs in the region. The report concluded that sustainability and long-term impact of SEZs in these countries depend on addressing challenges like infrastructure provision, environmental management and land acquisition. Context specific approaches and continuous policy adaptation is important to gain benefits of SEZs for regional development as shown by the experience of nations of Southeast Asia.

The development and performance of SEZs in South Asia particularly India, Pakistan, Bangladesh and Sri Lanka were examined by a study by Aggarwal (2024). A mixed result was observed in India's SEZ with some zones being effective in achieving export growth and job creation while others struggled because of challenges with regulation, infrastructure and land acquisition. Different from the SEZs in India, the ones in Bangladesh have seen more success especially in the textiles and garment sector having contributed to export and employment growth. SEZs in Sri Lanka and Pakistan have faced challenges with governance, integration with the domestic economy and policy consistency. It was concluded that quality of governance, ability to address local constraints and alignment with national development strategies led to the effectiveness of SEZs in South Asia.

The performance of SEZs located in the European Union nations with a focus on the impact the SEZs had on regional economic growth was examined by a study by Arbolino, Lantz and Napolitano (2023). It was shown that regional development was attained by the contribution of SEZs in EU countries like Polan, Hungary and the Czech Republic with the SEZs attracting investment, exports and employment. However, their effects vary from region to region and over time with some SEZs gaining huge benefits while others have had smaller impacts. It was concluded that factors like governance, policy design and alignment with regional development strategies have affected the success of SEZs in those EU nations which led the authors to stress the importance of incentives, quality infrastructure and the creation of linkages with local economies.

2.3.2 The Case of Developing Countries

Many studies have been done to examine the development and performance of SEZs in developing countries particularly African nations. Reviewing the studies helps in understanding the context, opportunities and challenges faced by SEZs in developing nations including Ethiopia.

The performance of SEZs in South Africa is examined by a recent study by Maketa (2021). The study found that only some success was achieved by SEZs in that nation with many sites still being unoccupied and others failing to contribute significantly to industrial growth or economic development. The author explains that there is a potential for SEZs to create linkages with the broader economy but that wasn't the case for many SEZs in South Africa because the nation depended heavily on mining exports, had huge structural inequalities and limited manufacturing capacity. SEZs in South Africa have struggled to overcome many obstacles like weak infrastructure, limited domestic demand and regulatory inefficiencies which is unlike East Asia SEZs which are built on a strong national industrialisation trajectory.

The study notes that the SEZs in Southern Africa function as enclaves which doesn't address systematic national constraints but rather provides world class administration and infrastructure in isolated areas. This study identified the replication of models from other developed countries as a huge issue stating that the methods have to be adapted to local context with context specific policy design being used. It was recommended by the author that promoting exports and investment should not be the only focus for the SEZs in Southern Africa stating that SEZs should get multidimensional support and focus with diversification being promoted to create local and regional linkages. (Makgetla, 2021)

Factors contributing to the lack of significant success of SEZs in Africa was assessed by a broader study by Kholishwa Malindini (2022) with the study finding that the performance of SEZs in Africa hasn't met expectations despite receiving support and being widely adopted as an industrial policy in many nations. Challenges related to policy alignment, stakeholder coordination, infrastructure investment and regulation were identified by the author. It was found that in Africa alone, there are many SEZs being set up with around 237 zones and 57 projects across 47 nations but only around half are fully operational with many SEZs being unoccupied and most of the SEZs struggle to attract investment. The author recommended that, if they are to be effective, SEZs in Africa should receive support with measures of strengthening governance, public private partnerships and other targeted incentives.

SEZs contribution for the integration of small and medium enterprises (SME) and local economic development in Africa was examined by a study by Boubekeur and Githinji (2023). Successful set ups from 10 African nations and 37 S EZs were referred to do the study and the authors found that the design of modern SEZs takes into account provision of support to local economies, alignment with ESG principles and increasing SME participation. In these successful SEZs, the study showed that there was less reliance on tax incentives and the adaptation of more balanced policies with strong regulatory frameworks, streamlined processes and quality infrastructure. Some good examples given include Gabon's SEZ known as Nkok which has adapted ESG integration and achieved carbon neutrality and Rwanda's Kigali SEZ which operates with less tax incentives that normal SEZ and has been attracting investment despite that.

A recent study by Njoku and Bonang (2025) looks at Botswana's SEZ policy and how it affects national economic growth. It was found that many challenges related to regional integration, infrastructure, and regulation persist, but some achievements were also made with the SEZs helping obtain investment, employment and industrial diversification. The authors recommend that Botswana as well as other African nations focus on improving issues related to infrastructure, regulation and regional integration while also learning from international best practices.

2.3.3 The Case of Ethiopia

Industrial parks have been operational in Ethiopia since mid-2010s with them recently being formalized into the Special Economic Zone (SEZs) model with dedicated regulatory and fiscal regimes. This transition is a huge step in Ethiopia's industrial policy recognizing and positioning SEZs as strategic tools for attracting FDI, accelerating structural transformation and promoting exports. Although the manufacturing sector is one of the priority sectors in the HGER and SEZs are being given attention and investment, empirical studies on SEZs in Ethiopia and their performance under HGER remain limited due to SEZs being formalized and HGER being implemented are recent occurring.

The effects of SEZs on the local economy of Ethiopia was examined by a study by Abagna (2023) and a relation was found between the introduction of SEZs in Ethiopia and an increase in local economic activity in the host areas of the SEZs but spillover effects on neighbo uring areas wasn't significant. For publicly managed SEZs or for zones with larger land sizes or those operating in sectors beyond textiles, the impact was found to be stronger. It was noted that policies supporting SEZ are mostly confined only to the areas that the SEZs are set up rather than creating spillover effects and promoting broader regional growth. The author recommended several measures and

especially notes how important infrastructure, sectoral focus and location are in determining SEZ outcomes.

With a focus on Bole Lemi and Eastern Industry Zone SEZs, a study examining the social spatial transformation brought by SEZs in Ethiopia was done by Kumera and Woldetensae (2023). Similar to the study summarized above, it was found that although the SEZs have contributed positively to the host areas promoting job creation, urbanization and infrastructure development, their benefits to surrounding areas are unevenly distributed. The authors explained that a semi porous enclave character can be seen with the SEZs showing both positive and negative effects on local development. A recommendation to employ a comprehensive planning and stakeholder engagement was made by the authors with them explaining that this should lead to maximization of socio-economic benefits of SEZs.

Gudeta and Worku (2022) did a study on how governance practices promote sustainable industrial parks in Ethiopia with the main finding identifying the main governance related challenges like issues with stakeholder capacity, political instability, weak policy coordination and inadequate information. The importance of adapting context specific governance structures that align with park objectives and national development goals was stressed by the authors which also stated the need for measures with risk management and skill and technological upgrading to promote and ensure the sustainability of SEZs in Ethiopia.

The shift of Ethiopia's SEZs from traditional statecraft to economic diplomacy and their strategic role on Ethiopia's economy was examined by a study by Getachew (2024). It was explained that SEZs are being considered as factors that will enable Ethiopia's economic transformation and integration into global value chains. The study discusses the efforts with diplomacy and policy to attract investment and technology transfer through SEZs, and it also noted challenges of aligning SEZ development with national interests and ensuring that benefits are broadly shared.

2.3.4 Synthesis and Critical Evaluation of the Empirical Literature

The empirical literature reviewed above shows that SEZ performance is neither uniform nor automatically positive. Across the studies reviewed, there is broad agreement that SEZs can contribute to exports, employment, and investment, but these outcomes are highly conditional on governance quality, infrastructure, policy consistency, and the extent of integration with the domestic economy. At the same time, the reviewed studies also reveal important differences in findings, focus, and analytical scope.

Among the studies reviewed from developed and more advanced SEZ-performing contexts, Borzenko, Kuznietsova, and Bilko (2025) and Dinh, Lu, Kuo, and Nguyen (2025) present largely positive evidence from China. Both studies show that Chinese SEZs made strong contributions to industrialisation, exports, and broader economic transformation. However, even these studies do not present SEZ success as automatic. Borzenko, Kuznietsova, and Bilko (2025) show that outcomes were stronger in coastal areas than inland areas, suggesting spatial inequality in SEZ performance. Similarly, Dinh, Lu, Kuo, and Nguyen (2025) acknowledge that environmental pressure, regional disparities, and difficulties in enforcing sustainability standards remain major concerns. These studies therefore support the idea that SEZs can succeed, but only under strong governance, adaptive policy design, and sustained state commitment.

A similar pattern appears in the studies reviewed from Asia and Europe. The ASEAN Secretariat (2016) and Aggarwal (2024) both stress the importance of governance, infrastructure, and policy alignment. However, Aggarwal (2024) also shows internal variation even within the same region, with some Indian zones performing well while others struggled because of regulatory, infrastructure, and land-related problems. Arbolino, Lantz, and Napolitano (2023) also report uneven SEZ outcomes across European Union countries and across regions within those countries. Taken together, these studies suggest that SEZ performance is context dependent rather than universally positive. Their common strength is that they identify broad success conditions, but their limitation for the present study is that they are based on very different institutional and economic settings from Ethiopia. As a result, they offer useful comparative lessons but cannot be directly generalised to the Ethiopian context.

The African literature reviewed is more cautious and often more critical. Makgetla (2021) shows that many SEZs in South Africa and Southern Africa have not significantly contributed to industrial growth and often function as enclaves with limited wider economic spillovers. Malindini (2022) reaches a similar conclusion at the continental level, arguing that many African SEZs remain under-occupied or fail to attract investment despite policy support. These two studies are particularly important because they provide a counterpoint to the more successful Asian cases. Their findings suggest that, in lower-capacity settings, SEZs often struggle when they are introduced without strong governance, infrastructure, and domestic production linkages. However, while these studies are valuable for identifying major structural weaknesses, they tend to operate at a broad regional level. As a result, they are useful for identifying patterns, but they do not provide detailed evidence on how reforms affect zone-level performance in a specific country such as Ethiopia.

The African studies by Boubekeur and Githinji (2023) and Njoku and Bonang (2025) add further nuance. Boubekeur and Githinji (2023) highlight positive examples from Gabon and Rwanda, showing that some African SEZs have integrated SME linkages and ESG principles more effectively. Njoku and Bonang (2025) similarly show that Botswana's SEZs achieved some progress in investment, diversification, and employment, while still facing infrastructure and regulatory constraints. These studies demonstrate that African SEZ experiences are not uniformly negative. However, they also reinforce the point that successful outcomes depend on context-specific policy design and implementation. Their limitation is that they focus either on selected success cases or on broader policy descriptions, making it difficult to compare them directly with studies that measure concrete changes in exports or jobs.

The Ethiopian literature is also fragmented and shows mixed findings. Abagna (2023) finds that SEZs in Ethiopia increased local economic activity in host areas, but that spillover effects to neighbouring areas were not statistically significant. This is an important finding because it suggests that SEZ benefits may be geographically concentrated rather than widely diffused. Kumera and Woldetensae (2023), focusing on Bole Lemi and Eastern Industry Zone, similarly show that SEZs generate positive local transformation but that benefits are unevenly distributed, with a semi-porous enclave character. These two studies are consistent in showing that SEZs can generate localised gains while still failing to produce broader developmental spillovers. Their limitation, however, is that they focus primarily on spatial and local economic effects rather than on overall performance under recent reform conditions.

Gudeta and Worku (2022) provide another important perspective by focusing on governance practices in Ethiopian industrial parks. Their study identifies stakeholder capacity problems, weak policy coordination, and governance challenges as major constraints to sustainable industrial park development. This finding is highly relevant because it shifts attention from simple output indicators such as exports and jobs to the institutional conditions that shape performance. Getachew (2024), in contrast, discusses SEZs more from the perspective of economic diplomacy and strategic national positioning, emphasising their potential role in attracting investment and integrating Ethiopia into global value chains. While both studies are valuable, they focus on different aspects of the issue. Gudeta and Worku (2022) focus on governance constraints, while Getachew (2024) focuses more on strategic and policy significance. Neither of them directly assesses how measurable SEZ performance has changed under HGER.

Taken together, the Ethiopian studies reviewed do not contradict one another completely, but they do reveal an incomplete and partial evidence base. Abagna (2023) and Kumera and Woldetensae (2023) show that SEZs can have positive localised effects, but they also indicate that spillovers are limited and uneven. Gudeta and Worku (2022) show that governance weaknesses remain a major constraint. Getachew (2024) highlights strategic promise at the policy level, but does not empirically establish whether this promise has translated into better performance outcomes. This means that the Ethiopian literature points to both potential and constraint, but does not yet provide a sufficiently integrated picture of how SEZs are performing under the current reform context.

In methodological terms, the reviewed studies also have limitations. Several international studies, such as Borzenko, Kuznietsova, and Bilko (2025), Dinh, Lu, Kuo, and Nguyen (2025), and ASEAN Secretariat (2016), are useful for identifying broad policy lessons, but they are largely comparative and context-specific, making direct transfer to Ethiopia difficult. In the Ethiopian case, Abagna (2023) examines local economic effects, Kumera and Woldetensae (2023) focus on socio-spatial transformation in only two zones, Gudeta and Worku (2022) focus on governance practices, and Getachew (2024) focuses on diplomacy and strategic role. In other words, each study captures only one part of the SEZ story. None of the Ethiopian studies reviewed combines measurable economic indicators such as employment and exports with qualitative analysis of institutional, social, and environmental changes under HGER. This is the main limitation of the existing literature.

Therefore, the gap in the literature is not simply that there are few studies on SEZs in Ethiopia. Rather, the problem is that the available studies are fragmented by theme, location, and analytical focus. Some examine local spillovers, others governance, others strategy, and others spatial transformation. As a result, there is still limited integrated evidence on how selected SEZs in Ethiopia have performed under the Home-Grown Economic Reform Agenda, particularly when considering both measurable outcomes such as employment and exports and broader qualitative changes in institutional, social, and environmental conditions. This is the gap the present study addresses.

2.3 Research Gap and Conceptual Framework

There is a growing global and local literature on Special Economic Zones (SEZs) and their performance, However, there remains a notable research gap on their multidimensional performance in Ethiopia in the context of national policies like the Home-grown economic reform agenda.

As can be seen on the empirical literature review, although multidimensional studies exploring the economic, social and environmental impact of SEZs in developing and developed countries was studied by various researchers internationally, most of the empirical work in Ethiopia has a narrow focus on industrial parks and performance indicators like job creation or exports. (Abagna, 2023; Kumera and Woldetensae, 2023; Gudeta and Worku, 2022). While this study was initiated, peer reviewed studies that examine the performance of SEZs under national policy measures and across multiple dimensions were lacking. And with the HGER beginning its implementation and SEZs being formalized and the policy landscape is evolving rapidly; empirical evidence of performance is very essential. As SEZs are strategically important for Ethiopia's industrialization agenda and they receive policy and investment support, addressing this gap is essential for informing policy and investment, monitoring reforms and assessing whether the manufacturing sector is performing as expected and should remain one of the priority sectors for national policy and development.

This study addresses gaps in existing research on the effectiveness of SEZs in Ethiopia by providing empirical evidence on the impact of recent policy reforms, it also contributes towards advancing the literature on SEZs by implementing multidimensional assessment of their performance, additionally the findings of this study inform future academic research into the relationship between economic reform agenda and SEZ performance.

While the main research gap is the lack of studies that focus on multidimensional performance and impact of recent reforms, the problem addressed in this study is the absence of a clear understanding of how measurable and non-measurable outcomes of SEZ performance have been affected by policy reforms under the HGER. A conceptual framework is developed to address this problem by linking the relationship between key elements of the study.

The conceptual framework of the study illustrates the analytical relationship between the Home-Grown Economic Reform Agenda (HGER), contextual factors, and Special Economic Zone (SEZ) performance outcomes. HGER is treated as a policy context represented by a time-based reform period (pre- and post-2019), rather than a directly causal explanatory variable. The framework recognises that SEZ performance is shaped not only by the reform context but also by a set of moderating factors, including institutional capacity, governance quality, structural constraints, and broader economic conditions. These contextual elements influence how SEZs operate and respond during the reform period. The outcomes of interest are divided into measurable quantitative indicators, specifically employment and export performance, and qualitative dimensions, including institutional, social, and environmental changes. The framework does not imply a direct causal

relationship but instead reflects an analytical structure showing how SEZ performance is examined in relation to the reform period within a broader contextual environment.

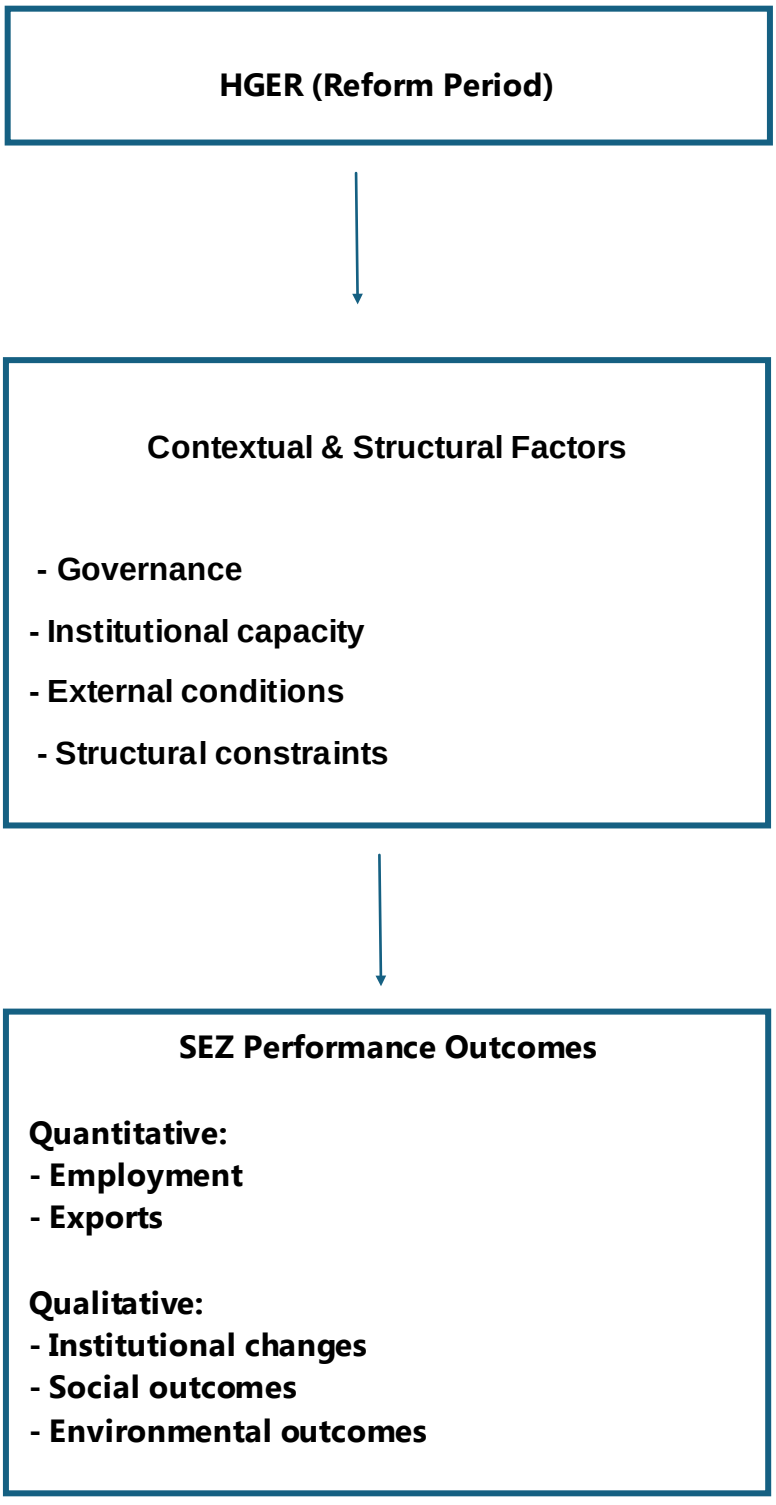


Figure 1: Conceptual Framework

Chapter Three: Research Methodology

3.1 Research Design

The study employed a mixed descriptive and analytical research design aimed to provide evidence-based recommendations to real world policy questions regarding the performance of Ethiopia's Special Economic Zones (SEZs) under the Home-Grown Economic Reform Agenda.

In the quantitative component, the study uses longitudinal panel data covering multiple SEZs over the period 2017 to 2025. This enables a before-and-after comparison of SEZ performance, focusing on employment and export outcomes in the pre-reform period (2017–2019) and post-reform period (2020–2025). The use of panel data allows the study to observe trends over time and across SEZs.

However, the analysis does not attempt to establish a strong causal relationship between HGER and SEZ performance. Instead, HGER is treated as a contextual policy shift captured through a time-based comparison using a reform-period indicator. The findings therefore indicate patterns of change associated with the reform period rather than causal effects attributable solely to HGER.

In addition, qualitative analysis is used to complement the quantitative findings by providing insights into institutional, operational and contextual factors affecting SEZ performance. This mixed approach allows for a more comprehensive understanding of SEZ outcomes beyond measurable indicators.

3.2 Research Approach

The study adopts a mixed-methods approach using a convergent (parallel) design, in which quantitative and qualitative data are collected and analysed simultaneously and then integrated to provide a comprehensive assessment of SEZ performance. The quantitative component focuses on analysing measurable performance indicators, specifically employment and export performance, across selected SEZs before and after the implementation of HGER. This allows the study to examine patterns of change over time using panel data.

The qualitative component complements this analysis by exploring stakeholder perspectives, including SEZ managers and relevant actors, in order to understand operational challenges, institutional conditions and contextual factors influencing SEZ performance. This helps provide insights that may not be captured through quantitative data alone.

Both quantitative and qualitative findings are then integrated during the analysis stage to enable triangulation, thereby enhancing the validity and robustness of the results by combining statistical trends with contextual and experiential evidence.

3.4 Data Source, Type and collection Method

For the quantitative analysis of the study, secondary data from official sources - Ethiopian Investment Commission (EIC), Industrial parks Development Corporation (IPDC) and Ethiopian Investment holdings (EIH) were used to collect data figures from 2017 - 2025 on Exports and Job creation, with the data collected from EIC being used for the analysis.

Purposive sampling was used to collect qualitative data for this study with data being collected from participants directly involved in or affected by operation and governance of SEZs in Ethiopia. Data was collected from three SEZs Hawassa, Bole Lemi and Adama with these SEZs being selected because of direct exposure to the home-grown economic reforms and their difference in scale, sectoral composition, institutional maturity and external shocks which allows for comparative insight.

Across these 3 SEZs, 14 semi structured interviews were conducted in total with 4 interviews per each SEZs and 2 interviews with officials from EIC and IPDC. Participants were selected to show different perspectives at different levels with the interviewees composed of SEZ managers and administrative staff, workers representatives, and officials from EIC and IPDC.

3.5 Data Analysis Method

For the quantitative analysis, a fixed effects panel model was used. This model removes permanent differences across SEZs like location, size or baseline infrastructure which ensures that the estimated effect is driven by changes over time rather than structural differences between zones.

Model of the study

$$\ln(Y_{it}) = B0 + B1\ HGER_t + \alpha_i + e_{it}$$

Where:

Y_{it} = Outcome variable for SEZ i in year t (Exports and Jobs created)

$\ln(Y_{it})$ = Natural log of the outcome, used to interpret results in percentage type terms

$HGER_t$ = Dummy variable representing the reform measures (it'll be Zero pre HGER and one post HGER for year t)

t = Time trend variable (Year minus 2019)

B0 = Intercept

B1 = Effect of HGER on the outcome

α_i = Fixed effects of SEZ, they're controls for time invariant differences between SEZs

e_{it} = Error term capturing other unobserved influences

The coefficient on HGER_t is interpreted as the average difference in SEZ performance between the pre- and post-reform periods. It is not interpreted as a definitive causal effect of HGER, because the model does not include a counterfactual group or sufficient controls for time-varying macroeconomic shocks.

Because panel data can be estimated using either fixed effects or random effects, a comparison of both specifications was undertaken. This is important because the appropriateness of the random effects model depends on the assumption that unobserved SEZ-specific characteristics are uncorrelated with the explanatory variables. If this assumption does not hold, the random effects estimator becomes inconsistent, and the fixed effects model is preferred.

The Hausman test is commonly used to guide this choice. It assesses whether the difference between FE and RE estimates is systematic. In this study, the FE and RE coefficient estimates for both exports and employment were very similar, as shown in Table X. This suggests that the two estimators produced closely related results. However, given the likelihood that zone-specific characteristics such as infrastructure quality, geographic location, investor profile, and institutional conditions are correlated with performance outcomes, the fixed effects specification was retained on theoretical grounds.

Variable	Model	HGER Coef.	Std. Error	P-value	t (trend)	Std. Error	P-value
ln(Exports)	FE	0.3505	0.3858	0.364	0.0874	0.0509	0.086
	RE	0.3430	0.3708	0.355	0.0862	0.0682	0.207
ln(Employment)	FE	0.0879	0.1911	0.645	0.0767	0.0383	0.045
	RE	0.0862	0.2052	0.674	0.0765	0.0373	0.040

Table 1: Comparison of Fixed Effects and Random Effects Estimates Source: STATA

The comparison shows that the FE and RE coefficients are nearly identical for both exports and employment. For exports, the HGER coefficient is positive in both models, but statistically insignificant, indicating that export performance appears higher in the post-reform period but without

strong statistical support. For employment, the coefficient is also positive but very small and statistically insignificant in both models.

The time trend results are more informative. For exports, the trend is positive and only weakly significant in the FE model. For employment, the trend is positive and statistically significant in both FE and RE models, suggesting that employment changes are better explained by gradual time-related developments rather than by the reform-period dummy alone.

The model includes only the HGER reform-period dummy as the main explanatory variable. This means it does not explicitly control for other time-varying factors such as inflation, exchange rate movements, global demand conditions, COVID-19 disruptions, political instability, or logistics constraints. Because these factors affected Ethiopia during the study period, their omission introduces the possibility of omitted variable bias. As a result, observed differences between the pre- and post-reform periods cannot automatically be attributed to HGER alone. Accordingly, the quantitative results are interpreted as showing associations and patterns of change across periods, rather than strong causal effects of the reform.

Despite the similarity of the FE and RE estimates, the fixed effects model is preferred because it is better suited to the substantive nature of the data. SEZs in Ethiopia differ in ways that are likely to matter for performance but are difficult to measure directly, such as location, infrastructure quality, maturity, investor composition, and governance environment. These characteristics are plausibly correlated with exports and employment outcomes. The fixed effects model controls for such time-invariant heterogeneity and therefore provides a more cautious and defensible specification for the study.

For the qualitative analysis, thematic analysis was used to code and interpret the qualitative data with transcripts being reviewed to identify recurring patterns related to the perceived impact of HGER measures on SEZ operations, effectiveness of incentives and supports, challenges and opportunities in investment, exports and job creation, governance and institutional issues, and stakeholder recommendations for policy improvement.

3.6 Validity and Reliability

To ensure the validity and reliability of the study, several procedures were implemented during data collection and analysis. For the quantitative component, data were obtained from secondary sources and cross-checked for consistency across different records. Where discrepancies or missing values

were identified, the data were cleaned and verified against available documentation to ensure accuracy before analysis. The use of panel data covering multiple SEZs and multiple years also enhanced internal validity by allowing comparison across time and across zones.

For the qualitative component, a semi-structured interview approach was used. An interview guide was developed based on the research objectives to ensure consistency in the questions asked across respondents. To improve the clarity and relevance of the questions, the interview guide was reviewed and refined prior to data collection.

Data were collected from three selected SEZs (Hawassa, Bole Lemi and Adama) using purposive sampling. Respondents were selected based on their direct involvement in SEZ operations, ensuring that information obtained was relevant and credible. During data collection, responses were recorded consistently, and notes were taken to ensure completeness and accuracy.

To enhance reliability in qualitative analysis, a systematic coding process was used. Interview transcripts were carefully reviewed and coded to identify recurring themes and patterns. The use of consistent coding procedures across interviews helped to reduce subjectivity and improve the reliability of findings. Triangulation was applied by comparing findings from quantitative analysis with qualitative results. This allowed the study to validate trends observed in statistical results with insights from stakeholders, strengthening the overall credibility of the conclusions. Finally, all data collection and analysis procedures were clearly documented to ensure transparency and replicability of the study.

3.7 Ethical Considerations

Throughout all stages of the study from preparation of proposal to data collection and analysis to presenting findings this research will operate with the highest ethical standards. For qualitative data collection, informed consent will be obtained from all interview participants and measures will be taken to ensure confidentiality and anonymity. The data collected will be stored securely and will be used for academic purposes. When results are presented, no personal data will be included in the report. It will be ensured that participation is voluntary and that no harm comes to participants because of their involvement. The study will comply with applicable national and institutional ethical guidelines and any potential conflicts of interest will be disclosed.

Chapter Four: Data Analysis and Discussion of Results

4.1 Descriptive Analysis of SEZ Performance

4.1.1 Exports Performance in Ethiopia's Special Economic Zones

As SEZs are mainly designed to promote export led industrialization along with enhancing foreign exchange earnings and promoting domestic companies into integration with global value chains, exports are an important objective of SEZs. In Ethiopia's context, SEZ exports indicate the ability of the companies within the zones to competitively produce, respond to changes quickly and access international markets. Therefore, export performance is an important factor that indicates how effectively SEZs contribute to national economic objectives.

Exports (USD)						
Year	**Hawassa**	**Bole Lemi**	**Adama**	**Kombolcha**	**Debre Birhan**	**Total**
2017	20,216,170	32,000,402	-	-	-	52,216,572
2018	37,144,451	29,402,692	295,665	3,244,320	-	70,087,128
2019	90,474,873	53,228,520	4,443,708	9,096,234	327,592	157,570,927
2020	52,988,852	45,567,406	4,194,088	7,217,064	621,378	130,588,788
2021	47,825,000	68,410,000	6,834,000	5,106,000	1,090,940	129,265,940
2022	56,163,104	65,005,999	14,079,390	5,361,234	3,379,863	143,989,590
2023	39,402,544	47,142,180	13,030,864	4,150,329	2,073,272	105,799,189
2024	30,794,287	43,480,309	16,084,135	3,964,543	507,363	94,830,637
2025	91,573,698	49,079,224	12,245,545	15,142,588	1,208,277	169,249,332

Table 2:Export Performance Source: EICs

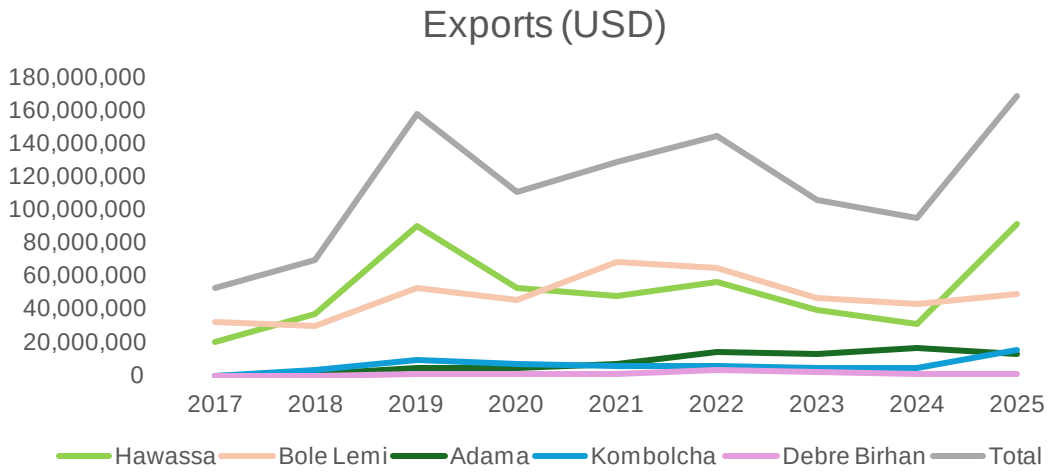


Figure 2: Export Performance Source: EIC

Figures 2 shows export performance trends (in USD) across Ethiopia's SEZs from 2017 to 2025 with the years starting from 2020 indicating post HGER performance. Across the 5 SEZs, their total exports increased steadily before the reform rising from USD 52.2 million in 2017 to USD 157.5 million in 2019 indicating that the performance of the industrial parks was increasing prior to the reforms. Following the introduction of the reforms in 2020, it can be seen that exports decreased to USD 130.5 million. Exports then began recovering with figures increasing to USD 129.2 million in 2021 and increasing further to USD 144 million in 2022 showing the resilience the parks displayed. Exports then began to fall reaching USD 94.8 million in 2024 then sharply rose to USD 169.2 million surpassing the pre reform export values.

When we look at the SEZs separately, a diverse pre and post reform trends can be observed. Hawassa Industrial Park was opened in July 2016 and had a good export performance of USD 20 million by 2017. Its export continued to grow prior to the reform increasing to 37.1 million in 2018 and USD 90.5 million by 2019. In 2020, following the introduction of HGER, exports began to decline to USD 52 million reaching USD 47.8 million by 2021. Export figures briefly recovered to USD 56.2 million in 2022 then declined again to USD 39.4 million in 2023 reaching USD 30.8 million in 2024. Exports then rose sharply in 2025 reaching USD 91.6 million.

Bole Lemi SEZ had an export amount of USD 32 million in 2017 slightly decreasing to USD 29.4 million in 2018 then increasing to USD 53 million in 2019 before the introduction of the reforms. Right after the reforms began being implemented, exports began to decline with USD 45.5 million in 2020. Exports began to recover reaching USD 68.4 million in 2021 and USD 65 million in 2022 then declining the following years with USD 41.7 million in 2023 and USD 43.5 million in 2024. Exports have recently increased to USD 49.1 million in 2025 showing that the SEZs has had a volatile export performance with ups a downs reflecting the economic state of the nation.

Adama Industrial Park was opened in late 2018 managing to record an export of USD 295.6 thousand in just a couple of months since its opening. It then had USD 4.4 million exports in 2019 before declining slightly to USD 4.1 million after the reforms began being implemented in 2020. This trend is similar to the other SEZs as there were various external economic shocks that occurred in that year. Exports then began to increase reaching USD 6.8 million in 2021 and USD 14 million in 2022 before slightly declining to USD 13 million in 2023. Exports then increased to USD 16 million in 2024 coming slightly down recently to USD 12.2 million in 2025.

Kombolcha industrial park began operations in 2017 and achieved USD 3.2 million exports in 2018 increasing largely to USD 9 million in 2019. Following the introduction of the HGER exports first

declined to USD 7.2 million in 2022, reaching USD 5 million in 2021 and 2022 and falling to 3.9 million in 2024 before recovering significantly in 2025 reaching USD 15 million. Debre Birhan industrial park began operations in 2019 exporting USD 327.5 thousand in that year. Exports then increased to USD 621 thousand in 202, USD 1 million in 2021 and USD 3.3 million in 2022 slightly declining to USD 2 million in 2023 and USD 500 thousand in 2024 before recovering to USD 1.2 million in 2025.

Overall, export performance showed an increasing trend before the reforms were introduced reflecting steady expansion and improvement in operational performance of SEZs. following the implementation of HGER in 2020 export figures became unstable initially declining then sharply recovering in recent years indicating that while the post reform period showed volatility and short-term disruptions there was improvement in recent years suggesting recovery and resilience of export performance.

4.1.2 Employment (Job creation) in Ethiopia's SEZs

SEZs are expected to contribute to inclusive economic growth by creating jobs and absorbing labor from surrounding regions. Therefore, employment generation is one of the most important social and economic objectives of SEZs. In Ethiopia's context, job creation within SEZs is closely related to industrial expansion and overall productivity.

Employment						
Year	Hawassa	Bole Lemi	Adama	Kombolcha	Debre Birhan	Total
2017	21,733	15,383	1,065	1,366	-	40,282
2018	23,873	15,986	1,155	1,358	-	43,412
2019	25,026	16,111	3,598	1,958	1,327	48,020
2020	25,985	16,594	4,589	1,457	1,435	50,060
2021	29,754	18,645	7,684	1,038	1,167	58,288
2022	25,645	20,987	6,648	1,773	2,858	57,911
2023	22,727	19,981	6,440	1,406	2,648	53,202
2024	17,927	23,740	6,895	1,512	1,865	51,939
2025	17,652	30,546	7,330	3,631	2,245	61,404

Table 3: Employment Trend Source: EIC

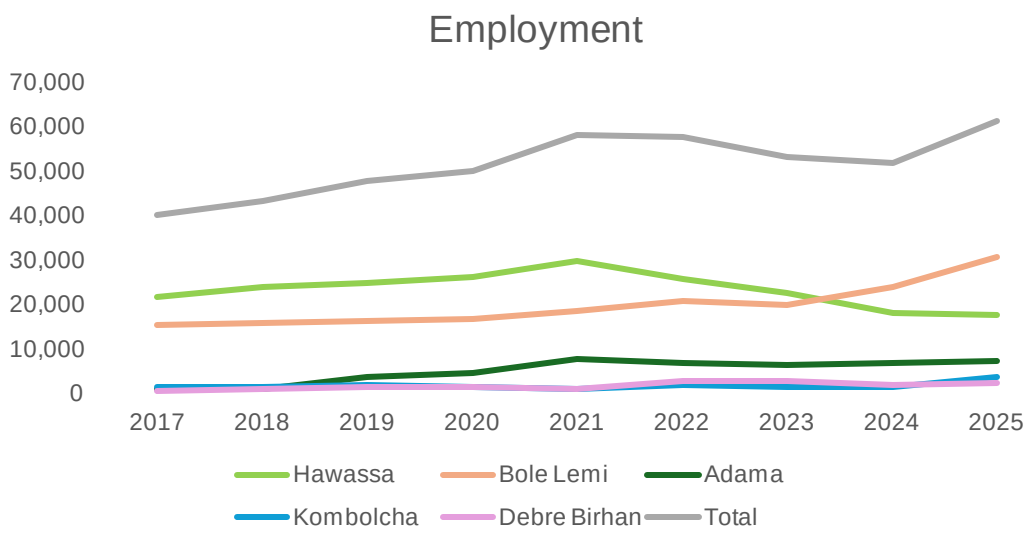


Figure 3: Employment Trend Source: EIC

Figure 3 shows the trends in employment (job creation) across Ethiopia's SEZs between 2017 and 2025 with the years starting from 2020 indicating post HGER performance. Across the 5 SEZs, their total employment increased steadily before the reform rising from approximately 40 thousand jobs in 2017 to 43 thousand in 2018 reaching 48 thousand in 2019 showing that since industrial parks have been set up, they were gradually expanding their workforce reflecting their development and operational needs prior to 2020. In the years following the reform, total employment across the SEZs increased further to 50 thousand jobs in 2020 reaching 58 thousand in 2021 showing that despite total export performance declining in 2020, employment levels strengthened in early post reform periods. Employment levels then began to decline to 57 thousand jobs in 2022 falling further to 53 thousand in 2023 and 52.9 thousand in 2024. Recently in 2025, employment levels have recovered to 61.4 thousand jobs which is the highest level of employment observed.

When we look at SEZ's separately and their employment levels across the years, Hawassa SEZ experienced a gradual increase in employment starting from 21 thousand jobs in 2017 increasing to 25 thousand jobs in 2019 and continuing to increase after the introduction of HGER to 25.9 thousand in 2020 peaking at 29.7 thousand in 2021. Employment then began to decline steadily falling to 25.6 thousand in 2022, 17.9 thousand in 2024 and reaching 17.6 thousand jobs in 2025.

Bole Lemi SEZ shows an increase in employment throughout the years with employment gradually increasing from 15 thousand jobs in 2017, 16 thousand in 2019 continuing to raise after the implementation of HGER reaching 18 thousand in 2021 and 20 thousand in 2022. Employment remained high in the following years with slightly declining to 19.9 thousand in 2023 but increasing to 23.7 thousand in 2024 reaching an all-time high of 30 thousand jobs in 2025.

Employment levels in Adama SEZ were relatively low prior to the reforms as the park began operations in 2018 having around 1.5 thousand employees back then with gradual increases to 3.5 thousand jobs in 2019 and 4.5 thousand jobs in 2020 after the implementation of HGER began. Employment levels then rose to 7.6 thousand jobs in 2021 with slight decline in the following years to 6.6 thousand in 2022 and 6.4 thousand in 2023 increasing again to 7.3 thousand jobs by 2025.

Kombolcha SEZ had a relatively smooth employment levels throughout the years with employment increasing slightly from 1.3 thousand jobs in 2017 to 1.9 thousand jobs in 2019. After the reforms began being implemented, employment levels declined slightly to 1.4 thousand jobs in 2020 recovering to 1.7 thousand in 2022 then declining again to 1.4 thousand in 2023 and 1.5 thousand in 2024. Recently employment levels have increased to 3.6 thousand in 2025. Debre Birhan Industrial Park began operation in 2019 having employed 1.3 thousand people in that year. Employment levels slightly increased to 1.4 thousand jobs in 2020 followed by a decline to 1.1 thousand in 2021. The numbers then rose to 2.8 thousand jobs in 2022 slightly declining to 2.6 thousand in 2023 and 1.8 thousand in 2024 before increasing to 2.2 thousand jobs in 2025.

Overall, employment levels increased steadily before the introduction of HGER reflecting the growing labour absorption capacity of industrial parks as they expanded. Following the introduction of the reforms in 2020, employment initially increased, declined gradually then recovered strongly reaching the highest level of employment in recent years. This indicated that while employment was growing before the reform the post HGER period was characterised by fluctuations with recovery in recent years showing the resilience of the SEZs

4.2 Econometric Analysis

Regression was used for this portion of the analysis, and it was done with econometric process and principles. A fixed effects panel model was used. This model removes permanent differences across SEZs like location, size or baseline infrastructure which ensures that the estimated effect is driven by changes over time rather than structural differences between zones.

Model of the study

$$\ln(Y_{it}) = B0 + B1\,HGER_t + \alpha_i + e_{it}$$

Where:

Y_{it} = Outcome variable for SEZ i in year t (Exports and Jobs created)

$\ln(Y_{it})$ = Natural log of the outcome, used to interpret results in percentage type terms

$HGER_t$ = Dummy variable representing the reform measures (it'll be Zero pre HGER and one post HGER for year t)

t = Time trend variable (Year minus 2019)

B0 = Intercept

B1 = Effect of HGER on the outcome

α_i = Fixed effects of SEZ, they're controls for time invariant differences between SEZs

e_{it} = Error term capturing other unobserved influences

The hypothesis for the research is as follows:

Hypothesis 1: Changes in employment levels in selected SEZs in Ethiopia's following the implementation of HGER.

- $H0_1$: The implementation of HGER has not led to a significant change in employment levels in selected SEZs in Ethiopia.
- $H1_1$: The implementation of HGER has led to a significant change in employment levels in selected SEZs in Ethiopia.

Hypothesis 2: Changes in export performance in selected SEZs in Ethiopia following the implementation of HGER.

- $H0_2$: The implementation of HGER has not led to a statistically significant change in export performance in selected SEZs in Ethiopia.
- $H1_2$: The implementation of HGER has led to a statistically significant change in export performance in selected SEZs in Ethiopia.

4.2.1 Pre estimation checks

4.2.1.1 Descriptive statistics

Descriptive statistics is used to help check for the basic size and spread of the data which confirms whether the data is appropriate and sensible before moving to full econometric analysis and regression. It shows what the typical level of jobs and exports are and how much they vary across SEZs and over the years.

Variable	Observations	Mean	Standard Deviation	Min	Median	Max
Exports (Value)	41	25,209,706	25,797,910	295,665	14,079,390	91,573,698
Employment (Jobs)	43	10,769	9,893	1,038	6,648	30,546

Table 4: Descriptive Statistics Source: STATA Results

The result in table 4 shows that employment levels over the years and across SEZs range from 107.3 jobs to 20,320 jobs indicating a wide range between employment levels over the years and across SEZs. Export figures range from 68.89 million to 117.1 million indicating unevenly distributed exports and Investment figures range from 2 million to 71.6 million indicating that some SEZs received much larger investment than others. This shows that using fixed effects panel model is appropriate to control for SEZ specific characters and time effects.

The above figures show differences in employment and export performance over the study period across the SEZs. The range of employment levels show large differences from a minimum of 1,038 jobs to a maximum of 30,546 jobs indicating differences in scale of operation across different zones. The distribution is positively skewed as the average employment level (10,761 jobs) is much higher than the median value (6,648 jobs). This indicates that just a couple of the SEZs like Hawassa and Bole lemi employ a very high number of workers while the other zones have lower employee numbers which is due to differences in SEZs in terms of maturity, size of operation or investor attraction. The high standard deviation when compared to the average further shows the differences across zones and over time.

Similarly export values show a huge amount of difference with ranges from USD 295,665 to as high as USD 91.6 million. The average export value (USD 25.2 million) is larger than the median value (USD 14.1 million) indicating a positively skewed distribution. This suggests that some high performing SEZs drive the total export performance. There is a large standard deviation indicating uneven distribution of export capacity of the SEZs likely due to difference in exposure to external shocks, firm productivity access to international markets and other indicators.

4.2.2 Main Regression results

A regression was done with a fixed effects panel model to examine the relationship between the implementation of the Home-grown economic reform agenda (HGER) and SEZ performance in terms of employment and exports. The regressions are estimated using logarithmic specifications of the outcome variables and include SEZ fixed effects to control for time invariant differences across zones and over time. The post HGER period is defined as 2020 – 2025 while pre reform years are from 2017 - 2019.

Variable	**ln (Employment)**	**ln (Exports)**
Post HGER Period	0.426 (0.286)	0.718* (0.393)
SEZ fixed effects	Yes	Yes
Observations	43	41
R-squared	0.2211	0.1982

Table 5:Regression result Source: STATA Results

The numbers in parentheses indicate the standard errors and * indicates the significance at the 10% level, ** at 5% and ***at 1%.

The figures in table 5 show the estimated difference between the pre HGER (2017 – 2019) and post HGER periods (2020 – 2025) captured through the post-HGER dummy variable included in the regression model. In the specification the pre reform periods serve as a baseline where the dummy variable takes a value of zero while the post reform period is represented by a value of one. Therefore, the coefficient on the post HGER variable show the average change in the outcome variables (export and employment) between the post and pre reform periods within each SEZ after controlling for time invariant differences across zones.

The results of the regression show that the coefficient on the post HGER dummy variable in the employment regression is positive (0.426) indicating that on average the employment levels within SEZs were higher in the post reform period compared to the pre reform period. When the coefficient gets calculated into percentage (using the formula 100 x (e^{B} – 1)), it implies that employment is around 53 percent (calculated as $e^{0.426}$ – 1=0.53) higher on average after the reform within each SEZ. This effect is however not statistically significant (at any of the percentage p- value levels) implying

that the increase in employment isn't strictly due to the reform itself rather it may be due to other external factors.

The coefficient on the post HGER dummy variable for exports also shows a positive number (0.718) implying that average export performance within the SEZs increased after the implementation of HGER. When calculated in percentage terms the coefficient shows around 105 percent (calculated as $e^{0.718} - 1 = 1.05$) increase in exports in the post reform period relative to the pre reform period. The result however isn't statistically significant at 5% level but shows weak significance at 10% level indicating that the variation across SEZs and over time is large enough that the observed increase could be due to factors other than the measures taken due to the reform.

The p-values for the regression are denoted in the table by (*) and calculated via STATA using the ratio of the post HGER export and employment coefficients to their standard errors. As can be referred from the table by the lack of a star (*), employment effect is not statistically significant at any level of the p - value while export is weakly significant at 10% level.

The R squared results explain the proportion of variation within SEZs over time explained by the model after controlling for SEZ fixed effects. It can be seen that around 22 percent of the variation in employment within the SEZs and around 19 percent of the variation in exports within the SEZs is explained by the post HGER period. While the post HGER dummy variable contributes to explaining changes in performance within SEZs, a major amount of percentage is explained by other external factors. The R squared values being relatively low does not imply that the model is not fit for purpose or poorly specified since it's common to observe low or moderate R-squared values in fixed effects panel models, especially those using a single policy variable like the post HGER dummy. This is because many external factors like macroeconomic conditions and global demand influence SEZ performance.

The results from the regression indicate that SEZ performance in terms of export and employment has increased post the introduction of the home-grown economic reform but none of the estimated post reform effects are statistically significant (at the conventional 5% p-value) indicating that there is limited econometric evidence that the observed changes can be directly attributed to implementation of HGER.

4.2.3 Post estimation Diagnostic Tests

4.2.3.1 Autocorrelation test (Serial correlation over time within SEZs)

Autocorrelation also known as serial correlation is a term used to describe when regression error terms are correlated across time within the same cross-sectional unit leading to underestimated standard errors resulting in overstated statistical significance if not properly addressed.

Equation	F-stat	Prob>F (p value)
ln (Employment)	19.57	0.0001
ln (Exports)	35.32	0.0000

Table 6:Auto Correlation Result Source: STATA Results

The results in table 6 show that there is serial correlation across all three regression equations with employment showing F statistic of 19.5683 with a p value of 0.0001, export shows F statistic of 35.3207 with a p value of 0.0000. In all cases p vales are below 5 percent showing there is serial correlation.

This however is a common feature in panel data making standard errors inappropriate. The use of SEZ clustered standard errors in the regression analysis therefore plays a big role in ensuring valid statistical inference by accounting for within SEZ serial correlation over time.

4.3 Qualitative Analysis of SEZ Performance and HGER Impact

In this section, an in-depth qualitative analysis of the performance and impacts of Special Economic zones (SEZs) in Ethiopia is presented. The analysis was done by using the results of semi structured interviews and extensive review of documents. This section will help shape our understanding of how and why the outcomes presented by the quantitative data analysis materialised, whom they benefited and challenges associated with them.

The analysis focuses on Hawassa, Bole Lemi and Adama SEZs with these sites chosen as they differ in scale, sectoral composition, institutional maturity and external shocks which allows for comparative insight. The respondents of the interview comprise government officials, SEZ management, factory representatives and workers representatives. Government issued policy and strategy documents as well as other relevant monitoring documents were reviewed to validate

interview narratives and trends over time and to capture happenings not accessible at the interview stage.

4.3.1 Measures Taken Under the Home-grown Economic Reform Agenda: The shift to SEZs, Incentives and Institutional Reforms

This section assesses the types and effectiveness of incentives and supports provided to SEZs under the HGER compared to the time before the reform got introduced. It examines how the HGER affected and reshaped the formal rules that support SEZs comparing the situation before and after the reforms. The section looks closely into what changed in the legal, institutional and incentive provisions under the HGER provisions under the HGER and how different stakeholders perceived those changes. It is done drawing on analysis of policy documents released by the federal government on like the HGER framework and SEZ proclamation No. 1322/2024 and by synthesizing this with semi structured interviewees with 14 stakeholders across the three SEZs of Hawassa, Adama and Bole Lemi.

The formal legal recognition and change of industrial parks to special economic zones is one of the main measures under the HGER. This was approved by the house of people's representatives on April 18,2024 as SEZ proclamation No. 1322/2024 and it provides legal framework for the establishment, operation and governance of SEZs across Ethiopia representing a shift from the previous industrial park model to a more structured SEZ framework (Federal Negarit Gazette, 2024).

In the proclamation, SEZs are defined as geographically demarcated areas operating under special fiscal and regulatory provisions different from the rest of the country. Main points included as provision on the proclamation include the following:

- Multipurpose zones that can accommodate different sectors like trade, industry, services and logistics under same regulations to be established.
- Foreign and domestic financial service institutions to be allowed to operate within the SEZs with National Bank of Ethiopia's regulations.
- One stop c enters for service providing streamlined administrative services to be set up.
- The introduction of minimum capital requirement of USD 75 million for SEZ developers with adjustment based on sector.

Fiscal and non-fiscal incentives

Prior to the introduction of HGER various fiscal and non-fiscal incentives were already in place. They were implemented to help attract FDI into the parks, but they lacked structure and a

comprehensive framework. The incentives provided include tax holidays, duty free import of raw materials, access to basic infrastructure and administrative support. Respondents acknowledged that these incentives were helpful in initiating industrial activity and attracting some foreign investment but noted how these incentives were provided in isolation from broader institutional systems.

Following the reform, more broadly under the HGER framework including the SEZ proclamation a set of fiscal and non-fiscal incentives that are believed to help increase the performance of SEZs were introduced.

According to the SEZ proclamation fiscal incentives introduced include:

- Customs duty exemptions for imported capital goods, construction materials and raw materials needed for export production.
- Exemption from income tax for up to 10 – 15 years depending on sector, location and export share.
- Export tax exemptions for all products produced for export.
- Exemption from value added tax (VAT) and other taxed on imported machinery and equipment.
- Provisions allowing loss carry forward stating losses during the tax holiday can be carried forward for up to half the exemption period.

Non fiscal incentives included in the SEZ proclamation and HGER document include:

- Bring able to freely repatriate capital, profits, dividends and proceeds from sales or liquidation in convertible foreign currency.
- Access to land and infrastructure with long term leases.
- Guarantee against expropriation with compensation at market value.
- One stop shop service for permits, licensing, customs and banking.
- Access to foreign currency for importing inputs.
- Simplified work permit and visa processes for expatriate staff.
- Subsidised utility rates.
- The right for exporters to retain up to 50% of their foreign exchange earnings in a foreign exchange retention account with no time limit.

Across the three SEZs, majority of the respondents agreed that the formal transition to SEZ status as a meaningful improvement with a manager in one of the SEZs describing this formal transition as having bought greater attention to compliance and governance requirements stating that they now

have a legal framework that defines their obligations and relationship with other government bodies giving them legitimacy.

An EIC official explained "The shift from industrial parks to SEZs is not just a rebrand its about introducing and aligning the nation with international best practices. The proclamation unified the legal framework and allowed for private SEZ development reducing the fiscal burden on the government." However there were some concerns raised in relation to the implementation with a worker representative from one of the SEZs stating that although the Industrial parks have been upgraded to SEZs and they expected this to bring better working conditions, so far the change has been mostly administrative with workers not feeling the changes with wages still being low and not uniform despite a minimum wage is a requirement set up in the proclamation and with other related issues.

From the incentives introduced as part of HGER, Investors in the SEZs consistently highlighted that the foreign exchange retention reforms were very impactful stating that the ability to retain 50% of their foreign exchange earnings has been very helpful as they had to surrender all foreign exchange earnings to the central bank before the reforms and 40% of their earnings just a year ago. This now allows them to plan their imports and manage their cash flow more efficiently giving them confidence in the system.

An investor from one of the SEZs showed gratitude for the reforms but highlighted a gap stating that although the foreign exchange retention is helpful, they still face delays in accessing foreign exchange for non-retained amounts and the gap between the official and parallel market is creating distortion. Another investor explained that the tax holidays are helpful and appreciated but a reliable and predictable regulation is preferred beyond the tax breaks. A factory manager in one of the SEZs stated that although the incentives are well designed on paper there is a challenge with delay in actually accessing them as, for example, applying duty free imports still needs many paperwork causing delays.

Related to infrastructure and logistics the following incentives and reforms were included under the reforms:

- The liberalisation of the logistics sector
- Improvement in the capacity of the rail network
- Digitalisation of the logistics system
- Expansion of cold chain ports for perishable products
- Establishment of free trade zones in some areas

- PPP investments in the logistics sector

In the past couple of years there have been infrastructure improvements in the SEZs with additional factory sheds being constructed in Bole Lemi SEZ as part of phase II, investment being mobilized for portable water infrastructure in Hawassa SEZ, computerized infrastructure maintenance management system being installed at Bole Lemi SEZ and discounted air freight with 50% discount being agreed with Ethiopian Airlines to address red sea shipping disruptions.

An official from EIC commented on issues related to logistics stating that logistics has been the hardest problem to address as it involves multiple stakeholders like shipping lines, freight forwarders, customs and inland transport. There are reforms being implemented but it'll take time as some of these are multiyear projects.

When seen together with the results from the quantitative analysis, the patterns described by respondents help explain why post the reform period the quantitative results show improvement but also instability and fluctuations in outcomes. Descriptive analysis and regression results show average improvement in performance of exports and job creation post the reform but fluctuations in outcomes and statistically insignificant results. It can be referred from the qualitative analysis that this mixed picture could be due to reforms like legal transition to SEZ and foreign exchange retention helped improve predictability and planning for firms but delays in implementation with things like accessing duty free processes, gaining foreign currency beyond retained amounts and on a broader level external shocks continue to affect performance.

These findings align with the broader literature (as indicated in the literature review chapter 2) that shows SEZ performance depends not only on incentives but also on governance quality, implementation capacity and coordination. International experience also indicates that successful SEZs like the case of China have a context with strong institutional commitment, an ability to adopt policy to solve constraints and effective administration while SEZs that relied heavily on incentives without addressing implementation and coordination gaps tend to see weaker results.

4.3.2 Conditions of Industrial Parks before and after the Home-grown Economic Reform

This subsection examines the change in operational and governance conditions of the parks before and after the HGER focusing on changes in management practices and how the institutional coordination, governance arrangements and social and environmental considerations differed before and after the HGER implementation.

Perceptions on the pre HGER period (Before 2020)

Many of the interview respondents characterized pre HGER period as there being fast industrial growth but with little institutional consolidation. Industrial parks were being set up and expanded mainly with an objective of attracting foreign investment, employment and eventually making Ethiopia an export-oriented manufacturing hub. Most of the respondents across the SEZs highlighted that this rapid expansion and development succeeded in creating jobs and mobilizing investment but also brought governance issues that lagged behind the physical expansion of industries.

An SEZ manager explained "when the Industrial park was set up the focus was on quickly building sheds, getting investors to fill in the sheds and starting production. On paper there were systems for how the different agencies would work together and handle various issues, but it was not fully developed and lacked proper coordination." Similarly, an investor echoed these challenges stating that they lacked soft infrastructure with clear rules and coordination between customs, immigration and park management.

The big role of institutional coordination and quality of governance in shaping the performance of the parks was a theme that kept being mentioned across interviews. It was expressed that the park's performance doesn't depend on the provision of infrastructure alone rather broadly on how effectively responsibilities are distributed and exercised by authorities, regulators, firms and investment agencies.

Most of the SEZ managers interviewed have stated that there were overlapping and unclear institutional mandates with responsibilities around investor relations, maintenance of infrastructure, environmental compliance and labour oversight being uncoordinated properly and unorderly distributed among multiple bodies. This resulted in operational challenges not being addressed appropriately and systematic issues like service provision, worker turnover and environmental compliance not being prioritised.

An SEZ manager from one of the SEZs noted "the responsibility for relationship with investor, maintenance of infrastructure and compliance standards was spread between various government bodies like IPDC, EIC and Ministry of industry in uncoordinated manner so when issues like power outage or labour dispute occurs there were delays in handling them."

Majority of the respondents across the SEZs pointed out that before the economic reforms were implemented and measure were taken to upgrade the industrial parks to sustainable economic zones; social and environmental considerations came secondary to production and effectiveness. It was highlighted that environmental compliance, and social measures were not proactively included in policy priorities rather reactive to external pressures from buyers or donors.

A worker representative from one of the SEZs highlighted that prior to the reform's worker welfare was not a priority with the focus being on production and profits. Issues like high turnover and lack of grievance mechanism weren't treated as problems to be addressed rather seen as normal operating costs. An investor added that environmental compliance was reactive only addressing issues like wastewater treatment as they were requirements of buyers.

Changes observed after the implementation of HGER (After 2020)

Respondents across the SEZs stated how there was gradual but notable changes in how SEZs were governed, evaluated and managed following the introduction of the home-grown economic reform. The reform didn't dramatically change the export oriented and labour-intensive nature of the SEZs but there were shifts in operational procedures with coordination, sustainability and institutional effectiveness being given attention.

It was noted that roles were being more clearly defined, and SEZ management, authorities and regulators were increasingly engaging and working in a structured manner following the reforms. An official from EIC stated "The introduction of HGER and the SEZ proclamation pushed various institutions to map out clear roles for all key stakeholders with dialogue being more structured now." An SEZ manager highlighted how they now have regular coordination meetings with customs, investment commission and regional bureaus and one stop centres have been established bringing together various institutions like banks and customs in one place.

Respondents stated how there are still issues around capacity constraints and overlapping mandates, but communication channels seem to have improved and there was regular coordination around infrastructure maintenance, environmental compliance and labour standards reducing the reliance on non-structured problem solving of operational issues.

When it comes to compliances and standards, respondents highlighted that social and environmental considerations were included more in discussions of SEZ performance following the reforms. This is different from how things were prior to the reforms when social and environmental related issues were addressed when crisis occurs or external pressure comes. Now measures are more proactive with greater awareness of how important worker welfare and environmental management are to sustain investor confidence and export performance.

An investor from one of the SEZs explained how there is a significant shift with social and environmental standards now being part of the conversation with park management and buyers. It's

not just about cost anymore, European buyers have these standards as strict requirements with the measures taken as part of the reforms helping them meet these requirements.

Regarding social standards, respondents reported that more attention is being given to working conditions and worker support mechanisms. Despite wages and labour intensity remaining the same interviewees stated that management now displayed willingness to solve issues related to high turnover and grievance handling. Similarly, environmental management was perceived to have improved after the reforms with there being better monitoring and environmental infrastructure. Although challenges remain, the practices after the reforms are more deliberate and institutionalized than before showing the change from informal compliance to more structured governance.

A worker representative reported that management is more willing to address grievances with a committee being set up in their factory providing space to report issues related to harassment or general grievances.

Respondents across the SEZ didn't characterise the reform as bringing huge transformations rather incremental and gradual changes. Structural challenges related to capacity constraints, external economic shocks and limited fiscal space were stated to still affected SEZ performance. Overall, the interviewees believe the reforms have changes the direction and emphasis of SEZ policy solving some issues, but they didn't view it as having resolved underlying issues of external economic and structural bottlenecks.

The gradual change narrative that the majority of respondents highlighted helps explain the quantitative trend which showed both export and employment already rising prior to the reforms then became volatile following the reforms later showing recovery. Respondents consistently stated that the pre reform period saw a rapid physical expansion with limited institutional consolidation. In contrast the post reform period shows more structured coordination but with ongoing capacity constraints and external pressures which helps explain why the quantitative results don't show smooth upward trajectory following the reform given uneven implementation and large shocks affecting SEZ operations during that period.

When compared to literatures (as indicated in the literature review – chapter 2) and other cases, the context of multiple countries shows similar outcomes with SEZ performance improving when things like coordination and regulatory clarity develops alongside physical infrastructure. Similarly, developing country contexts show that SEZs can function as enclaves when policy alignment and capacity of governance lag behind expansion leading to inconsistent outcomes across zones and time.

4.3.3 Social Impacts of SEZs in Ethiopia before and after HGER

Social impact of the three SEZs was assessed using both quantitative indicators like employment trends and qualitative insights from interviews with worker's associations, park authorities, and factory management. This assessment captures outcomes broader than employment volumes looking into job quality, working conditions social resilience and gender inclusion.

Prior to the reforms industrial parks were integral in expanding access to formal employment especially for young people migrating to urban and peri urban areas. It's widely believed that industrial parks are preferable to informal or agricultural work as they have predictable wages and formal contracts. A worker representative from one of the SEZs stated that before industrial parks were set up in the country, the choice was between unpaid agricultural work or informal jobs in the city but the parks were a step up in that they require unskilled labour and provide regular salary and formal contracts.

Although industrial parks were preferred by workers in comparison to informal jobs, social impact of industrial parks was narrow before the introduction of the reforms. The jobs at factories were low paying and physically demanding with high turnover being seen as normal for operation and little attention being paid to worker wellbeing, psychological health or long-term skill development. A factory manager stated that in the early years following the establishment of the parks the focus was on bringing in workers and keeping them in the production line, so operation moves smoothly. Job quality, wellbeing or long-term skill development wasn't emphasized or given much attention.

Most of the respondents reported that mechanisms for worker's voice to be heard were absent with no clear channels to raise grievances and fear of retaliation and loss of job further limiting their voices. Collective representation was hard to achieve so labour relations were mainly on individual basis. It was stated that although majority of the workforce is women, gender inclusion before the reform was not coordinated with lack of mechanisms to address gender related risks like harassment or unsafe transport. This resulted in women's participation not translating into empowerment.

Social Changes after the introduction of HGER

Interview respondents indicated that following the reform there were changes in how social outcomes within SEZs were addressed with policy makers increasingly recognizing that employment numbers alone weren't sufficient indictors of SEZ success. Post the reform period, respondents reported that working conditions, workplace safety and labour standards were given more attention

with implementation of measures related to workplace safety, clearly defined contracts and trainings being provided. A park manager from one of the SEZs stated that the reforms introduced measures that pushed for international standards to be met which helps attract and retain buyers especially from Europe with talks shifting from just job numbers to labour standards and wellbeing.

In Hawassa SEZ targeted worker support systems were set up and supported by donors after the reform with initiatives like *Buna Tetu worker's café* which provided services like counselling, hygiene facilities and information on labour rights with workers describing the impact Buna Tetu initiative had stating "Buna tetu became a safe space where we could get free counselling, hygiene facilities and information on our labour rights." In Adama SEZ it was reported that worker cooperatives were used to support workers in the parks with the interventions addressing access to affordable goods and income smoothing. The cooperative shop which sells basic goods at subsidized prices helps workers manage their cost of living.

It was indicated that support mechanisms provided for workers also became more visible with trainings, counselling services and other awareness programmes being provided and integrated more into operations. Workers especially women are described as having improved understanding of labour rights and know how on engaging with supervisors. After the reforms, social interventions became part of routine rather than reactive actions as they were prior to the reforms. But challenges with high living costs, low wages and demanding labour continue to affect welfare outcomes and job retention.

Gender outcomes after the reform

Gender issues are one of the areas where change can be observed post the reform, but progress seems gradual. Respondents highlighted that following the reform SEZs have been acknowledging gender specific vulnerabilities with reports of better access to counselling improved awareness of protection mechanisms and clearer grievance procedures.

Initiatives like a program known as STOP which is worker safeguarding and wellbeing intervention focused on preventing sexual exploitation abuse and harassment (SEAH) were implemented in the SEZs with around 19 anti-harassment committees and dedicated SEAH reporting mechanisms were reportedly set up across 4 SEZs including Hawassa, Bole lemi and Adama.

It was reported that In Bole Lemi SEZ, sections providing counselling were introduced in some companies supporting mental health and psychological stability by providing confidential spaces. In

Hawassa SEZ, their investor association adopted an anti-sexual harassment policy which required firms to appoint focal person that handles SEAH prevention and response.

However, Interviewees indicated that there are still structural challenges with women workers experiencing higher exit rates during layoffs and facing issues with childcare, workplace safety and transport. Respondents reported the gains from reform measures as mitigation rather than transformation as SEZs are becoming more responsive to risks related to gender but not fundamentally changing distribution of power or vulnerability within the labour market.

Worker voice and labour relations after HGER

Post the reforms, it was reported that worker voice was increasingly institutionalised with grievance mechanisms and formal dialogue platforms becoming common and visible to workers. Respondents stated that fear of retaliation has reduced and willingness to raise issues related to contracts and working conditions has increased. A park management representative from one of the SEZs stated that they received technical advisory support which helped them hold a successful election of worker representatives. One of the SEZs also has a fully functioning workers association serving as voice for workers raising issues on behalf of them and advocating for standardized minimum wages.

Respondents indicated that labour relations are still not even with trade union representation and collective bargaining capacity remaining weak in some of the SEZs. There is little change in worker influence over wages and job security compared to pre reform period, so procedures have improved but there is limited redistribution of power.

When seen together with the quantitative results which show that employment increased in early post reform years declined shortly before recovering strongly, the qualitative findings help explain what's beneath these numbers by showing that social outcomes are about job quality, worker wellbeing, grievance mechanisms, staff turnover and gender related risks not just about the number of jobs created. The period following the reform may be associated with better social governance structures and worker welfare support systems but continued challenges with low wages and high living costs remain to affect stability causing the fluctuations in employment levels seen in the quantitative analysis trend.

The literature reviewed in chapter two shows employment as one of the main objectives for SEZs globally but also notes that successful SEZs don't view social, economic and environmental considerations separately having mostly integrated them in SEZ development. International experience discussed in the literature review indicates that competitiveness of SEZs often gets

associated to labour standards and social compliance showing that the shift towards worker support mechanisms can be seen as part of broader global pattern where SEZs are shifting from focusing on just employment numbers to incorporating social compliance.

4.3.4 Environmental impacts of SEZs in Ethiopia before and after HGER

This subsection assesses the environmental performance of SEZs through a governance and compliance framework comparing the management of environmental issues prior and post HGER. It examines whether HGER contributed to systematic environmental governance within SEZs or if compliance still remains driven by external buyer requirements and operational constraints. Majority of the respondents described environmental management within the SEZs as fragmented and inconsistent prior to the reforms. It was stated that operation was uneven and weak despite some infrastructure like wastewater treatment facilities existed. Interviewees highlighted how before the reforms SEZs would comply with environmental standards because external buyers require it.

Factory managers stated that investments in environmental standards were seen as costs not important components of industrial strategy and although monitoring systems existed, they were not properly implemented on the ground. An SEZ manager noted that prior to HGER, environmental outcomes depended largely on individual firm behaviour and not on systematic governance. Production targets and cost competitiveness were primary objectives, and environmental outcomes were subordinated to these goals.

Another SEZ manager stated that following the reforms, they observed environmental outcomes being gradually considered within SEZs with things like wastewater performance, reporting and regulator's coordination being given attention. The reform's focus on sustainability and resilience can be seen as SEZ governance structures were focusing on environmental compliance more than before. The firms that participated in the interview noted that following the reforms, there was more active management of shared environmental infrastructure, and they received clearer communication on expectations around standards and waste management. The also acknowledged how discussions on environment related issues became more frequent than before.

With HGER support programmes SEZs were able to implement environmental management measures aligned with international standards. Hawassa SEZ managed to get ISO 14001 certification for environmental management, ISO 9001 for quality management and ISO 17025 for laboratory management which enabled strong monitoring and compliance systems. Bole Lemi SEZ were able to improve oversight of environmental and technical infrastructure operations by installing computerized maintenance management system (CMMS). At company level, since the reforms

began being implemented, seven manufacturing firms across Hawassa, Adama and Bole Lemi SEZs implemented targeted environmental sustainability interventions.

Although majority of the respondents acknowledge the improvements in environmental management since the reform, they also described the achievements as fragile stating how high electricity costs, technical issues, water supply interruptions and other related issues continue to undermine consistence performance. It is believed that despite there being an ambition to make environmental management efficient, financial and capacity constraints limited the implementation.

Governance, enforcement and sustainability after HGER

Respondents indicated that following the reform there is an improvement in environmental governance with better coordination between regulatory authorities and SEZ management, but enforcement is uneven and vulnerable to external economic issues. It is reported that environmental governance reforms were supported by technical assistance of integrated management systems, monitoring of wastewater treatment and energy efficiency which were things that weren't given much attention prior to the reforms. An SEZ manager stated that coordination is much better now with them having better knowledge on who to contact at EPA when issues like sludge accumulation or chemical spill occur.

From the interview, it can be inferred that factory managers don't view environmental compliance as internally valued practice rather as important to maintain market access which creates a reliance on external pressure raising concerns about durability of environmental improvements in the future. An investor in one of the SEZs admitted that they don't view environmental compliance as an inherent compliance rather they do it because buyers (mostly from Europe) have strict requirements on it.

Tension between environmental ambition and financial sustainability is a recurring theme in the interviews with advanced treatment systems requiring continuous investment but export volatility limiting the firm's capacity to absorb those costs. This results in environmental outcomes depending on external support and stable exports. An investor stated "we want to be environmentally responsible, but we also need to stay in business. Expenses are tight and we need stable exports and appreciate external support that helps us maintain our systems.

When viewed with quantitative findings, environmental improvements can be linked to export performance as respondents repeatedly described environmental compliance as connected to maintaining access to export market where buyers usually require standards and certifications. Therefore, improvements in monitoring, coordination and internationally recognized systems can be

seen as part of conditions that support export performance. Given this, the qualitative findings explain why results are uneven with high operating costs, capacity constraints and infrastructure related issues undermining consistency.

The international evidence in the literature review supports the idea that SEZs compete not just by being cost effective but also by having good performance environmental and social sustainability wise. When we look at developing nation's context, environmental compliance of SEZs usually begins with external requirements and push but becomes more institutionalized when governance systems and enforcement capacity aligns.

4.3.5 Challenges Affecting SEZ performance and Opportunities for future development

This section looks into the challenges affecting SEZ performance and opportunities for future growth and compares the challenges and opportunities that were there before the reform and those that are currently occurring. This is assessed by drawing on the semi structured interviews with stakeholders.

Persistent challenges

Logistics and Transportation costs

Across all three SEZs and government officials almost all of the respondents highlighted logistics as the most significant challenge constraining SEZ performance and discouraging investors from entering the market. An investor in one of the SEZs stated that as the nation is landlocked forced to use ports in other nations, transport costs to ports are very high with fees getting as high as 25% of production costs and lead times are very difficult to manage reducing their ability to compete with producers in coastal countries. Logistics continues to be the biggest constraint because it offsets other competitive benefits like low wages and good products. Investors in other SEZs echoed this sentiment with some adding that logistics issue also affects predictability as lead times are unpredictable and buyers need to know when their order will arrive.

An official from EIC acknowledged this challenge stating that despite various measures to address this issue being announced under the HGER logistics is the hardest problem to solve as it involves multiple stakeholders and reforms are underway with the sector being liberalized, customs being digitized and investments in rail being made but it'll take time and managing investor expectation while the reforms are implemented is crucial.

Foreign Exchange Shortages and Currency Volatility

Many of the respondents noted that foreign exchange shortages are still a problem despite the foreign exchange reforms being impactful and helpful. An investor explained that the foreign exchange retention measures have been helpful though not a complete solution as they still face delays in accessing foreign exchange for non-retained amounts and there is a distortion due to the gap between the official and parallel market rates leading to exporters being taxed when the official rate is overvalued. The reform measures have narrowed the gap but not eliminate it. Another investor noted that access to foreign exchange needed for importing raw materials is still unpredictable and delayed with them having to wait weeks or months to get foreign exchange they need disrupting their schedules. Although the reform measures have improved the situation it hasn't solved the challenge fully.

Labour Turnover, Living Costs and Low Wages

Labour turnover mainly driven by rising living costs was stated as a continuous operational challenge by SEZ managers and investors. An SEZ manager stated that due to high living costs and housing pressures, they experience staff turnover and though wages have adjusted upwards it's not catching up to the rising cost of living. There is still no formal minimum wage framework that brig consistency across companies as well. A worker representative stated that despite wages increasing compared to a few years ago, the cost of living has been rising with rent food and transport cost taking majority of their earnings forcing them to look for better opportunities elsewhere.

An official from EIC noted that an introduction of minimum wage framework is a requirement as part of the SEZ proclamation and recently a minimum wage study was conducted with a range from 5,500 Birr to 6,000Birr being proposed as a minimum wage. They are planning to pilot these minimum wage restrictions in selected SEZs in the coming years. They also reiterated that setting a minimum wage has its own issues with potential discouragement of investment but it's part of the SEZ proclamation and it's believed to do more good than harm.

Institutional Coordination and Implementation Gaps

Respondents raised gaps related to coordination and implementation between federal and regional authorities despite institutional reforms being implemented. An investor from one of the SEZs stated that coordination has improved at senior levels with dialogue being more open but there is a disconnect with implementation at operational levels creating frustration for investors. Senior level officials like the commissioner are accessible at regularly held dialogues but customs counter or immigration office cause delays with slow processes and responses indicating that the high-level reforms may not have fully translated to day-to-day ease of doing business.

An SEZ manager highlighted that senior level coordination has improved a lot with gaps remaining around labour regulation, wage and logistics related issues and coordination across agencies in providing solutions. They have regular meetings with EIC and IPDC officials but bureaucratic delays and overlaps still continue to pose challenges at the ground level.

External Shocks and Volatility of Market

The significant impact external shocks like AGOA suspension, COVID-19, red sea crisis, global inflation and domestic conflict had on SEZs performance was highlighted by respondents across all SEZs often viewed as having overshadowed and offset the benefits HGER measures intended to bring. Of the SEZs chosen for interview, Hawassa SEZ is the SEZ that has been the most impacted with external shocks within addition to the other economic shocks most of the companies from Hawassa SEZ were exporting to US markets and were then forced to shift to other markets when AGOA suspension occurred.

An investor explained that Hawassa experienced various external shocks with AGOA suspension, US investors leaving including big buyers like PVH and internal conflict in the nation. The reforms have helped in stabilizing operations, but export volumes have fluctuated a lot. Some companies have exited and those that are left seem to be resilient now having adjusted their business models and diversified their markets. An SEZ manager from one of the SEZs added that although the reforms have helped with tacking some challenges, the market remains volatile and buyers don't have full confidence to invest.

Opportunities for future SEZ Growth

Market Diversification

An SEZ manager stated that market diversification toward European and other nations is one of the biggest opportunities to increase performance of SEZs for the coming years. Firms have been working on improving and strengthening their compliance and management systems so they can be better positioned to meet the requirement of European buyers. Before AGOA suspension, they were largely dependent on the US market but now they have buyers from Italy, Germany, France, Spain, UK and they are continuing to diversify by exporting to other nations. An investor added that there is also diversification with focusing on import substitution alongside exports as this broadens the SEZs role and reduces their exposure to global market volatility.

Increased Demand for SEZ space and Infrastructure Expansion

Respondents indicated that currently, there is increased demand for sheds from investors wanting to expand their production base. This is especially apparent in Bole Lemi SEZ which have completed two phases of factory shed building and have now begun a third phase with future plans to change the SEZ into smart industrial area including AI institute and nearby city park. An SEZ manager stated that there is huge demand for space from investors and occupancy levels are high with the zone continuing to attract both foreign and local investors. Phase 3 has begun with 8 additional factory sheds being built and expected to be finalized in the coming months. The demand from investors for new factory sheds is so high that they are turning some investors away. Hawassa SEZ is experiencing something similar to this as they have new investors working on solar manufacturing that are demanding space in their SEZs. This is a huge opportunity that the SEZs need to capitalize on by addressing infrastructure constraints.

Leveraging International compliance and certification

The ability and requirements to meet international social and environmental standards have been identified by respondents as both a challenge and an opportunity. Majority of the respondents see these requirements as opportunity as meeting compliance and having certifications puts the firms in a better position to access buyers. An investor from one of the SEZs stated that social and environmental compliance requirements are no longer optional and are central to maintaining export markets. Firms that meet these requirements and are certified in some of the measures like ISO, BSCI, SEDEX are becoming more preferred and better positioned to secure new orders.

Backward Linkages and Local Supplier Development

The development of local supplier networks which reduces reliance on imported inputs is one of the opportunities noted by respondents across the SEZs. Adama SEZ is one of the SEZs which implements this well as they have vertically integrated factory with some of their textile firms producing from yarn to final products. An SEZ manager stated that there is a growing opportunity in having as higher value vertically integrated production and that they are supporting firms that produce inputs like yarn, fabric and accessories so reliance on imported raw materials can be reduced. This will enable them to reduce their exposure to foreign exchange shortages and global disruptions.

Using Public Private Dialogues as a platform for continuous improvement

Respondents across the SEZs and government officials highlighted public private platforms (PPDs) as an opportunity to continuously work on flagging problems and getting them addressed. An official

from EIC stated that this year they have developed a tool known as FDI secretariat to track issues and feedback from investors online and engage with them. Issues that previously took long period of time to address will now be logged online and followed up with clear transparency. An investor added that the PPDs are useful as they serve as a platform to raise issues regularly with senior officials being present. They no longer have to go through many levels of bureaucracy to raise challenges but a close follow up is still needed.

Synthesis of Findings with Existing Literature

The findings of this study both align with and differ from existing literature on SEZ performance. They are consistent with previous research emphasising that governance quality, institutional coordination and broader economic conditions play a critical role in shaping SEZ outcomes, beyond the provision of incentives alone. The qualitative findings of this study support this view, suggesting that there have been gradual improvements in institutional coordination and regulatory frameworks in the context of SEZ operations.

At the same time, the study departs from evidence observed in high-performing SEZ cases such as those in China and several Southeast Asian countries, where strong and statistically significant improvements in exports and employment have been documented following policy support. In contrast, while the quantitative results of this study show that export and employment levels were higher on average in the post-reform period, these changes are not statistically significant. This indicates that the evidence is not sufficient to conclude that the observed changes can be attributed to the reforms.

Instead, the findings suggest that improvements in SEZ performance are uneven and likely influenced by a combination of factors, including broader economic conditions, implementation capacity, and structural constraints. This contrasts with more successful SEZ experiences, where policy reforms were accompanied by strong institutional capacity, favourable macroeconomic conditions and consistent implementation.

Ethiopia's case therefore reflects patterns observed in several developing countries, where SEZs may exhibit improvements in selected indicators but continue to face structural and institutional constraints that limit their overall effectiveness. The findings suggest that the reforms may have contributed to improvements in the institutional and operational environment of SEZs, although their

measurable economic effects remain unclear, highlighting the need for continued institutional strengthening and improved policy coordination.

Chapter Five: Summary of Findings, Conclusion and Recommendations

5.1 Summary of Findings

This section summarises the key findings of the study by integrating both quantitative and qualitative results to provide a comprehensive understanding of SEZ performance in Ethiopia during the period of the Home-Grown Economic Reform Agenda.

The quantitative analysis indicates that export and employment levels were generally higher on average in the post-reform period compared to the pre-reform period. However, these changes were characterised by fluctuations rather than a steady upward trend. Although descriptive statistics suggest some recovery in performance in recent years, the econometric results show that the observed differences are not statistically significant, indicating that there is insufficient evidence to attribute these changes directly to the reform measures.

The qualitative findings provide important context for interpreting these results. Respondents across the selected SEZs described changes in the operational and institutional environment as gradual rather than transformative. Improvements were noted in areas such as regulatory clarity, governance practices and institutional coordination. At the same time, persistent structural challenges, including logistics constraints, labour turnover, foreign exchange shortages and exposure to external shocks, were identified as key limiting factors. These challenges help explain why increases in performance indicators are observed at an aggregate level but remain inconsistent and uneven over time.

Furthermore, the qualitative evidence suggests a shift in the focus of SEZ development. While earlier emphasis was placed primarily on economic indicators such as exports and employment, there is increasing attention to social and environmental considerations. Improvements in areas such as worker support systems and environmental management practices were identified; however, these developments remain uneven and are often driven by external requirements rather than internalised institutional capacity.

When considered together, the findings indicate that the reforms are associated with gradual improvements in the institutional and operational environment of SEZs, rather than clear or statistically robust changes in measurable performance outcomes. Although the reform context may have supported improvements in enabling conditions, the translation of these changes into measurable economic outcomes appears to be slow and heavily influenced by broader structural constraints and external factors.

5.2 Conclusion

The aim of this study was to examine how Special Economic Zones (SEZs) in Ethiopia have performed within the context of the Home-Grown Economic Reform Agenda (HGER). Using a mixed-methods approach, the study combined quantitative analysis to observe trends in performance indicators with qualitative analysis to understand the underlying factors shaping these trends and fluctuations.

The quantitative findings indicate that export and employment levels were generally higher on average in the post-reform period compared to the pre-reform period. Descriptive analysis shows that performance improved in some years, although trends were characterised by fluctuations rather than consistent growth. The econometric analysis also suggests a positive relationship between the post-reform period and SEZ performance indicators, with employment increasing by approximately 53 percent and exports by approximately 105 percent on average. However, these results are not statistically significant, meaning that the study does not provide sufficient evidence to conclude that the observed changes can be directly attributed to the reform measures. In addition, broader economic conditions, global shocks and country-specific challenges are likely to have influenced these outcomes.

The qualitative findings provide important context for interpreting these results. Stakeholders across the selected SEZs consistently described changes following HGER as gradual rather than transformative. Improvements were noted in areas such as governance, policy clarity and institutional coordination, particularly following the transition from industrial parks to a more formalised SEZ framework. At the same time, respondents emphasised the need for further strengthening of institutional coordination, clearer role definition among key actors and improved service delivery mechanisms.

The qualitative results also suggest a shift in the focus of SEZ development. While earlier emphasis was placed primarily on economic indicators such as exports and employment, there is increasing attention to social and environmental dimensions. Improvements were observed in areas such as worker support systems, grievance mechanisms and environmental management practices, with SEZs gradually aligning with international standards. However, these developments remain uneven and are often driven by external requirements rather than fully embedded institutional capacity, and challenges remain regarding wages, worker welfare and sustainability.

Persistent structural constraints continue to limit SEZ performance. Key challenges identified include logistical inefficiencies, foreign exchange shortages, labour turnover and coordination gaps. These

constraints, combined with external economic and political shocks, help explain why improvements in performance indicators were not statistically strong and why gains remain uneven across zones and over time.

Overall, the findings suggest that SEZ performance improved on average over time, but this improvement cannot be conclusively attributed to HGER based on the available quantitative evidence. Instead, the results indicate that the reform is associated with gradual improvements in the institutional and operational environment of SEZs, while its measurable economic effects remain uncertain. This suggests that, although the reform may have contributed to creating more favourable conditions for SEZ performance, the realisation of these benefits depends on addressing underlying structural constraints and strengthening implementation capacity.

5.3 Recommendations

The study concluded that although the HGER has introduced important improvements it has limited impact on SEZ performance being influenced by external and structural constraints. Based on the findings and conclusion of the study the following recommendations are proposed.

Recommendations for Policy makers and Key Stakeholders

- **Improving Implementation and operational consistency:** Despite the HGER measures improving institutional frameworks and coordination mechanisms, the study shows that there are gaps between high level policy reforms and their implementation at operational levels. To address these EIC, IPDC and relevant regulatory bodies should standardise procedures and operational challenges should be closely followed up on using existing coordination platforms to make sure that reforms are implemented consistently across SEZs.
- **Addressing operational Constraints Affecting SEZ performance:** It was found that external shocks and operational challenges continue to affect SEZs performance offsetting potential gains from policy reforms. Therefore, institutions working on trade, customs and foreign exchange management should focus on improving efficiency of existing systems by reducing delays in customs processes and foreign exchange allocations.
- **Improve labour conditions and workforce sustainability:** Qualitative findings show that despite improvements in social conditions of SEZs labour force following the reform, challenges remain related to labour turnover, wages and worker welfare. SEZ management, IPDC and other relevant institutions should work on expanding and strengthening worker

support mechanisms and at policy level EIC and ministry of Labour and skills should proceed with piloting the proposed minimum wage framework within SEZs.

- **Deepen social and environmental governance in SEZs:** The study showed that though there is increased attention on social and environmental standards following the reform, progress is uneven and driven by external pressures. IPDC and environmental regulators along with SEZ management should work on institutionalizing environmental and social compliance standards as part of SEZ governance.
- **Promote domestic linkages and value addition:** Local supplier development should be encouraged through incentives and targeted support for domestic firms and vertically integrated production models should be promoted and supported within SEZs.
- **Recommendation for Future research:** Further studies should examine the long-term impacts of HGER as well as the interaction between SEZ performance and external factors like global economic and trade dynamics to clearly understand what is driving growth in this sector and what can accelerate its development.

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Appendices

Appendix A: Interview Questions

For Sustainable industrial zones (SEZs) and Industrial Park Management (Bole Lemi, Adama, Hawassa and for IPDC)

1. How has SEZ operations in your park been influenced by the implementation of HGER?
2. What are some of the biggest operational challenges faced by your SEZ and how do they affect performance?
3. Are there any opportunities you foresee? Which opportunities seem most promising for future SEZ growth?
4. What is the current situation regarding challenges like staff turnover, wage pressure, housing and cost of living?
5. Are there systems like anti SEAH mechanisms, grievance systems and worker councils and have they improved worker safety, trust and reporting?
6. Were there any social and soft skills training programmes offered in your park? If so, have they been effective in improving worker performance and retention?
7. What environmental improvements or sustainability measures have been implemented recently?
8. What governance gaps can you highlight? Have HGER related reforms improved the ease of operations for investors and management?

For Investors

1. Has the investment environment for your company improved since the implementation of HGER? How have measures like forex retention, tax changes and customs improvements affected your operations?
2. What are the main challenges you face? And what key factors limit your competitiveness?
3. Are you expanding or reducing your workforce and production? Why?
4. Is there staff turnover in your company? If so, what are the main reasons for that?
5. What challenges do you face in meeting social compliance requirements?
6. Are environmental audits or sustainability certifications requested by buyers?
7. What are your future plans in terms of investing in Ethiopia? Under what conditions would you expand operations or increase your investment in Ethiopia?

For Worker Representatives

1. Since recent reforms and changes in the operating environment of the SEZs, how has employment situation changed?
2. Since the IPs have been upgraded to SEZs have wages, cost of living and working conditions changed?
3. Are grievance and SEAH reporting mechanisms accessible, confidential and trusted?
4. How often are trainings offered? And have they helped improve skills or access better opportunities?
5. What are the main factors that contribute to worker turnover in your SEZ/company?
6. Are there any social or environmental programmes being implemented? How have they affected worker wellbeing?

For Government Stakeholders (EIC, IPDC, MOI)

1. What measures implemented under the HGER have had the greatest impact on SEZ performance? And what improvements have been made in park governance, infrastructure and investor services?
2. Have the SEZ proclamation and the measures taken under HGER influenced investor decision?
3. What policy or governance gaps require further attention?
4. How effectively are agencies such as MoI, IPDC, Customs and logistics bodies coordinating around SEZ reforms?
5. Have public private dialogues (PPDs) helped identify and resolve business environment issues?
6. What regulatory or capacity gaps remain in supporting SEZ operations?
7. What progress has been made on environmental compliance and sustainability?
8. How are worker welfare issues like wages, turnover and housing being addressed?
9. How are grievance mechanisms like SEAH related systems currently handled and monitored?

Appendix B: Data

Year	SEZ	Export	Employment
2017	Hawassa	20,216,170	21,733
2018	Hawassa	37,144,451	23,873
2019	Hawassa	90,474,873	25,026
2020	Hawassa	52,988,852	25,985
2021	Hawassa	47,825,000	29,754

2022	Hawassa	56,163,104	25,645
2023	Hawassa	39,402,544	22,727
2024	Hawassa	30,794,287	17,927
2025	Hawassa	91,573,698	17,652
2017	Bole Lemi	32,000,402	15,383
2018	Bole Lemi	29,402,692	15,986
2019	Bole Lemi	53,228,520	16,111
2020	Bole Lemi	45,567,406	16,594
2021	Bole Lemi	68,410,000	18,645
2022	Bole Lemi	65,005,999	20,987
2023	Bole Lemi	47,142,180	19,981
2024	Bole Lemi	43,480,309	23,740
2025	Bole Lemi	49,079,224	30,546
2017	Adama	.	1,065
2018	Adama	295,665	1,155
2019	Adama	4,443,708	3,598
2020	Adama	4,194,088	4,589
2021	Adama	6,834,000	7,684
2022	Adama	14,079,390	6,648
2023	Adama	13,030,864	6,440
2024	Adama	16,084,135	6,895
2025	Adama	12,245,545	7,330
2017	Kombolcha	.	1,366
2018	Kombolcha	3,244,320	1,358
2019	Kombolcha	9,096,234	1,958
2020	Kombolcha	7,217,064	1,457
2021	Kombolcha	5,106,000	1,038
2022	Kombolcha	5,361,234	1,773
2023	Kombolcha	4,150,329	1,406
2024	Kombolcha	3,964,543	1,512
2025	Kombolcha	15,142,588	3,631
2017	Debre Birhan	.	.
2018	Debre Birhan	.	.
2019	Debre Birhan	327,592	1,327
2020	Debre Birhan	621,378	1,435
2021	Debre Birhan	1,090,940	1,167
2022	Debre Birhan	3,379,863	2,858
2023	Debre Birhan	2,073,272	2,648
2024	Debre Birhan	507,363	1,865
2025	Debre Birhan	1,208,277	2,245

Source: EIC

Appendix C: STATA Outputs

Figure 4:Descriptive Statistics Results

Variable	Obs	Mean	Std. Dev.	Min	Max
Export	41	2.52e+07	2.58e+07	295665	9.16e+07
Employment	43	10761.47	9892.502	1038	30546

Figure 5: Main Regression Result for Exports

```
Fixed-effects (within) regression               Number of obs     =         41
Group variable: sez_id                          Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.1982                                         min =          7
     between = 0.9832                                         avg =        8.2
     overall = 0.0032                                         max =          9

                                                F(1,4)            =       3.34
corr(u_i, Xb)  = -0.1531                        Prob > F          =     0.1418

                                  (Std. Err. adjusted for 5 clusters in sez_id)
------------------------------------------------------------------------------
             |               Robust
  ln_export  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  post_hger  |   .7176335   .3928507     1.83   0.142    -.3730948    1.808362
      _cons  |   15.66689   .2874517    54.50   0.000     14.86879    16.46498
-------------+----------------------------------------------------------------
     sigma_u |   1.685942
     sigma_e |  .68380986
         rho |   .8587322   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Figure 6: Main Regression Result for Employment

```
Fixed-effects (within) regression               Number of obs     =         43
Group variable: sez_id                          Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.2211                                         min =          7
     between = 0.2410                                         avg =        8.6
     overall = 0.0087                                         max =          9

                                                F(1,4)            =       2.22
corr(u_i, Xb)  = -0.0725                        Prob > F          =     0.2106

                                  (Std. Err. adjusted for 5 clusters in sez_id)
------------------------------------------------------------------------------
             |               Robust
ln_employm~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  post_hger  |   .4258618   .2859094     1.49   0.211      -.36795    1.219674
      _cons  |   8.382628   .1994717    42.02   0.000     7.828805     8.93645
-------------+----------------------------------------------------------------
     sigma_u |  1.2849966
     sigma_e |   .39110517
         rho |   .91521727   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Figure 7: Serial Correlation result for Employment

```
Fixed-effects (within) regression               Number of obs     =         43
Group variable: sez_id                          Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.2211                                         min =          7
     between = 0.2410                                         avg =        8.6
     overall = 0.0087                                         max =          9

                                                F(1,4)            =       2.22
corr(u_i, Xb)  = -0.0725                        Prob > F          =     0.2106

                                 (Std. Err. adjusted for 5 clusters in sez_id)
------------------------------------------------------------------------------
             |               Robust
ln_employm~t |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   post_hger |   .4258618   .2859094     1.49   0.211      -.36795    1.219674
       _cons |   8.382628   .1994717    42.02   0.000     7.828805     8.93645
-------------+----------------------------------------------------------------
     sigma_u |  1.2849966
     sigma_e |   .39110517
         rho |   .91521727   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Figure 8: Serial Correlation Result for Export

```
Fixed-effects (within) regression               Number of obs     =         41
Group variable: sez_id                          Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.1982                                         min =          7
     between = 0.9832                                         avg =        8.2
     overall = 0.0032                                         max =          9

                                                F(1,35)           =       8.65
corr(u_i, Xb)  = -0.1531                        Prob > F          =     0.0058

------------------------------------------------------------------------------
   ln_export |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   post_hger |   .7176335   .2439512     2.94   0.006     .2223862    1.212881
       _cons |   15.66689   .2080081    75.32   0.000     15.24461    16.08917
-------------+----------------------------------------------------------------
     sigma_u |   1.685942
     sigma_e |   .68380986
         rho |   .8587322   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(4, 35) = 47.08                     Prob > F = 0.0000
```