Development in a Complex World: The Case of Ethiopia

A Compendium of Project Research on *Advancing Economic Diversification in Ethiopia*

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November 15, 2022

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[1] Universidad Torcuato Di Tella

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I. Introduction

Development Over Generations

This compendium goes into significant detail on matters of economic growth and macroeconomic stability in Ethiopia. It discusses many technical concepts and Ethiopia-specific contextual factors and aims to do so in a way that introduces and explains these issues without relying on economic jargon. But before going on this journey into Ethiopia's growth process, constraints, and underlying issues, it is important to ask ourselves why this all matters. Why do we care about economic growth and what does economic growth mean for people? At Ethiopia's GDP per capita of under 1,000 USD, growth of the Ethiopian economy matters immensely for the wellbeing of the more than 100 million Ethiopians who live in Ethiopia, as well as millions more who live abroad in search of better opportunity. But what does that mean exactly? How do Ethiopians view their current economy and what has past growth meant for generations of Ethiopians?

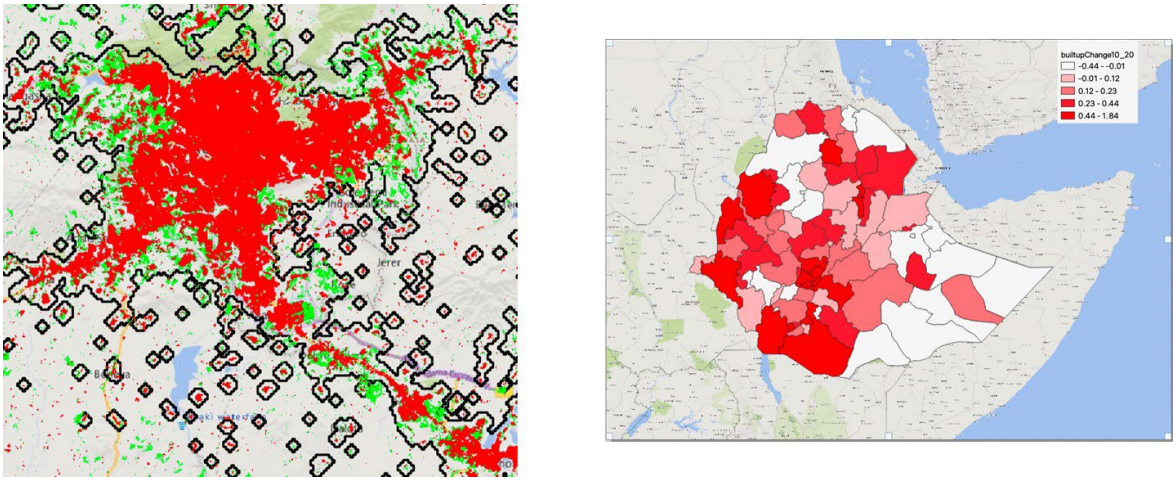
In a series of discussions in late 2022, after the research included in this compendium was completed, we explored these questions. In these discussions with Ethiopians from various walks of life, we sought to understand the real experiences of those who have lived through the last two decades of explosive growth in Ethiopia, averaging close to 10% per year. We hoped to understand what this growth has meant for Ethiopian families over generations, especially if and how opportunities differ for young Ethiopians today versus when their parents were young or when their grandparents were young. What hopes do parents have for their children and the next generation, and what concerns? While it would be impossible to arrive at a single answer to these questions for such a large and diverse society, there were several common themes that emerged from these discussions. This compendium ultimately aims to understand the economic forces behind these lived experiences and identify opportunities to position the Ethiopian economy to support the hopes of Ethiopians for generations to come.

A common thread across the interviews was a sense of discomfort with the intensity of change that Ethiopia has experienced. Whether speaking to a young professional in her 20s or the head of a multi-generational family, much has changed in Ethiopia over the course of their lives. There have been real positive changes with increased economic growth heralding new opportunities in terms of education, employment, and entrepreneurship. However, new challenges have also emerged amidst the economic change, sometimes putting new pressures on the fabric of society. In reflecting on the past, many Ethiopians today noted the increase in opportunities afforded to them. The increase in agricultural productivity meant households engaged in farming were able to increase their incomes and imagine a different future for their children. Many Ethiopians have been able to enjoy much greater access to education and physical mobility. As the education system has expanded, this meant that many individuals became the first in their family history to complete secondary school or attend university. When speaking about the benefits of growth over the last few decades, many Ethiopians view expanded access to education as the largest benefit.

Access to education continues to be a central desire for many families. A very small minority of Ethiopians are even able to access higher education, whether in Ethiopia or abroad. This focus on education may not be unique to Ethiopia, but it is noteworthy how often education was brought up as the goal for families, along with better access to job opportunities. For many individuals interviewed, education exposed them to professions and pathways that were not visible to them growing up. The growth of the economy has supplied many more jobs and opened new professions, but graduates in Ethiopia today are not necessarily met with sufficient job opportunities. Some parents interviewed worried that their children who are on a professional track in their training will be among many applying for few positions and may have to move abroad for professional work. This is not necessarily new. Many interviewees desired to be a doctor or a lawyer or an engineer when they were in school and ended up starting businesses that diverged from their educational background. At the same time, higher education remains an inaccessible goal to many across the country. In many rural settings, a few years of secondary education reflect the highest level of schooling achieved in the family's history.

In Ethiopia, economic and social mobility have changed together with geographic mobility. Perhaps the most tangible and physical manifestations of Ethiopia's growth are seen in the urban agglomerations of the country. Agglomerations have grown and sprung up around roads and resulted in much more built-up areas. It is possible to track such urbanization and change in build-up using satellite imagery. Using granular satellite imagery of Ethiopia between 2010 and 2020, we used use machine learning algorithms to detect changes in build-up over time across the country. Figure 1.1 shows the change in build-up between 2010 and 2020 for Addis Ababa on the left (the green areas indicate new build-up) as well the percentage change in built-up areas aggregated to the zone and woreda levels across the country. Addis Ababa saw significant growth in the periphery of the city. Meanwhile, many areas of the country that have historically been rural saw very large growth in builtup areas of 50% or more.

Figure 1.1: Change in Build-Up between 2010 and 2020 for Addis Ababa and Whole Country

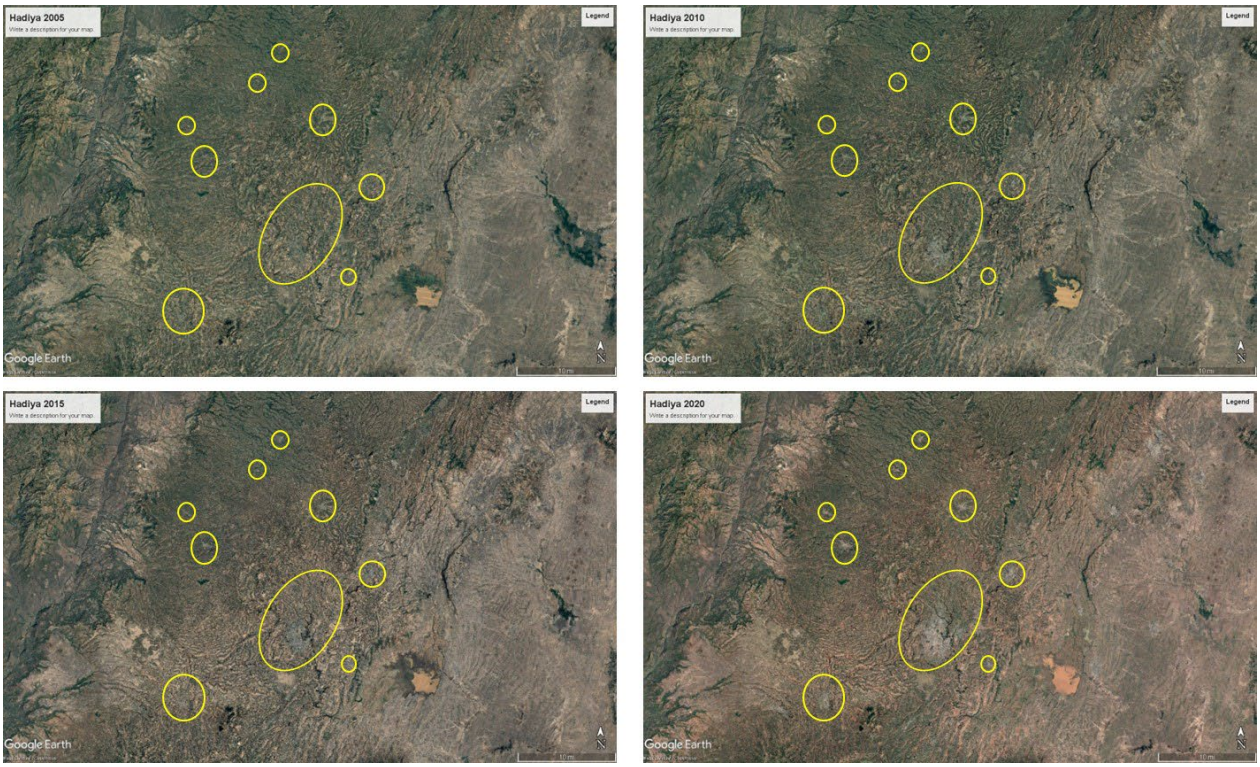


Source: Analysis using PlanetScope data

Addis Ababa is unique in many ways in the country, including as a geographic space where ethnic groups have historically mixed, but the dynamics of the capital are indicative of changes in urban spaces at the national level. Roads, buildings, healthcare facilities, and public spaces have all improved over time, while city population has increased over time, from an estimated 2.7 million people in 2007 to 3.8 million people in 2022 (Ethiopian Statistics Service). There is a sense that the urbanization process is under stress, however, with people moving into cities at a faster rate than cities are producing jobs, whereas the opposite used to be true. This happens to match what is found in Ethiopia's Urban Employment and Unemployment Survey, which shows a key change in 2015. Before this year, all cities saw increasing employment rates, but since then, all outside of Addis Ababa have consistently experienced decreasing employment rates.

Several discussions suggested that whereas rural poverty has long been common in Ethiopia, urban poverty is a newer problem that has come with urbanization. Many places have, in fact, emerged as urban centers that had historically been more rural. Based on the above analysis of satellite imagery, the Hadiya Zone saw one of the highest increases in overall built-up area. Figure 1.2 shows the change in this zone centered in and around its administrative center, the town of Hoesana. This town itself has seen an increase in its population from about 70K in 2007 to approximately 180K people by 2021. We can see this expansion of the town in the images below. But beyond this, we also see the emergence and growth of many smaller agglomerations nearby.

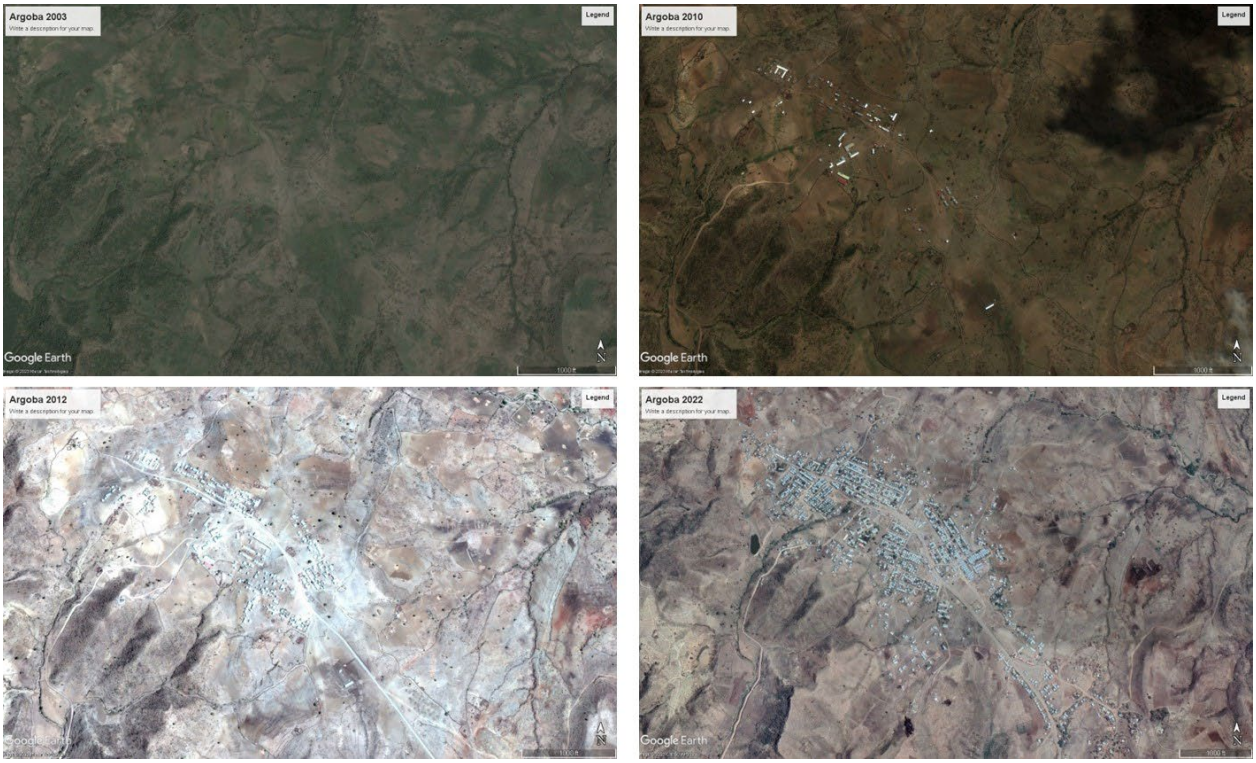
Figure 1.2: Satellite Imagery of Hadiya Zone, 2005 to 2020



Source: Google Earth

It is difficult to overstate the degree of change that has come through this process since the early 2000s, even outside of urban areas. Figure 1.3 shows in more detail how one place changed between 2003 and 2022 based on satellite imagery. This area is in the Argoba Special Worede in the easternmost part of the Amhara region, which is very remote and sparsely populated. However, it was one of the places with the highest relative change in built-up areas between 2003 and 2022. Looking at the satellite imagery, we can see that an area which in 2003 had no human settlement and build-up had started to develop by 2010. Between 2010 and 2012, a full town had sprung up, which only continued to grow till the present. Here we can see visually the fast pace of change at a very local level, including the development of road infrastructure.

Figure 1.3: Satellite Imagery of Chomiye in Argoba Special Woreda, 2003 to 2022



Source: Google Earth

This movement of people within the country has come with changing living conditions and changing ideas, which have resulted in a large amount of flux in society. In looking back at these changes, one speaker reflected, “The Ethiopia of the past was socialist, but now it’s confusing.” For some, the change in urban centers, like Addis Ababa, has been too much such that they hardly recognize the places where they grew up. The growth of some urban centers has also come with frictions in land ownership and land use as cities and public infrastructure expanded into what was previously farming and grazing land. During the time of these discussions in 2022, people were deeply uncertain about the future and what was in store for their families as a two-year conflict

had become entrenched. In addition to the conflict, an immediate concern for most people was high inflation, which is reducing their purchasing power and eroding the value of their savings.

When speaking to business owners, they raised a common set of issues. Challenges in accessing imports needed to run their businesses were a ubiquitous constraint, which will be discussed at length in this compendium. Business owners also noted challenges in finding the specific types of skilled workers that they need and affording their salaries and retaining them. Beyond imports and labor, many complained about gaps in infrastructure and public services, such as interrupted access to power and poor internet connectivity. Many business owners said that they were facing declining demand for what they produce as of 2022. This was especially noteworthy among businesses that feed into the construction industry, which was experiencing a sharp slowdown.

At the time of writing, Ethiopians recognize the benefits of recent economic growth, along with the accompanying stresses, but are increasingly concerned about the present and future. The conflict in the north of the country has transported many people back to a period of uncertainty due to losses of life, property, and livelihoods. Inflation is a constant source of anxiety while food shortages due to the severe drought and the conflict affect far too many in the country. It is hard for people to feel positive about the future if economic growth over the past generation is seen as an exception the growth process feels as if it may be unravelling. Some Ethiopians still see the future as bright for their children in Ethiopia, but many others have concerns and wonder if their children will have to leave Ethiopia to enjoy a higher quality of life and better opportunities than they have experienced.

Exceptional Economic Growth Under Strain

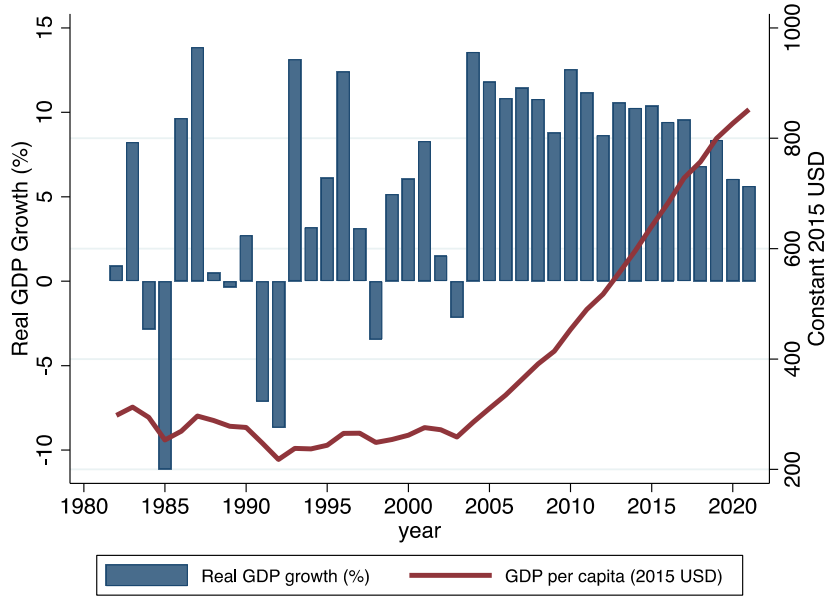
Ethiopia has been one of the world's fastest-growing economies over the last two decades, with official GDP growth averaging over 10% per year between 2004 and 2020. Rapid growth has more than tripled average income (in constant dollars) and lifted tens of millions of people out of extreme poverty.[1] However, given that sustained growth started from a very low base, Ethiopia remains one of the poorest countries in the world, with a per capita income below $1,000 ($944 in 2021, WDI). In terms of purchasing power parity (PPP), which adjusts for prices in different economies, this amounts to closer to $2,600 in terms of what goods and services Ethiopians, on average, can afford. Averages, of course, are just that. Many of Ethiopia's population of over 100 million people live at subsistence levels, while a small minority experience what would be viewed as a lower middle-income lifestyle in a developed country. Ethiopia's relatively undiversified agrarian

[1] Though official GDP statistics are easy to manipulate — and likely have been in Ethiopia — other indications of economic growth that cannot be exaggerated tell a similar story. Growth in the intensity of lights at night using satellite imagery show a similar pattern where Ethiopia has been one of the world's most rapidly growing economies since the turn of the millennium (Luis, 2021)

economy still leaves a large share of Ethiopian families and communities highly vulnerable to weather-related shocks and climate change impacts.

When a country starts poor, it is easy to dwell on how it remains poor, but successful growth episodes are worth understanding. Ethiopia's growth since 2004 has coincided with rapid improvements in human health and educational outcomes. In 2004, life expectancy in Ethiopia and was 55 years and its infant mortality rate was 73 deaths for every 1,000 live births. By 2020, life expectancy had improved to 67 years and the infant mortality rate more than halved to 35 deaths/1,000 live births. Figure 1.4 helps to put Ethiopia's exceptional growth acceleration in some perspective.

Figure 1.4: Real GDP Growth and GDP Per Capita



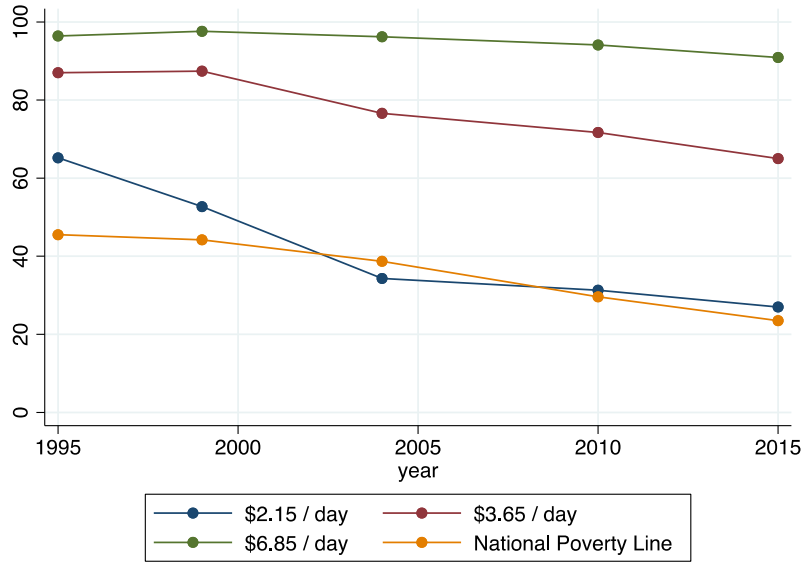
Source: World Bank WDI

Prior to 2003, Ethiopia's growth was essentially zero and defined largely by its volatility. Annual growth rates (the blue bars in the graph) reflected wild swings in high growth and rapid collapse, especially in the 1980s and early 1990s. During this period, Ethiopia was governed by the authoritarian Derg regime, and years of collapse coincided with years of drought. The Derg was a military council that had highly centralized approach to economic management that mirrored Soviet principles. During the 1990s and early 2000s, under the new government led by the Ethiopian People's Revolutionary Front (EPRDF) — a political coalition built upon the principle of ethnic federalism and led by Meles Zenawi — Ethiopia's economic growth patterns began to change. Years of economic growth became more frequent and economic contractions became less severe. Still, GDP per capita barely changed when measured in constant (inflation-adjusted) U.S. dollars, as captured by the red line in the figure. But after 2003, something changed. Rather than

seeing just one or two years of rapid growth, Ethiopia entered a period of sustained, very strong economic growth. For well more than a decade, Ethiopia maintained its high rate of growth, even though there were years of drought and global shocks over this time, including food and fuel price shocks and then the Global Financial Crisis in 2008.

High and sustained growth meant that average incomes grew rapidly over this period. After decades at essentially subsistence levels of income per capita (~$250 USD as measured in 2015 dollars), GDP per capita grew quickly. This also allowed for poverty rates — however you choose to measure them — to decline, as shown. Gradual declines in the national poverty rate were already registered when estimated in 1998 and 2004 (Figure 1.5), but this accelerated over the next decade as the official poverty rate fell from 39% in 2004 to 24% in 2015. By international poverty thresholds, "dollar-a-day" poverty, which is a measure of extreme poverty that amounts to $2.15 per day in 2017 dollars, dropped very sharply early in the growth process and continued to fall thereafter. Meanwhile, higher thresholds of poverty, which capture more of the population, also began to fall since 2000. In 1999, almost 90% of the population spent under $3.65/day and close to the entirety of the population lived on under $6.85/day. As the figure shows, by 2015, around 35% of the population spent over $3.65/day and almost 10% over $6.85/day. To a first approximation, Ethiopia was on a path of exceptional growth that was pulling many people out of poverty.

Figure 1.5: Poverty Rates According to Various Thresholds



Note: International poverty thresholds are based on 2017 USD, PPP
Source: World Bank WDI

Declines in poverty, expansion in household consumption, and improvements in food security were remarkably broad-based overall. This outcome was supported by strong agriculture output

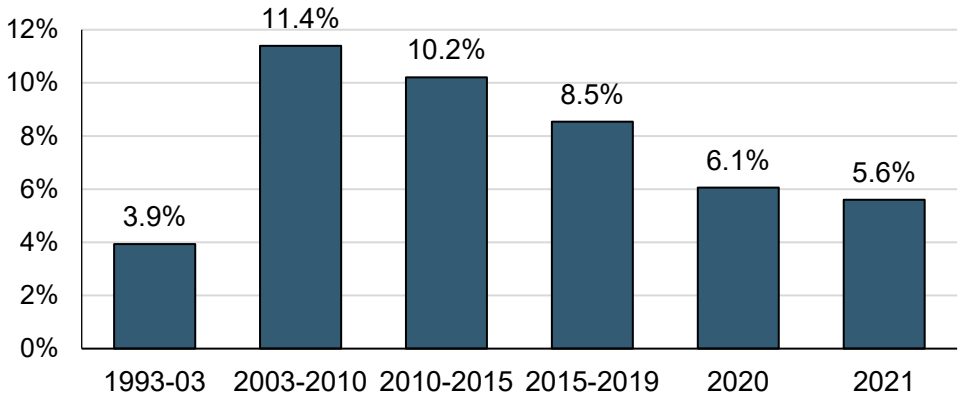
growth in rural areas, together with strong growth in demand for small and micro businesses in urban areas, along with poverty reduction associated with Ethiopia's large Productive Safety Net Program (PSNP). At the same time, the rapid and sustained growth did not necessarily reach everyone. As of 2015, almost a third of Ethiopians still lived on less than $1.90 per day. Between 2011 and 2016, poverty rates fell for all regions of the country, but with generally larger declines driven by urban areas (See World Bank's Ethiopia Poverty Assessment, 2020). One of few things associated with a rise in poverty headcount was the distance that a household lives from a large town. Not surprisingly, the most remote places in Ethiopia were the least likely to experience poverty reduction. Critically important was the ability of farmers to reach more markets with their production, giving them freedom to select markets with higher prices as they produced more.

Economic growth — and the accompanying freedom from extreme scarcity for many — may have been foundational toward the public demand for more voice and government accountability that resulted in the resignation of a sitting Prime Minister in 2018, leading to the current administration of Abiy Ahmed. Yet, development is a complex and highly nonlinear process. The period of four years over which the research contained in this compendium was conducted included the awarding of the Nobel Peace Prize to Prime Minister Ahmed and now two years of evolving conflict between the national government and an insurgent group centered with the Tigrayan People's Liberation Front (TPLF) as of late 2022. This is in addition to widespread violence between ethnic and political groups, the COVID-19 pandemic, and a series of significant shocks to agricultural production, including several years of prolonged drought and intensive impacts of climate change. Ethiopia's undiversified agrarian economy still leaves a large share of Ethiopian families and communities highly vulnerable to weather-related shocks and climate change impacts, but economic growth has also come with noteworthy improvements in climate resilience and government abilities to respond to shocks, including health and economic impacts of the pandemic. With greater financial resources and much-improved state capability, Ethiopia's PSNP has been a notable success in its scale and effectiveness toward addressing household poverty and food security. In a break from previous episodes of drought-induced famine, food security had dramatically improved — that is, until the recent conflict created new dynamics of extreme food shortages.

A closer look at Figure 1.4 shows that Ethiopia's exceptional growth has been under strain for several years. This pattern precedes the current conflict, the COVID-19 pandemic, and many other notable economic shocks. There is a longer-term dynamic of slowing growth at play, which is especially pronounced from 2015 onward. To better see this, Figure 1.6 shows annualized growth rates over several periods as well as registered growth in the years 2020 and 2021. Though rather volatile, growth averaged out at 3.9% from 1993 to 2003, which was a meaningful break from the preceding period. Growth was then exceptionally high from 2003 to 2010 at 11.4% and still high but lower at 10.2% over 2010-15. The general slowdown continued to reach an annualized rate of 8.5% from 2015 to 2019, before the onset of the COVID-19 pandemic. Though this is still rapid, the slowing trend highlights potential issues with the growth process that are important to

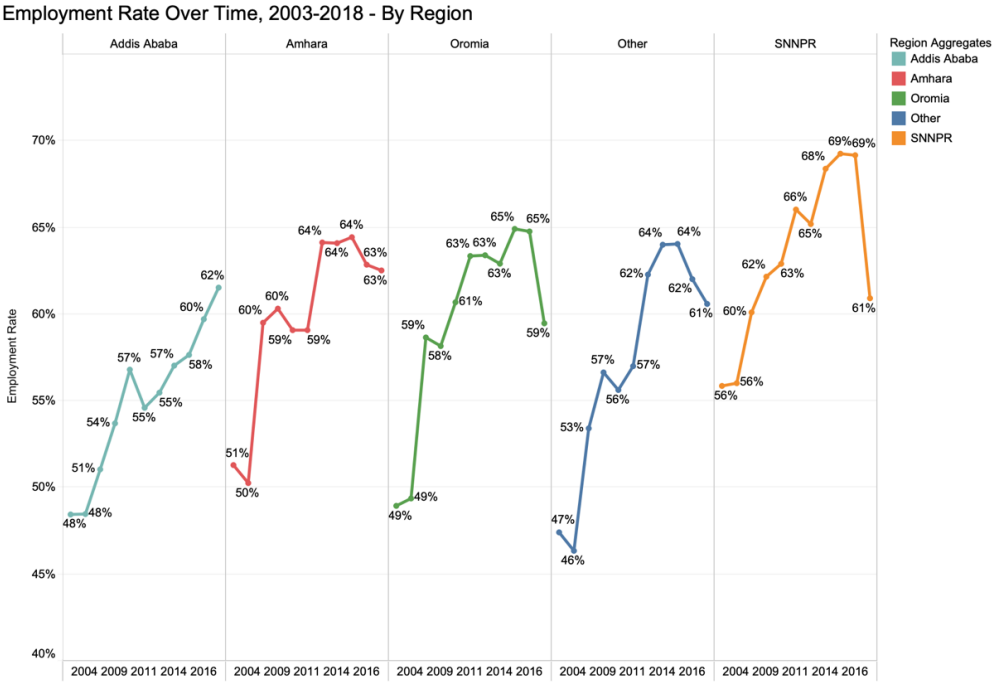
understand, since sustaining high growth remains critical for Ethiopia to continue to support higher living standards and expanded opportunity for its population of over 100 million people. One indication of the problem of slowing growth has also been a change in the direction of employment rates across the country (Figure 1.7). Across most regions, except for Addis Ababa, there has been a shift since about 2015 from continuously growing employment rates to a decline.

Figure 1.6: Period Annualized Real GDP Growth Rates



Source: World Bank WDI

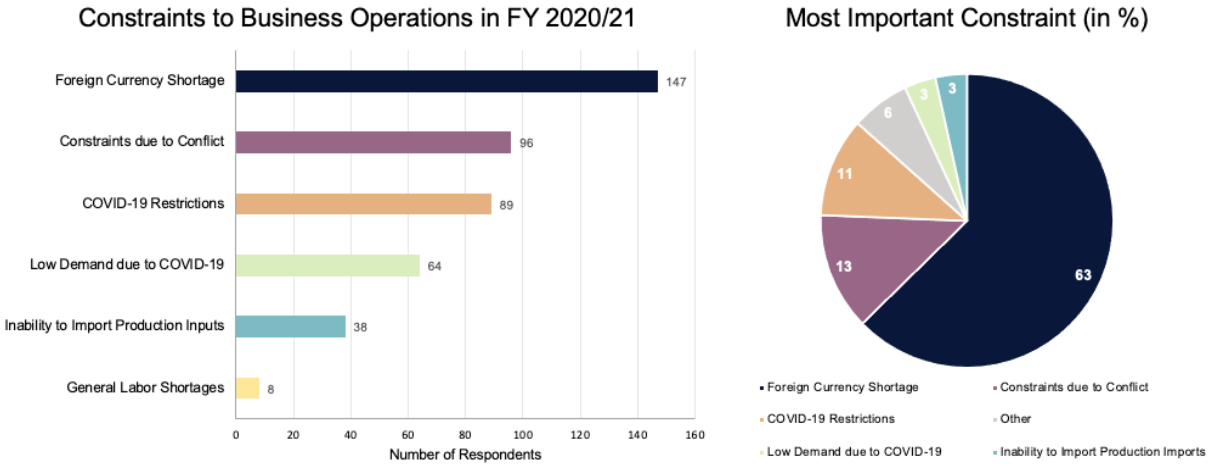
Figure 1.7: Period Annualized Real GDP Growth Rates



Source: Own analysis using Urban Employment and Unemployment Surveys

In 2020, when a large majority of national economies contracted, Ethiopia remained not only growing but among the world's fastest-growing economies, with growth registering 6.1%. However, in 2021, as most of the world's economies rebounded from 2020 contractions, Ethiopia's growth rate slowed further to 5.6% as the conflict intensified. A recent survey we conducted with the Ethiopian Economics Association of 200 companies — more specifically, companies with importing licenses, for reasons that will be revealed in the next chapter — provides some detail on what this slowdown looks like at the firm-level. Of the firms we interviewed in early 2022, nearly all firms reported operating at below their capacity over the previous year. Roughly 75% of firms were operating at half capacity or lower and 40% of firms were operating at below one-fifth of their capacity! When asked why, constraints due to the conflict and COVID-19 (both supply restrictions and lower demand due to the pandemic) were relevant, but by far the most prevalent and deepest constraint was access to foreign currency (Figure 1.8). This result is made more striking given that this response was not one that was provided from a list (as the others were) but volunteered as a constraint under "other" by almost three-quarters of firms and noted as the most important constraint for nearly two-thirds of firms.

Figure 1.8: Self-Reported Constraints by Firms Not Operating at Full Capacity



Note: "For Currency Shortage" was not a provided option. It was written under "other."
Source: Growth Lab/EEA Importer Survey, 2022

While it is easy to see the connection between the conflict and lower growth today, Ethiopia's growth challenges clearly run deeper and further back in time than the conflict itself. And not only has growth slowed noticeably, putting pressure on continued gains in poverty alleviation and other development outcomes, but Ethiopia's macroeconomic foundations have also been under increasing stress. Inflation has been accelerating rather consistently for several years and has been running at over 30% year-on-year since September 2021 and through to the time of writing in October 2022. This is a source of profound frustration for Ethiopian society as it erodes the value of savings. Meanwhile, access to foreign exchange has grown increasingly problematic for the private sector as well as for the government to supply necessities. One broader indication of this

than the survey results above is the black-market premium for foreign exchange in the country, which has also been high and accelerating over the years. This reflects an immense and growing challenge for the economy to import goods and services, including food, fuel, and fertilizers that society demands. Another indication of the problem is how the Government of Ethiopia requires banks to "surrender" an increasing share of their foreign exchange available to the National Bank of Ethiopia. At its heart, this shortage of foreign exchange is a result of an insufficient ability of the economy to produce enough exports and other sources of foreign exchange to satisfy demand, but the situation is made worse through the current mix of macroeconomic policies.

Government revenues (in real terms) have also failed to keep pace with expenditure growth, especially to support Ethiopia's large public investment push over the last decade under its two Growth and Transformation Plans. This has brought on increasing debt sustainability risks, particularly in relation to dollar-denominated debt, which has reduced options for the government to borrow from abroad to continue to finance its development. With a reduced ability to borrow from abroad, the government has had to rely increasingly on borrowing domestically, including through forced borrowing (systems known as "financial repression) and through expanding the money supply (a practice known as "seigniorage"). These macroeconomic challenges of inflation, foreign exchange scarcity, fiscal imbalances, and loose monetary policy are all deeply related to one another. In 2019, the government launched a new strategy — Homegrown Economic Reform Program — to try to address these interacting macroeconomic distortions and crowded in the support of the IMF in a novel program for the country. However, all indications are that macroeconomic challenges continue to intensify with the conflict and with slowing growth at the time of writing.

Achieving a sustained and shared growth acceleration will require not only a resolution to the conflict but also solutions to what caused development to slow over time. So, what is the cause of this growth slowdown? And what is the relationship between the growth problem and macroeconomic problems? What changes will be crucial to overcoming these problems, and can these changes be incorporated into Ethiopia's current economic reform strategies? What roles must be played by the government and private sector, and what help will Ethiopia need from the rest of the world to achieve another sustained growth acceleration that could support the improvement of living standards and strengthening of a robust, resilient, and vibrant Ethiopia? These are the questions that are tackled in this compendium.

Goals of This Research Compendium

The remainder of this compendium sets out to unpack the economic challenges that Ethiopia faces today in a practical way to inform a better path forward. In doing so, it aims to explain the driving forces behind the economic struggles that Ethiopians now face, how Ethiopia got to this point, and identify gaps and opportunities to build on Ethiopia's Homegrown Economic Reform Program. Additionally, in taking on the complex realities of this economy, the compendium also aims to

serve as an example of a research approach and set of tools that can be applied to any economy. Ethiopia is unique in many ways, but the same can be said about any developing economy and most advanced economies, for that matter too. Economic development, especially international development, has been far too dominated by a focus on "best practice" and one-size-fits-all solutions to complex realities of place-specific challenges. Likewise, development practice is too often dominated by Western institutions and industrialized nations dictating reform strategies. This compendium recognizes these realities and aims to elaborate an alternative of what external research help can look like in a developing country setting.

The research across the chapters of this compendium was developed during the Growth Lab's research project in Ethiopia over the period of 2019-2022, supported through a grant by the United States Agency of International Development (USAID). This research effort, which was at times conducted in close collaboration with government and non-government researchers in Ethiopia, applied diagnostic tools and economic complexity frameworks that the Growth Lab applies in many settings but tailored to the context and challenges of Ethiopia. Whenever possible, the Growth Lab's research team worked to co-create solutions and innovation with stakeholders in Ethiopia in response to the challenges and opportunities uncovered through the research.

Chapter 2 aims to explain Ethiopia's growth process over time and diagnose what is constraining better growth now, both in specific terms and as a larger syndrome that informs how COVID-19 and the conflict have intensified underlying constraints. This chapter applies the "Growth Diagnostic" framework that was initially conceived by Ricardo Hausmann, Dani Rodrik, and Andrés Velasco in 2007 and which is a central pillar that the Growth Lab uses in its work worldwide to ground its research support in the context-specific issues that matter most for inclusive and sustainable economic growth of a place. Following the findings of Chapter 2, the next two chapters dissect two layers of Ethiopia's fundamental growth challenge. Chapter 3 provides a macroeconomic diagnostic that seeks to explain key macroeconomic problems experienced in Ethiopia, the sources of these problems, and what the nature of interacting macroeconomic distortions means for policy moving forward. Chapter 4 explains Ethiopia's long-term challenge of economic diversification and explores potential pathways to accelerate export growth over time. This chapter utilizes economic complexity methodologies at both the national level and the subnational level and aims to provide useful inputs for strategy and policymaking to catalyze stronger export diversification, which will be essential to sustaining long-term growth. Finally, Chapter 5 summarizes Ethiopia's progress through its Homegrown Economic Reform Program in tackling fundamental growth and macroeconomic problems. This review of the program differentiates between issues where there are problems of implementing planned reforms versus problems in design where reforms are being implemented, but results on the economic system have not been what was desired. This second type of problem is more prevalent, and the chapter identifies several critical ways to build on the reform program to address these design challenges and achieve better results.

II. Growth Diagnostic

When the Growth Lab works on a country economy — or any economic system at any level — it is essential to start with an initial diagnosis of what holds back better economic growth outcomes in this specific context. We refer to this as a growth diagnostic, and we approach it much like a medical professional would approach a sick patient. Doctors, nurses, and paramedics use their knowledge of how the body works and how drugs work to diagnose and then treat individuals with specific ailments. The Growth Lab works to do the same with ailing economies, using knowledge of economics, public administration, and other fields to first diagnose economic systems and then work to find ways to help address the underlying problems.

"Better" growth outcomes do not necessarily just mean faster growth. Part of the diagnosis is first understanding what the growth problem even is. Is growth too low to support improving living standards over time? Is the growth process unsustainable? In what ways? Is the growth process non-inclusive? What groups of people are being left behind? Perhaps the growth problem encompasses all these issues? To arrive a clear statement of what the problem is requires developing a good understanding of the growth process of this economy — that is, what generates income in this place and who participates in the productive economy. Since the world is a dynamic place, it is usually important to understand in what ways this growth process has evolved over time. This often helps to frame a clear problem that matters in this society.

When the problem is clear, it becomes possible to test different hypotheses on what causes this problem through applying a set of diagnostic tests. We do this by drawing upon a variety of different data sources and qualitative information. We are in search of what constraint or mix of constraints is binding on the economic system. In other words, what constraint — if lifted — would allow for an immediate improvement of growth (until the next constraint binds). Once the binding constraint appears to be clear, we can then explore why this constraint persists — why hasn't it been addressed by markets or government actions to date? A diagnostic will often arrive at a "growth syndrome" that not only identifies the proximate causes of a growth problem, but also the larger systemic forces that have caused it to persist or to re-emerge over time.

A good diagnostic is essential to effective growth strategy. This might sound straightforward and obvious, but this differs substantially from development practice in many settings, where there is a focus on "best practices" and generalizable solutions. A doctor would not treat a sick patient with best practices alone. While a healthy diet, exercise, and sleep might be good for most everyone, they will not cure a patient with cancer or a person with a traumatic injury. In some circumstances, best practice might even make matters worse. A doctor would not prescribe exercise to someone in need of emergency surgery. Yet, without a sound diagnostic, a government, donor agency, or other development entity can easily make such an error in its attempts to improve growth outcomes and wellbeing in different contexts. What follows is our growth diagnostic for Ethiopia.

The Current State of Growth in Ethiopia

When first looking at the official growth rate of the Ethiopian economy — above 5% in 2021 — one may assume that this country does not have much of a growth problem. Many countries are suffering prolonged periods of much lower growth, with even that interrupted by the COVID-19 pandemic, while other countries are battling recessions and outright economic collapse. Yet, at Ethiopia's level income, 5 or 6% growth is simply not fast enough. At this rate it would take upwards of six decades for income levels to converge with a country with a per capita income of $5,000 today (like South Africa) if that country grew at 3% on average, or around 120 years to converge with the United States in income per capita if the U.S. were to grow at 2% on average!

As discussed in the introduction, Ethiopia has experienced exceptional growth overall during last two decades, but the process of growth is under significant strain. This strain had set in before the COVID-19 pandemic and the current conflict facing the nation as of 2022, but these shocks are exacerbating a slowdown in growth and intensifying macroeconomic problems of inflation, foreign currency shortages, and debt sustainability risk. This deceleration of growth puts continued gains in living standards and the hope that each generation will have more opportunity than the last at risk. Ethiopian society had grown used to the benefits of rapid growth, though this growth had also come with a rapidly changing society. The collapse of this growth has put additional pressure on a society that looks very different than it did 20 or 30 years ago.

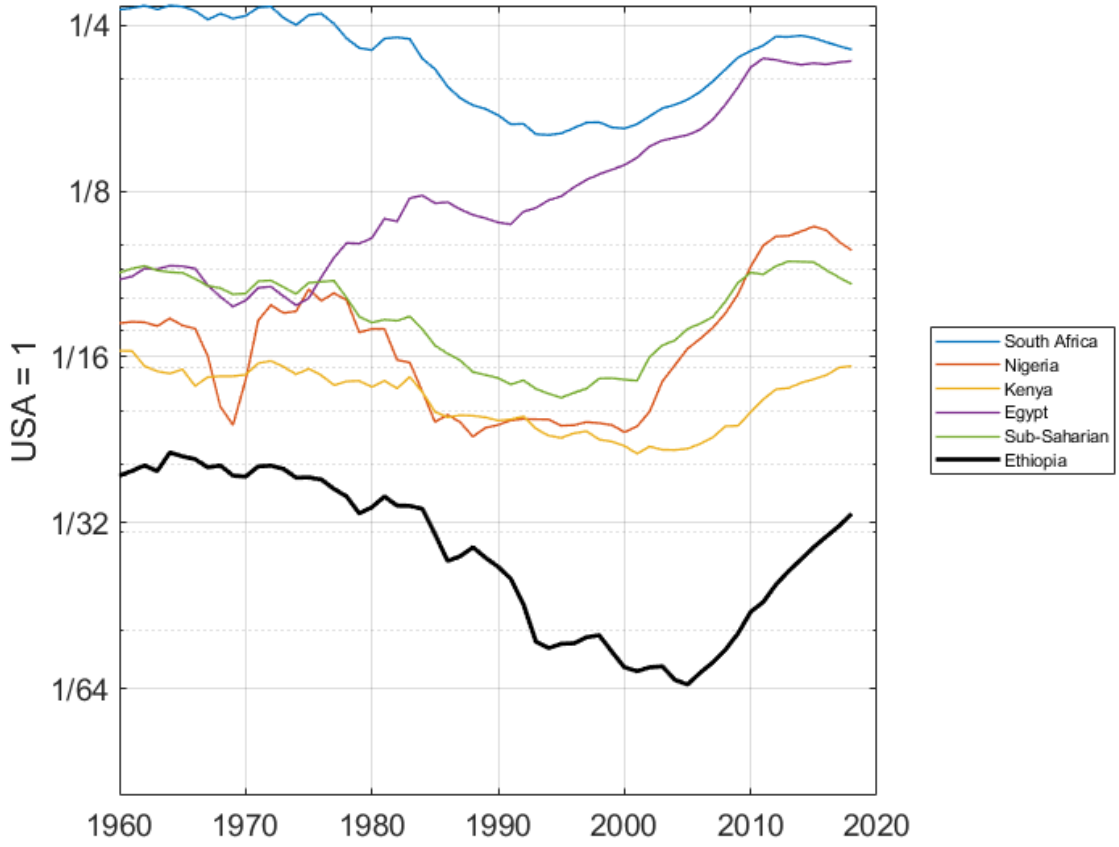
The growth problem in Ethiopia is one of slowing growth, but since when exactly? What changed that can explain the steady slowdown in growth more recently? This diagnostic chapter starts by exploring Ethiopia's growth acceleration in the early 2000s to understand what was driving sustained and rapid growth. This then allows us to then trace how and why the growth process changed over time, and to pinpoint when the growth problem first emerged. From there, we apply diagnostic tests to identify the binding constraint to growth and work to understand this constraint within a larger growth syndrome that can guide effective actions to reverse the problem.

Understanding Ethiopia's Growth Acceleration

Ethiopia's growth acceleration took hold in 2004 (see Figure 1.4). This represented a distinct break from a growth pattern defined by its volatility, going back to at least the 1980s, to a pattern of sustained, high rates of economic growth. Another way to contextualize Ethiopia's growth acceleration is to compare per capita income levels in Ethiopia and other African economies with that of the United States (Figure 2.1). The United States is used as a good representation of developed economies overall, which tend to grow more slowly but more consistently than developing economies, historically at around 2% per year. The first thing to note from this figure is that even after a decade-and-a-half of sustained, high growth, per capita income in Ethiopia remains a tiny fraction of the U.S. per capita income level (about 1/32nd). Ethiopia's GDP per capita also remains lower as a share of the U.S. level than it was prior to the Derg regime, showing

the massive amount of damage that was done at the time as Ethiopian income levels stagnated while the U.S. and most of the rest of the world grew.

Figure 2.1: GDP Per Capita as a Share of the U.S. Level – Ethiopia and African Comparators



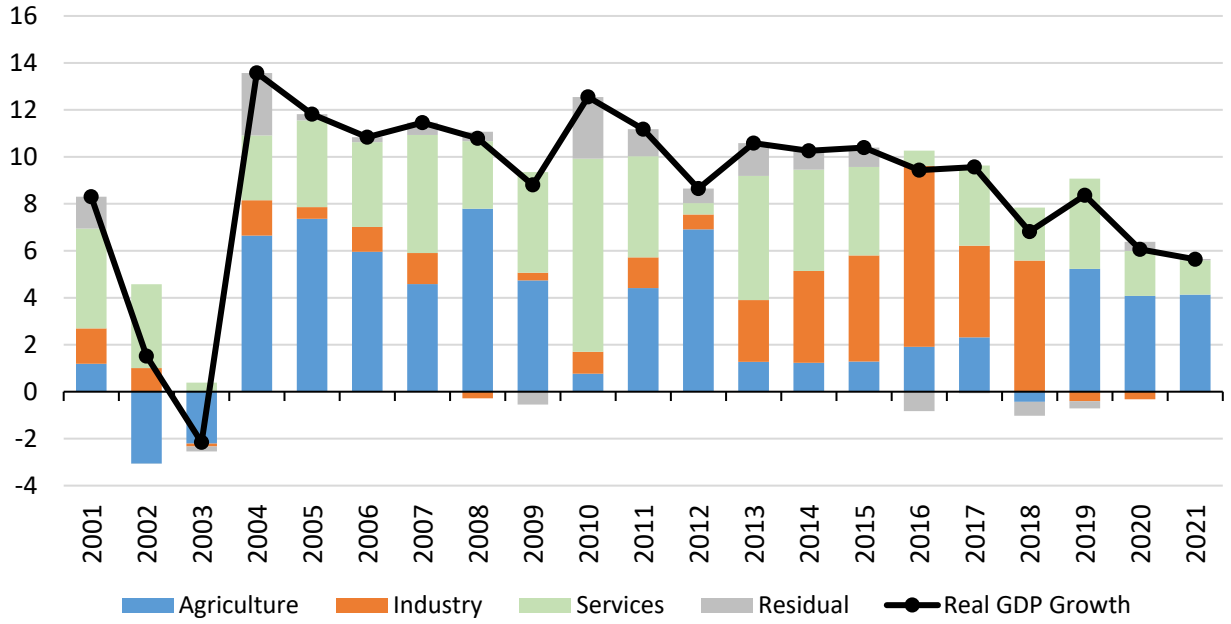
Source: Maddison Project Database

As of the arrival of COVID-19 in 2020, Ethiopia remained poorer than Sub-Saharan Africa on average and the large African economies shown on the graph, but it was on a strong converging path. Sub-Saharan Africa, on average, has not converged toward U.S. income levels over the long term. Nor have the African economies shown in the figure, except for Egypt. Many African economies, like Ethiopia, grew faster than the U.S. economy over 2000-2013, at a time when global commodity prices were generally rising, but noticeably slower over the second half of the last decade. Ethiopia and neighboring Kenya have followed a noteworthy path of continued convergence throughout the 2010s, setting them apart from this general trend. Compared to Kenya, though, Ethiopia's economic decline starting in the 1970s and rise since the early 2000s have been much sharper, especially noting the units on the y-axis on this figure. In this sense, Ethiopia's growth acceleration was truly exceptional. However, another way of looking at this growth is to

interpret it as a recovery over the long term from Ethiopia's exceptionally poor growth during the Derg regime (1975-1987) and a sharp collapse immediately thereafter.

Whether exceptional or just an exceptional recovery, what caused this acceleration? A few descriptive breakdowns of the composition of GDP provide a helpful starting point. Figure 2.2 provides a decomposition of GDP growth by the broad sectors of agriculture, industry, and services (as well as a residual that appears when using available data). The years shown prior to 2004 capture the problem of an economy that is dependent on traditional agriculture. During those years, shocks to crop production — due to weather, disease, pests, or other causes — had enormous impacts overall growth. The first few years from 2004 onward show a pattern of agriculture-led growth with significant contributions from services as well. Over time, this begins to change with agriculture's contributions falling (though remaining positive) and service's contribution growing. In later years, we see a much larger contribution from industry to growth. Later in this chapter, we will see that this industry composition is overwhelmingly due to the construction sector. Finally, after 2018, we see this industry contribution disappear and agriculture's contribution grow again.

Figure 2.2: Sector Contribution to Real GDP Growth



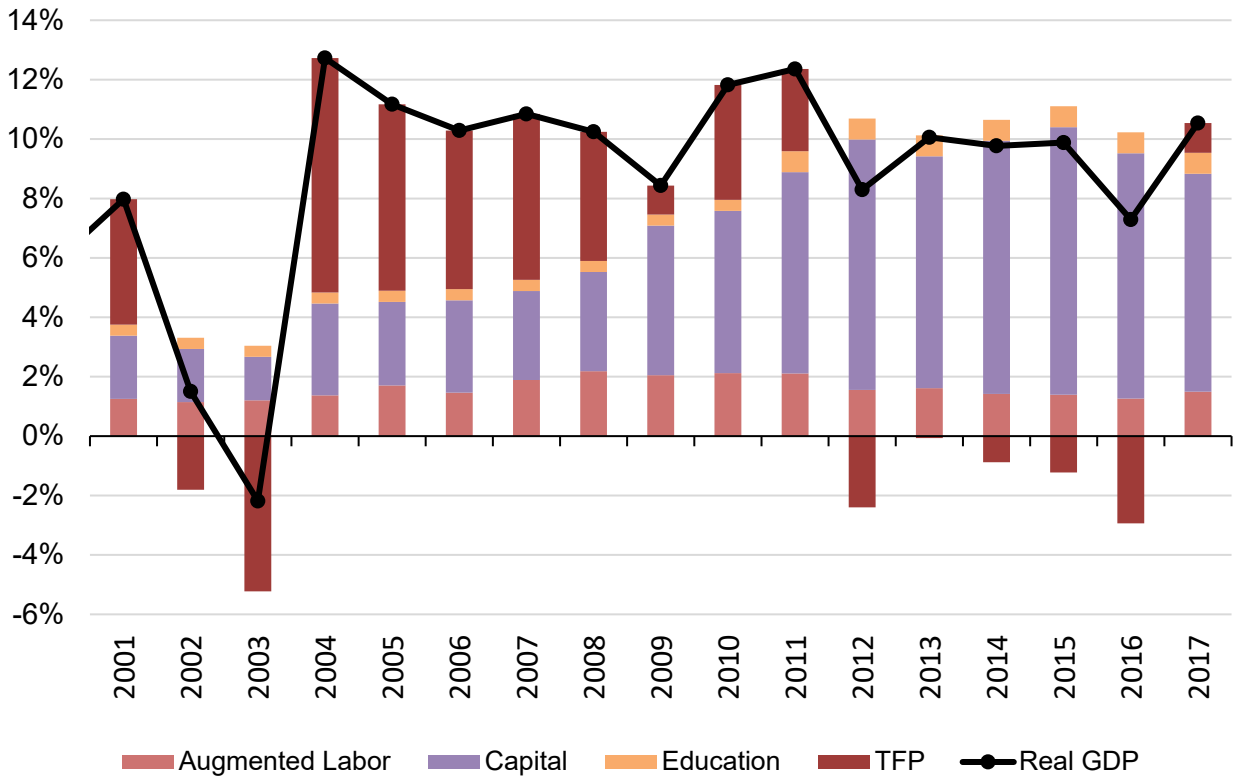
Source: World Bank WDI

Based on this graph, high growth from 2004 through 2010 must have causes that trace to both agriculture and service growth. The significant push in agriculture growth was more than just a rebound from a bad year 2003. Rather, there are several years of sustained output growth. Moreover, agriculture continued to grow every year after 2004, meaning that weather related shocks — of which there continued to be many — never resulted in an overall contraction in the value of agricultural output. Meanwhile, robust growth in the service sector allows growth to

remain high even when agriculture growth is lower. As of 2008-2010, the service sector was driving overall growth. This simple breakdown immediately points to the need to understand what was driving agriculture and services growth.

For another initial indication of the source(s) of growth, Figure 2.3 provides a growth accounting decomposition of Ethiopia's growth. Both the volatility prior to 2004 and the sustained growth in the years following trace primarily to changes in total factor productivity (TFP). This is the component of the accounting exercise that captures everything that is not explained by capital accumulation, more workers, and general improvements in education of those workers. There is a clear evolution in this decomposition from an initial period of growth during roughly 2003-2007 where TFP increases drove growth and capital accumulation played a supporting role, to an increasing and then completely dominant role of capital accumulation thereafter. This breakdown points to TFP providing an initial spark to the growth acceleration but not explaining the full period of sustained growth. So, what drove this increase in productivity, particularly in agriculture at the start? And why did this end and give way to capital accumulation, especially in industry?

Figure 2.3: Growth Decomposition by Factors of Production



Source: Own calculations using Penn World Tables (labor coefficient set equal to 0.5)

The agriculture-led nature of the acceleration has been well-studied (Bachewe et al., 2018; Iimi et al., 2018; Fried and Lagakos, 2017; Krishnan and Patnam, 2013; Minten et al., 2013; Spielman et

al., 2012; Dercon et al., 2009). These studies find that agriculture growth during this period where TFP was growing traces primarily to three causes that together allowed for increases in both the productivity of traditional agricultural crops and the extent of land use. These were: (1) rapid expansion of the road network; (2) a major push to make modern seeds and fertilizers available to farmers through centralized (public) supply and a network of cooperatives for distribution; and (3) a very large program of extension services to farmers. It was the combination of these factors that allowed for dramatically increased agricultural productivity and production. Whereas any one of these causes in isolation would have been helpful, without the other two factors the benefits would have been sharply constrained.

Road networks increased farmers access to markets and allowed for the expansion of production into new areas. This increased production and gave farmers more options to sell to markets where prices were higher. This was likely the most central improvement, but it alone did not increase productivity. Improved inputs of seeds and fertilizers allowed for higher yields, but only in combination with extension services that provided farmers with the knowhow to utilize these inputs. In the absence of the road expansions, improvements in inputs and the support to use these inputs would have increased productivity but may have only driven down the prices that many farmers received for their goods in local markets as supply increased. Thankfully, the combination of these efforts paid off. It ultimately increased farmers' income and purchasing power, which increased demand for other goods and services in the economy. As farmers gained income, this allowed for a continued increase in household consumption levels as a share of GDP from an average of 64% in 2000-2004 up to over 75% between 2007-2010 (World Bank).

The Government of Ethiopia's overarching Agriculture Development-Led Industrialization (ALDI) strategy of the 2000s certainly worked as intended on its first step of increasing agricultural output and farmer incomes — though we will explore the "industrialization" part soon. This coordinated push was not cheap. The Government of Ethiopia's investments in roads eventually *quadrupled* road length between 2000 and 2017 (NBE). GOE spending on roads alone was substantial, amounting to 3.5% of GDP on average over 2007-2014 (World Bank, "Ethiopia Public Expenditure Review," April 2016). Spending on agriculture and water amounted to roughly 3% of GDP over the same period. The GOE was also making significant investments in education and health systems at the time of the growth acceleration. Public spending averaged 4% of GDP on education and over 1% of GDP on health, with spending in each category split roughly equally between current expenditures (to run the education and health systems) and capital expenditures (to expand the systems). Capital expenditures on education included a 15-fold increase in the number of universities.

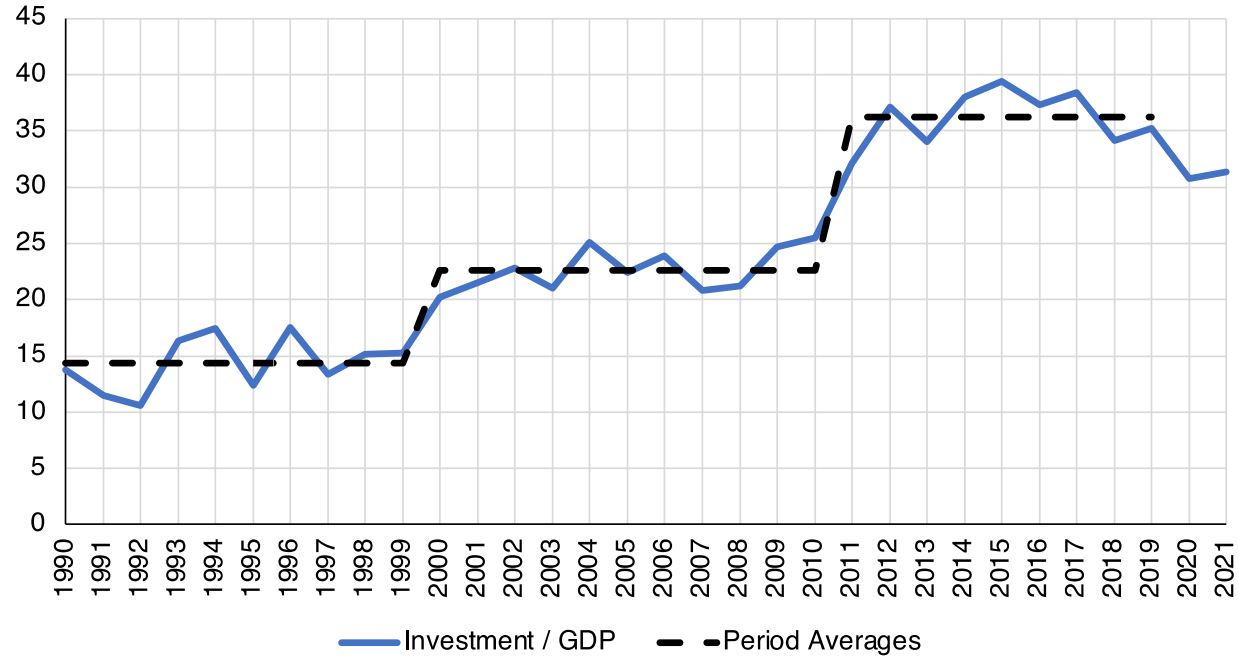
This spending required fiscal resources — i.e., money for the government to spend — and a few things came together to provide the necessary fiscal space for these government expenditures. First, the GOE had been paying for a war with Eritrea, with fighting focused in 1998-2000. With the end of active fighting, Ethiopia was able to increase its capital expenditure (from around 5%

of GDP to 10% of GDP) over 2000 through 2004 without increasing its overall spending. In other words, the money no longer needed for the war effort amounted to a large push in public investment. As the GOE reduced on-budget expenditure as a share of GDP after 2004, it also did so by reducing current expenditure while it maintained this higher level of capital expenditure. Second, Ethiopia benefited greatly from an international debt relief program through the Heavily Indebted Poor Countries (HIPC) Initiative. This supported a dramatic fall in external debt as a share of gross national income from 85% of GNI in 2003 (and a previous peak of over 140% of GNI in the mid-1990s) to under 15% of GNI in 2006. This created new space for Ethiopia to borrow from abroad. Finally, Ethiopia enjoyed a resurgence in overseas development assistance through grants and concessional loans, which spiked from 8% of GDP in 2000 to 18-19% of GDP in 2003 and 2004.

The Government of Ethiopia was able to take these gains from the end of war spending, debt forgiveness, and increased aid and put them to productive purposes and achieve what could be thought of a sustainable "peace dividend". Debt forgiveness and grants freed Ethiopia from the constraint of its own paltry national savings and small tax base, allowing it to invest more in the coordinated push toward agriculture-led growth. Investment rose throughout the period of 2000 to 2003 from an average of 15% of GDP over 1991-1999 to an average rate of around 23% of GDP over 2000-2010 (Figure 2.4). To achieve this eight percentage-point of GDP increase, Ethiopia had to spend beyond its means. While this figure includes investment by both the public and private sectors, we know that a large share of investment was delivered through the public sector. However, even with the increased grants, Ethiopia's total revenues did not match its spending, such that Ethiopia borrowed from abroad to cover the difference. Thanks to the debt forgiveness, Ethiopia was able to do so without running into immediate debt sustainability concerns from lenders, largely at concessional rates. As shown in the figure, this rate of investment would increase substantially again in the next decade.

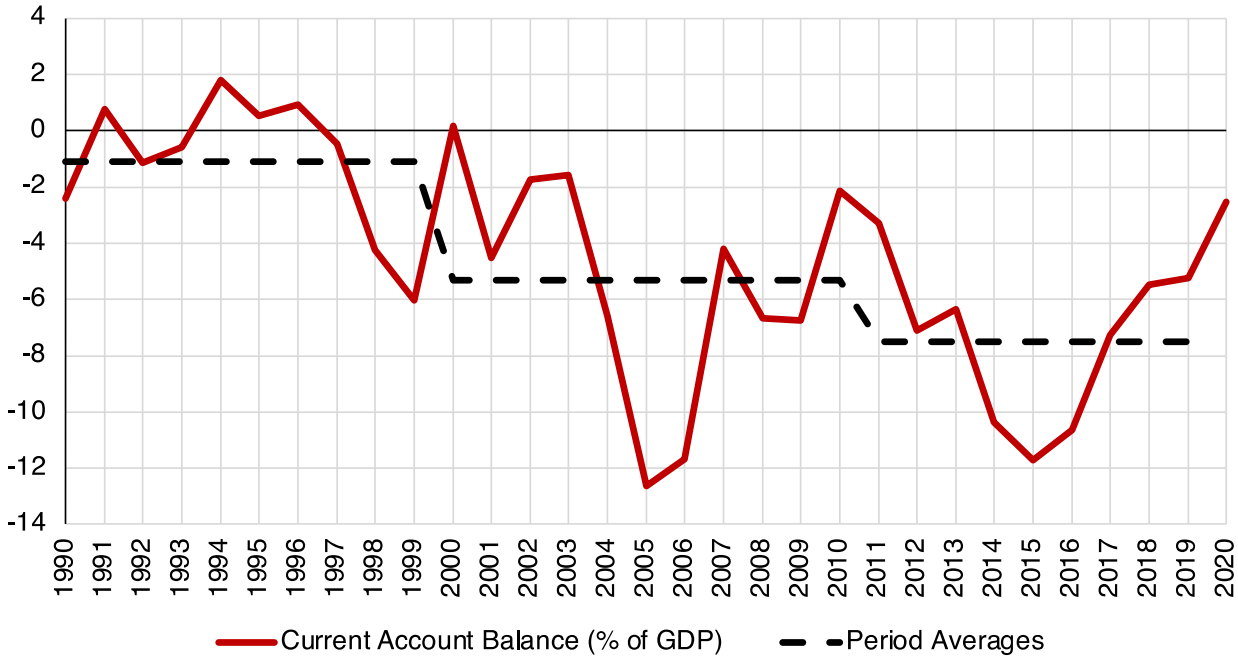
With the level of investment well above the level of national savings, Ethiopia had a large current account deficit in the first years of the growth acceleration. The deficit has tended to widen as investment has increased. It reached a peak of 13% of GDP in 2005 and then widened again to 12% in 2015. The current account, by definition, represents the difference between national savings and national investment. It is measured by estimating the difference between what the Ethiopian economy sells, transfers to, and earns from the rest of the world versus what the rest of the world sells, transfers to, and earns from Ethiopia. This estimation makes precise valuations difficult, but Ethiopia's current account deficit was large at the time. When there is a current account deficit, it means that this gap must be financed through some form of borrowing or equity, either by the private sector, the public sector, or both. In this case, the gap was filled by borrowing by the public sector. When breaking down the current account deficit by its component parts, Ethiopia's deficit is driven primarily by its trade deficit. This reflects another reality of the process of the growth acceleration — that it required a large growth in imports that was not matched by as a large a growth in exports.

Figure 2.4: Investment as a % of GDP



Source: IMF World Economic Outlook

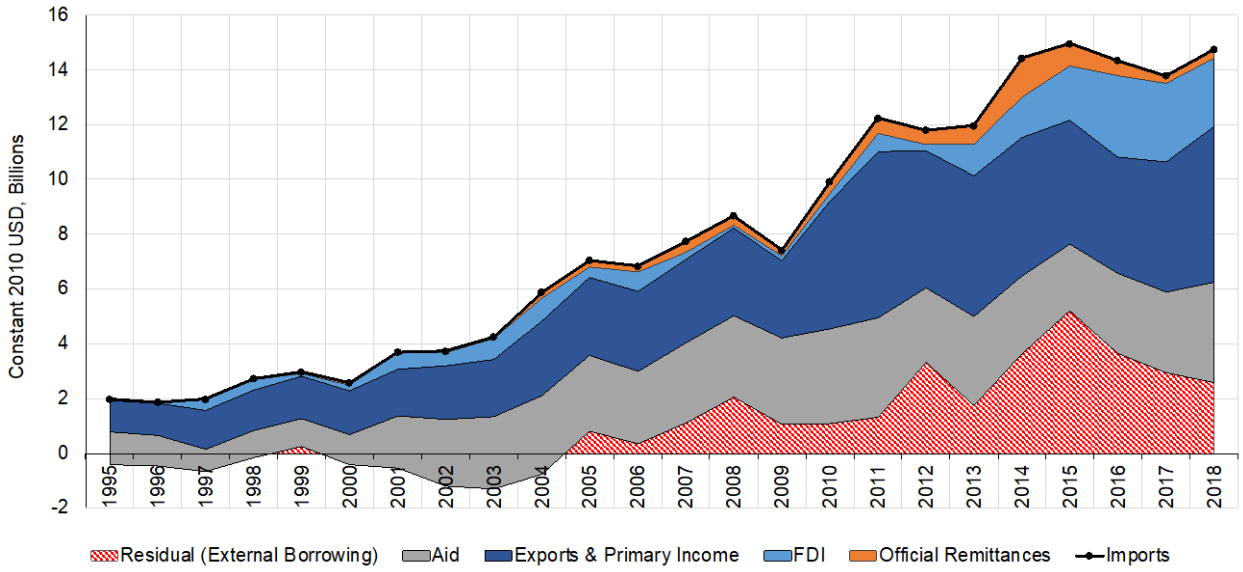
Figure 2.5: Current Account Balance as % of GDP



Source: World Bank WDI

As Ethiopia grew rapidly, imports included construction equipment, metals, and fertilizers, among other things. In total, imports grew sharply from roughly $4 billion (as measured constant 2010 USD) in 2003 to roughly $7 billion in 2005. This was an enormous expansion in imports (almost 15% of GDP) over a very short time, which could have been impossible if not for the expansions in aid and the ability of the government to borrow from abroad in foreign-currency denominated loans at this time. As shown in Figure 2.6, the Ethiopian economy simply did not generate enough foreign exchange to make international payments for this scale of imports.

Figure 2.6: Total Imports (in Constant USD) Decomposed by Source of Foreign Exchange



Source: World Bank WDI

In 2003, exports and other primary income from abroad would have covered only around half of the import bill ($2 billion out of $4 billion). By this time, however, foreign aid provided more than enough foreign exchange to cover the rest of the import bill. But by 2005, this was no longer true. Ethiopia required borrowing from abroad not only to finance its investment, but also as a critical source of foreign exchange to facilitate import payments. Ethiopia would not have had this need if it had a large stockpile of foreign currency reserves to draw down, but Ethiopia has never had such a stockpile. The number of months of imports that could be paid by a country's foreign exchange reserves is a commonly used check on a country's foreign exchange vulnerability. Reserves amounted to just 2.5 months of imports in 2005, a very low level by debt sustainability standards, and fell further in subsequent years. As shown in the figure, this need intensified in terms of the dollars needed from external borrowing to supply enough foreign currency to match import demand. By 2015, imports had grown to nearly $15 billion (in constant 2010-dollar value), but exports, aid, FDI, and official remittances only provided about 2/3 of the foreign currency needed to facilitate those import purchases. The rest relied on the foreign currency in circulation thanks to government borrowing from abroad.

The investment-heavy and import-dependent growth acceleration had a relatively short-lived period of being agriculture-led. Although Ethiopia has seen continued gains in agricultural productivity in terms of yields of major commodities, these annual gains are small in comparison to the push achieved in the couple of years after 2004. Ethiopia quickly reached diminishing marginal returns to production growth in traditional crops through its coordinated ADLI push, and agriculture growth after the initial gains increasingly requires innovation and coordination of inputs and knowhow for a larger diversity of agricultural products. This is harder — particularly harder to scale — through public systems, which are better at providing a few key inputs and basic extension services for traditional crops than they are for a diversified agricultural economy. Innovations are continuing nevertheless, particularly through Ethiopia's Agriculture Transformation Agency (ATA), but the growth decompositions earlier show that these innovations are not currently driving overall growth. Many constraints continue to affect Ethiopia's farmers, including climate change impacts on rainfall and limitations to horizontal and vertical coordination that leave farmers to face many quality hurdles. Recent research has shown that easier coordination of land markets through land rentals could have large production gains (Chen et al., 2022).

2008 as a Turning Point in the Growth Process

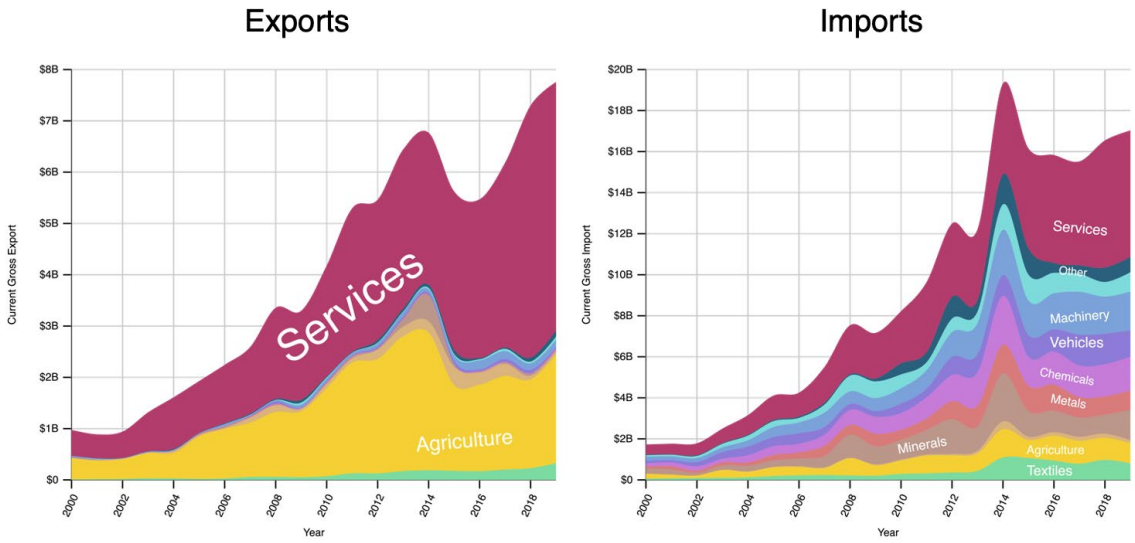
The period where the growth process could be seen as directly driven by agriculture was over by 2008, but growth continued to be high. The "I" in ADLI is for "industrialization". This is where reality did not play out in line with the strategy. Although new fiscal space and new foreign exchange availability were translated into agricultural development, and this raised the purchasing power of farmers, this did not lead to substantial industrialization. Manufacturing value addition instead fell steadily as a share of the economy from almost 6% of GDP in 2003 down to 4% in 2008 and continued to fall until 2012. After rising thereafter — for reasons discussed later in this chapter — this figure remained lower in 2019 and 2020 than it was in 2003. Industry overall (which includes manufacturing as well as utilities and construction) did gain employment as a share of total jobs, but only from about 7% of jobs in 2004 to about 9% of jobs by 2019 (World Bank). Agriculture employment remains the norm in Ethiopia. It made up an estimated 78% of jobs in 2004 and still represented 67% of jobs in 2019. Services, of course, represented the larger source of employment growth that makes up the difference — 24% of jobs in 2019, up from 15% in 2004.

It is important to draw a contrast here to long-term growth accelerations seen in East Asia as Ethiopia's structural change has shown key differences. In many other sustained growth episodes, labor has moved out of agriculture as the sector becomes more productive — including through labor-saving technologies — and into manufacturing and services where technological transformation is also under way and where productivity is also expanding at higher wages. In Ethiopia, however, as labor has moved out of agriculture, this has tended to coincide with declining labor productivity in "modern" sectors of the economy, like manufacturing (Diao et al., 2021; Diao et al., 2019; McMillan and Rodrik, 2011). The consequence of this pattern has been downward wage pressures in what are generally the most productive sectors of the economy. In Ethiopia, in

addition to increased incomes of famers leading to increased demand for locally produced goods and services, public investment also incentivized growth in non-tradable sectors, including construction and utilities (directly) and wholesale and retail services (indirectly). Importantly, none of these sectors generate foreign exchange, but they do demand imports.

Higher levels of consumption increased demand for manufactured products, but this alone did suddenly lead to more diverse, more productive, or complex manufacturing production in Ethiopia. Still, this did not entirely necessarily undermine the growth acceleration. Exports, which needed to grow to support the growth of imports, did grow quite impressively — from $1.3 billion in 2003 to $3.4 billion in 2008 (Figure 2.7). Exports per capita also more than doubled over this five-year period from around $18 per person to around $40 per person. This was due to a few of main drivers — within agriculture (coffee, sesame starting in 2004; legumes starting in 2005; cut flowers and vegetables emerging in 2006) and transport services (which started to grow in 2002).[2] Each of these sources of exports has its own story, many of which will be discussed in Chapter 4. While this growth was impressive, the low levels capture an essential problem. Exports of $40 per capita do not support a great deal of imports. Over the same period of 2003-2008, imports per capita rose from $35 per person to $90 per person. This underscores why foreign aid and foreign borrowing were so critical to supporting import growth and hence the overall growth process of the Ethiopian economy.

Figure 2.7: Exports and Imports Over Time by Category



Source: Atlas of Economic Complexity

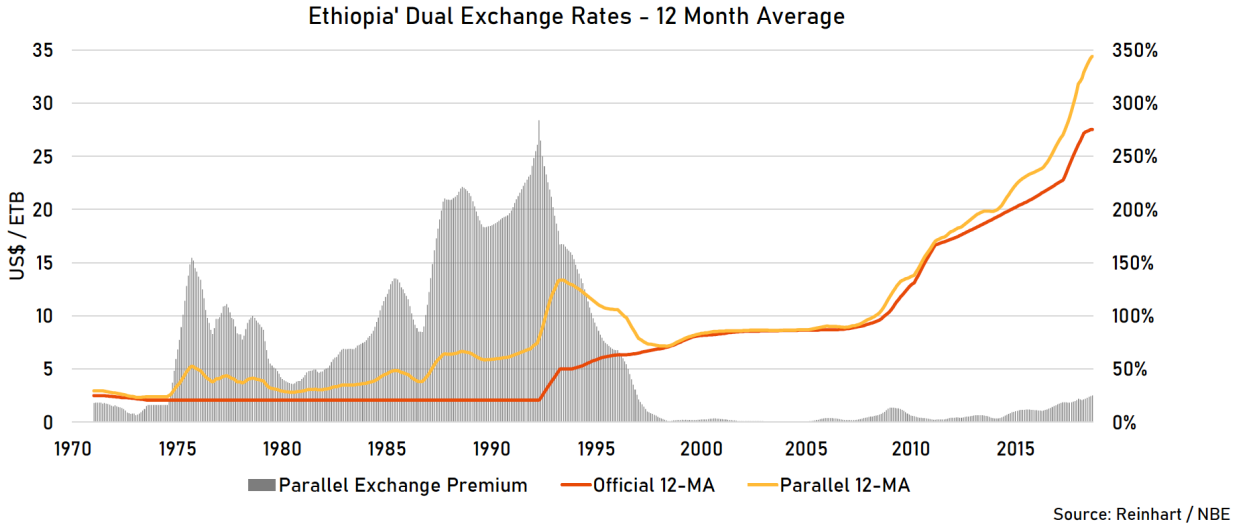
The year 2008 was a momentous year for the global economy. Global food prices rose rapidly, starting in 2007 and into 2008. The price of oil globally, which had been rising for several years, also spiked sharply in the first half of 2008 to reach over $140/barrel in June, the highest price ever

[2] These patterns can be explored in high detail using the Atlas of Economic Complexity (atlas.cid.harvard.edu)

recorded. This affected developing countries around the world and Ethiopia was no exception. Inflation in Ethiopia peaked at over 60% at one point in the year, and came in at 44% overall for the year, with widespread increases in food prices, regardless of whether these products were imported. Later in 2008, the Global Financial Crisis (GFC) hit, affecting developed countries especially hard. This caused global trade to contract sharply in 2009, and the pace of growth in global trade has never returned to what it was prior to 2008.

By global standards, Ethiopia was barely touched by the GFC. Growth remained exceptionally high. Exports and imports contracted for one year in 2009 and then continued to grow rapidly (see Figure 2.7). There was no recession, let alone the prolonged and evolving type of recession seen in Europe. Nevertheless, this represented a turning point in the growth process. By this time, it was clear that industrialization was not taking hold, at least not at the scale envisioned and experienced in East Asia. It was also clear that export growth based on a handful of agricultural products and noteworthy success of Ethiopian Airlines could not sustain imports and import growth for very long. In 2008, total reserves fell to just one month of imports. A black market for foreign currency re-emerged within Ethiopia that had had been more-or-less eliminated for the previous 10 years, but which had been a staple of the Ethiopian economy for decades before (Figure 2.8). It was clear to policymakers at this time that something would have to change if this exceptional pace of growth was going to continue.

Figure 2.8: Long-Term History of Ethiopia's Dual Exchange Rates



Source: Reinhart / NBE

Ethiopia began to dramatically increase its level of public investment, from about 20% of GDP in 2008 to about 35% in 2012, a level that was sustained for the rest of the decade. This was the genesis of a major push in public investment that became a key feature of Ethiopia's first Growth and Transformation Plan (GTP I), which was launched in 2010 and guided overall growth and

development strategy for the period 2010-2015. This five-year plan was an explicit attempt to jumpstart industrialization and transformation of the economic structure of the country. It aimed to do so through large-scale public investment in electricity generation (including through several very large hydropower projects, including the Grand Renaissance Dam), a rail network spanning most of the country and a light rail system in Addis Ababa, the construction of more than 20 industrial parks across the country, and dramatic expansion of sugar production through the development of more than 10 factories and surrounding plantation areas — among other things.

Most of these initiatives were organized through the expansion of state-owned enterprises (SOEs), including Ethiopian Electric Power (EEP), Ethiopian Railway Corporation (ERC), Industrial Parks Development Corporation (IPDC), and Ethiopian Sugar Corporation (ESC). Building all this infrastructure depended also on substantial inputs and services from other SOEs like the Ethiopian Metals and Engineering Corporation (METEC) and the Ethiopian Logistics and Shipping Enterprise (ELSE). Many of these SOEs were very large and undertook macroeconomically significant loans, which were backed by the Government of Ethiopia. However, the institutional structure governing public enterprises did not allow the Ministry of Finance complete ability to review and approve of these borrowing decisions, leading to significant contingent liabilities for the government.

In an important sense, this GTP I infrastructure push aimed to duplicate the success of the earlier coordinated push in basic agriculture but at a larger and more diverse scale. The logic included the realization that globally competitive manufacturing would need better reliable and sufficient electricity, affordable access to ports, and a variety of other things that could be provided in dedicated industrial parks. Just as with agriculture, one of these factors alone would not necessarily allow for much growth without the others. The infrastructure focus (akin to “the roads”) was clear here, but the necessary inputs (“the seeds and fertilizers”) and the knowhow (“the extension services”) of this new push toward transformation were not as clearly manifested in the strategy. It was clear that foreign direct investment (FDI) — i.e., companies from abroad investing in operations in Ethiopia — would be important. Ethiopia needed to begin to produce goods and services that no companies produced in Ethiopia yet, or at least not in a globally competitive manner. Yet, Ethiopia had several restrictions on foreign ownership, including in the financial sector, logistics, and in telecommunications. It was also clear that manufacturers would need certain inputs. A clear hope of GTP I was that the arrival of foreign manufacturing companies would create demand for local production of inputs — for example, local cotton and local leather for textiles and garment manufacturing. The public sector, meanwhile, remained very present in logistics and administering price controls and public distribution systems.

GTP I structured many ambitious targets, a few of which were reached and many of which came close. The plan targeted a reduction in the national poverty headcount rate from a benchmark of 29.2% in 2009/10 to 22.5% by 2014/15. According to progress reported with the launch of GTP II, Ethiopia achieved a poverty headcount of 23.4% by that year. Likewise, the plan targeted an

increase in primary education coverage from 83% to 100% and reached 97%. It also targeted an increase in higher education enrollment from about 207,000 people to 468,000 people and reached 419,000. Some health system improvements were also impressive. Primary health coverage was targeted to increase from 89% to 100% and reached 98%. Under-five mortality was reduced by even more than what was targeted to reach 64 deaths per 1,000 children, down from 101 deaths per 1,000 in 2009/10. However, progress toward other ambitious targets was more limited. Maternal mortality was targeted to decrease from 590 deaths per 100,000 live births to 267, and instead was reduced to just 420. Lower secondary education coverage was targeted to increase from 39.7% to 62.0% but increased only slightly to 40.5%.

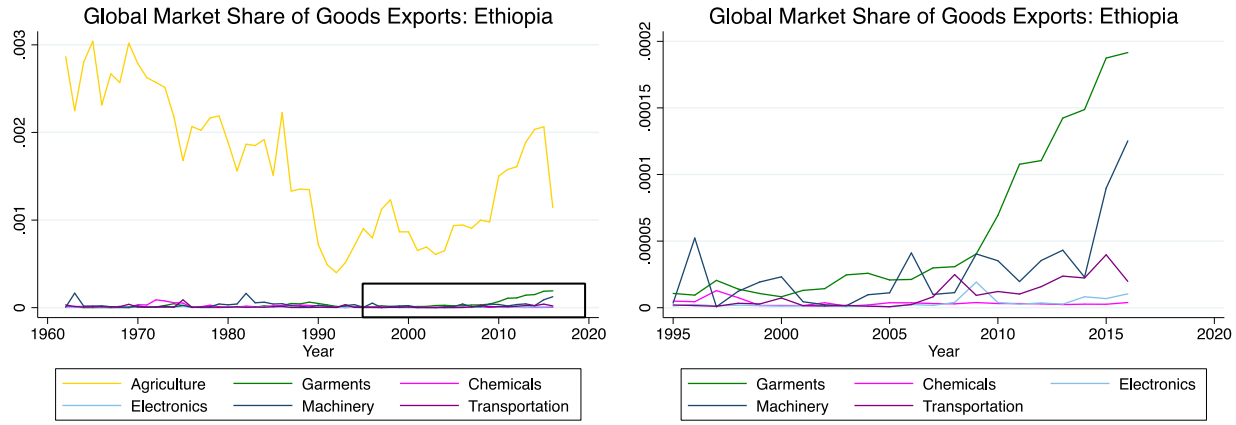
The same differences can be seen in varied success against infrastructure targets. The road network was targeted to expand from 48,800 km to 64,500 km and came very close at 63,600 km. Mobile phone subscriptions increased rapidly from 6.7 million to 38.8 million, nearly reaching a target of 40 million, and the share of the rural population within 5 km of a tower increased from 62% to 97%, versus a goal of 100%. Electricity transmission expansion also nearly reached the target, extending from 11,440 km to 16,018 km versus a target of 17,000 km. Electricity generation, on the other hand, expanded much more slowly than what was targeted. GTP I envisioned a quadrupling of generation capacity from 2,000 MW to 8,000 MW but actually reached 4,180 MW by 2014/15. National potable water coverage also fell short as it expanded from 68.5% to 84% (82% rural and 91% urban) versus a goal of 98.5%. Railway expansion lagged significantly versus initial goals due to financing constraints, which forced priority to be given to just two projects — the Addis Ababa-Djibouti railway and the Addis Ababa City Light Rail Transit project.

But the largest miscalibration between targets and reality was in the macroeconomic targets. As opposed to the social and infrastructure targets, where setting very ambitious goals and getting part way is not necessarily a bad thing, falling short on certain macroeconomic targets can undermine the balance of the whole economic system. Gross domestic savings increased from 9.5 percent of GDP to 21.8 percent of GDP, which was above target of 15.0 percent of GDP. However, investment increased by more than target too, from 22.3 to 39.3 percent of GDP, whereas the target was only 28.2 percent of GDP. The largest deviations were in the value of trade. Total exports were targeted to increase from 13.6 percent of GDP in 20019/20 to 22.5 percent of GDP in 2014/15. In fact, exports lost ground here as they declined to 9.7 percent of GDP. Total imports were targeted to grow slightly as a share of GDP from 33.0 to 35.7 but instead also fell to 27.1 percent of GDP.

Although exports and the pace of transformation were well below the targets of GTP I, export growth was still impressive, just much slower than the pace of economic expansion overall. Throughout the first decade of the 2000s, Ethiopia had benefited from a continuously improving terms of trade — i.e., global prices of what it exports in comparison to what it imports. But the terms of trade stabilized from 2010 onward. Despite this, total exports grew at an annualized rate of roughly 15% over 2009 to 2014. For comparison, annualized export growth over 2003 to 2008

was roughly 20%. This was still driven by a narrow set of products and services. Coffee played a smaller role in export growth while sesame seeds, vegetables, cut flowers and Ethiopian Airlines itself continued to play a large role. In addition to this, some of the benefits of the GTP I investment push could be seen. Ethiopia's global market share in garment exports, as well as agriculture exports, expanded noticeably (see Figure 2.9). Both dynamics could be traced to growing FDI, especially globally competitive companies.

Figure 2.9: Global Market Share of Ethiopia's Exports – with and without Agriculture



Source: UN Comtrade; Atlas of Economic Complexity

Garment exports, by virtue of growing from a very small base, remained small as a share of Ethiopia's exports and as a share of global trade in garments. The other success, cut flowers exports, had significantly less room to grow in global markets, but the cut flower industry helped to support the emergence of broader horticulture exports. These dynamics were promising for the future, but Ethiopia still faced a macroeconomic challenge in the trade balance. By 2014, Ethiopia was exporting almost $70 per capita but was importing almost $200 per capita. This meant that other sources of foreign exchange continued to be needed to fill this increasing gap. At the same time, savings did not grow to finance the public investment push. Investment was instead financed through a combination of external debt, which supplies immediate-term foreign exchange, and several mechanisms of domestic financing, which do not.

The reason for going through all these details is to understand the changing nature of Ethiopia's growth. Over the GTP I period of 2010 to 2015, growth remained very high, but the process changed substantially from the period before. It would be fair to say that Ethiopia achieved growth but with little transformation. Growth was increasingly driven by industry (see Figure 2.2) but when broken down further, this traced overwhelmingly to construction and to a lesser extent utilities and not manufacturing. Rather than being driven by a diversifying private sector the growth of industry and services that did occur traced largely to the major public investment push. The changing growth process can also be seen clearly in the growth accounting exercise (see

Figure 2.3) as productivity-driven growth gave way to almost exclusively growth driven by capital accumulation, in this case public capital. This was intended to unlock future productivity growth and economic diversification, but it was unclear by 2015 if this strategy would work. There were some clear signs of early structural transformation, but these remained relatively small and there were signs that many of the public investment projects were not working out as planned.

Not surprisingly, this process was expensive, and this became a source of growing macroeconomic risks. The primary fiscal balance — the difference between what the central government raises in total revenues and spends in expenditures before debt payments — worsened over 2010-2015 but not at an especially alarming rate. Ethiopia had a primary fiscal deficit of about 1% of GDP that worsened to 1.5% of GDP — which is a smaller deficit than the world and Sub-Saharan average at the time. The primary deficit was contained even as tax revenue growth did not keep pace with overall growth such that revenues fell as a share of GDP. However, much of public expenditures fell outside of the central budget and instead occurred through SOEs, whose borrowing was backed by the credit of the central government. Since much of this borrowing was international (and denominated in foreign exchange), Ethiopia's stock of external debt began to rise sharply as a share of gross national income, from 10.5% in 2008 to almost 32% in 2015. Though this was well below the level of external debt that Ethiopia faced in the 1990s and early 2000s, the trajectory was concerning. Ethiopia's total debt service — i.e., the interest and principal payments owed on debt (both domestic and external debt) — also rose from 0.4% of GNI in 2008 to 1.7% of GNI in 2015. This meant that debt payments became an increasingly important component of spending. While this was not unlike the debt burden that Ethiopia faced before the growth acceleration, in an important respect this interest burden was larger because revenues as a share of GDP were smaller.

Unpacking the Growth Problem Since 2015

This growth process up to 2015 sets the stage for the growth problem that followed: significantly slowing growth after 2015. Although the pace of growth was still high by international standards, the process of growth began to break down. By 2015, the high rate of economic expansion had become driven by construction. Growth was now largely driven by the public investment push itself and not the sources of production that were envisioned to grow from the GTP I investment push. Export growth also stagnated, with widespread issues of unofficial or illegal exports emerging. Moreover, 2015 was a turning point for job creation in the economy. The employment rate across urban areas, which had been growing throughout the previous decade, began to decline across these same areas.[3] In other words, urban areas began growing faster than the supply of jobs. But why did this confluence of problems emerge after 2015. Why did the growth problem set in at this point and not earlier (or later)?

[3] Own analysis of Urban Employment and Unemployment Survey data

Was the timing due to changes in public investment? (A constant cannot explain a change)

A common explanation of Ethiopia's extraordinary growth is that it is driven by public investment. This is hardly the full story and arguably flat-out wrong. If it were the whole explanation, then we would expect to see growth rise and fall with changes in the level of public investment. We do not see this in either the rise or the fall of GDP growth. Investment rose in the GTP I and GTP II era, long after the growth acceleration, and remained high throughout the 2010s, while growth slowed. Growth slowed during the GTP I period versus the period before and then slowed much more significantly during the next five years under GTP II. A key principle of diagnostic testing is that a constant cannot explain a change. Constant, high public investment does not explain high but slowing growth.

GTP II largely represented a doubling down on the public investment push of GTP I. It would be fair to say that GTP I achieved growth but with very little structural transformation. This was largely recognized in the first many pages of the second five-year plan, which starts with a review of the successes and weaknesses of GTP I. Accordingly, GTP II emphasizes a renewed focus on (light) manufacturing and export growth through manufacturing. The second plan departs from the first by focusing on increasing manufacturing output and exports. GTP II continued a heavy reliance on infrastructure expansion through large SOEs that dominated many sectors up until this point,[4] but also envisioned a greater role of the private sector in production, especially within the manufacturing sector. During the whole of GTP I and GTP II, Ethiopia sustained current account deficits with investment levels above the level of domestic savings.

This was risky, since if financing was to dry up, the government might be forced to reduce investment before projects are finished. If this were to happen, Ethiopia would not only lose out on the envisioned gains to productivity and competitiveness from those projects; it would also face the sunk costs of incomplete public investment projects. Some of this did in fact happen, as key sources of financing for this investment — namely, external borrowing — began to reach their limits in ways that were not envisioned at the start of GTP II. This forced adjustments across government and SOE spending priorities. SOE-by-SOE and project-by-project, the government had to start to decide which projects to complete, which projects to suspend, and which planned projects to cancel and investment strategies to scale down. This involved some healthy downsizing of public projects that were not delivering intended private returns (see Box 2.1). But, as shown in Figure 2.4, a pullback in investment is not the main story behind the growth slowdown. Investment as a share of GDP remained very high throughout the 2010s, at a much higher level than investment/GDP was during faster growth in the 2000s.

[4] Up to this point, many sectors were dominated by large SOEs. Those responsible for metals and sugar were mentioned previously, but SOEs also structured production of chemicals, paper, alcohol products, and so much more. In total, Ethiopia has more than 40 SOEs, which range greatly in size and areas of focus.

Box 2.1: Examples of Adjustment of Large Public Investment Strategies After 2015

The Government of Ethiopia adapted its investment strategies after 2015. In some cases, this meant canceling or postponing intended investment plans that were included in GTP II. For those projects that would go to completion, the government still had to pivot financing strategies — primarily from external borrowing to domestic sources, including financial repression and various forms of money creation. Responding to the challenges of SOE management and debt accumulation became a key part of the government's Homegrown Economic Reform (HGER) Program, which launched in 2019, which will be discussed at length in Chapter 5. This box provides a few examples of approaches that were taken to

Railways: The completion of two initial rail projects — the Addis-Djibouti line and Addis Light Rail — came with unexpected challenges in their operations. Considering these experiences alongside significant debt accumulation by the Ethiopian Railway Corporation (ERC), including from Chinese lending, the Government of Ethiopia dramatically scaled back its planned rail lines to connect much of the country or at least postponed most of the initially envisioned projects.

Industrial Parks: In contrast to rail, the Industrial Park Development Corporation (IPDC) largely continued its plans to develop publicly owned and operated industrial parks in all regions of the country in more than a dozen locations. Progress toward completion appears to be slower than planned. Many parks faced construction problems, gaps in connecting infrastructure once completed, and/or low entry of firms once established. As of 2020, six public industrial parks were operational to some degree, two had been recently inaugurated, four more were under construction, and four new projects (one logistics park and three agro-industry parks) were in the planning stage (Cepheus Research & Analytics).

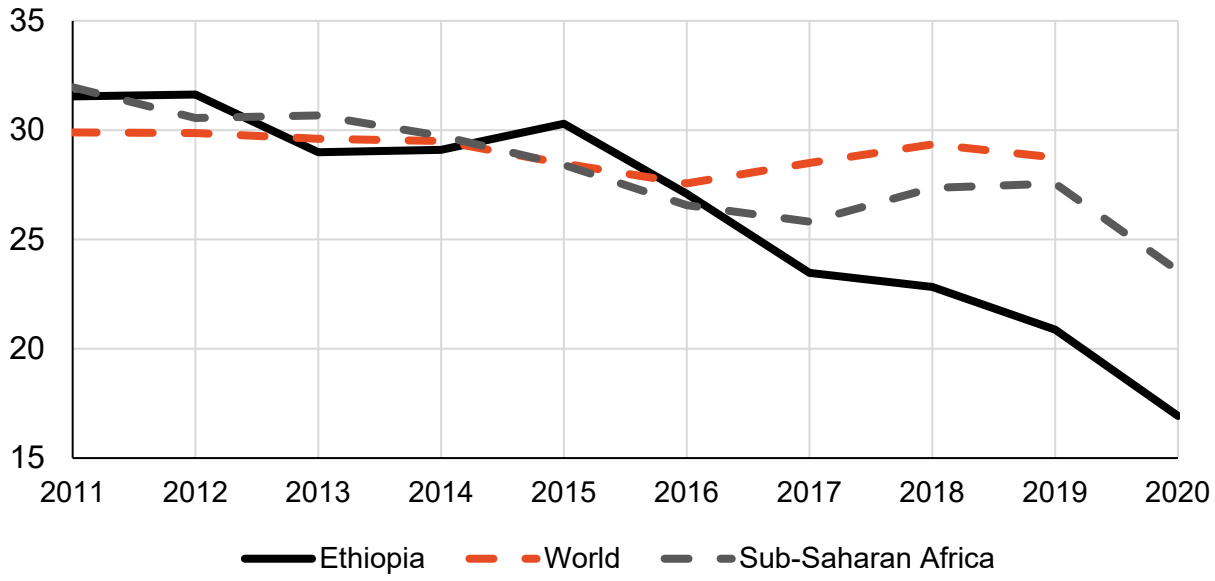
Energy Generation: The Government continued what were likely its most expensive investment projects — several mega hydroelectric projects developed by Ethiopian Electric Power (EEP) — but these needed financing adjustments. The largest hydroelectric project was the Grand Ethiopian Renaissance Dam (GERD), with a planned capacity of over 5 GW. GERD had long been internationally contentious given Egypt's opposition to the project, which reduced financing options. It was thus been financed largely through domestic bonds, i.e., "GERD bonds" held by Ethiopians in Ethiopia and abroad. This project continued after 2015 with adjustments along the way, including the import of turbines due to quality problems, that required new domestic financing, including the import of turbines for quality reasons. Several phases of filling of the reservoir have now been completed, with the dam now operating with a reported 750 MW capacity, and more phases of expansion planned. EEP also continued to develop other large dams, including the "Koysha" project, with a planned capacity of over 2 GW on the Omo River. This project faced delays as it required international financing, but construction continued in 2020.

Others considered for privatization: Other SOEs that played key roles in the public investment push became priorities for government review and strategies for privatization or partial privatization. These included, among others, Ethio Telecom, which is a public monopoly in a telecommunications space that is much less developed than in neighboring Kenya, and Ethiopian Sugar Corporation (ESC), which launched investments in sugar plantations and factories across the country with widespread problems.

Was the timing due to a decline in the capacity to import? (A very large change in the system)

Unlike the steady pattern of high investment, a noteworthy decline in import capacity coincided with a slowdown in growth. Figure 2.10 shows Ethiopia's imports of goods and services as a share of GDP and one can see a clear break after 2015. Prior to 2015, during GTP I, Ethiopia was importing at a scale in line with both the rest of Sub-Saharan Africa and the rest of the world — with imports amounting to about 30% of the size of the economy. After 2015, during GTP II, imports as a share of the economy steadily collapsed to roughly half their initial size (17% of GDP by 2020). This is an Ethiopia-specific collapse, as the world average continued to remain around 30% and the Sub-Saharan African average did decline somewhat, but not nearly to the same extent as happened in Ethiopia.

Figure 2.10: Imports of Goods and Services as a % of GDP



Source: World Bank WDI

This decline in imports as a share of economic activity represented a major and problematic change in the growth process after 2015. The growing economy still needed imports. Many businesses needed imports as key inputs to their production of products — whether that was fertilizers or cotton or microchips, or thousands of other things. Businesses also needed to import capital goods to expand — like machines, transportation equipment, and building materials — as well as spare parts. Running a business also might require imported services. The government, including SOEs, needed inputs to production imports as well as various construction materials and specialty parts to continue the infrastructure expansion of dams, railways, industrial parks, and more. Meanwhile, the growing economy naturally demands more imports for household consumption — from gasoline to food products to cars to medicines. Yet, despite all this growing demand, imports

stopped growing. This makes it extraordinary that overall economic growth continued at such a rapid pace during this period.

Why did imports into Ethiopia fall so dramatically as a share of the economy after 2015?

Why did an economy that was still growing, and which had seen imports grow by a factor of four in the previous decade, suddenly see imports effectively reach a cap? The simple answer is that imports stopped growing because the economy no longer had foreign exchange to pay for more. The Ethiopian economy was no longer receiving enough foreign exchange inflows that it could use for more imports. We will explore why this happened, but first it is necessary to understand the exchange rate regime. At the national level, foreign exchange coming in and foreign exchange going out must basically balance at any given time. This balance happens one of two ways — either automatically or manually — depending on the exchange rate regime of the nation.

Countries with a floating exchange rate allow this balance to happen automatically as the exchange rate moves to clear the market. If there is not enough foreign exchange coming in to pay for what is going out, then the price foreign exchange goes up (a depreciation) and importers either continue to import or stop based on their willingness to pay. If there is a surplus of foreign exchange inflows, then price of foreign exchange becomes a little cheaper (an appreciation). This tends to happen gradually, but a floating rate can expose an economy to a lot of risk and volatility, particularly if the foreign exchange that is flowing in is volatile. Countries that do not want to face such a risk will adjust their exchange rate manually, often by setting a rate against other currencies, like the U.S. dollar. This policy-determined exchange rate may not allow the market to clear. In fact, it certainly will not, at any given point in time. However, it may work well on average. At times when there is more foreign exchange coming into the country than going out, the country will accumulate foreign exchange reserves, and when the reverse is true, it will lose reserves. This exposes the economies to a different type of risk. If reserves begin to run out, then the country will be forced to either devalue the currency or restrict its imports, or both.

In practice, exchange rate systems are often neither fully floating or fully pegged against another currency, and the balance is achieved through a mix of automatic and manual adjustments. Ethiopia has a what is best understood as a “crawling peg” against the U.S. dollar. The National Bank of Ethiopia adjusts the exchange rate manually, but it generally moves at a predictable pace and only in one direction, that of devaluation. It is this pace of the “crawl” that officials change from time to time (see again Figure 2.8). In 2008, as reserves dipped to a very low level, the rate of crawl accelerated. In 2010, once reserves were restored to a more comfortable level, the rate of crawl was slowed to a fixed pace that was roughly maintained until an adjustment was needed in late 2017. Ethiopia also experienced an expanding black-market premium for foreign exchange as can be seen from the same figure. This captures the fact that Ethiopia limited imports not only through the price of foreign exchange but also through limitations on the supply of foreign exchange made available for imports. Rather than drawing down on foreign exchange reserves —

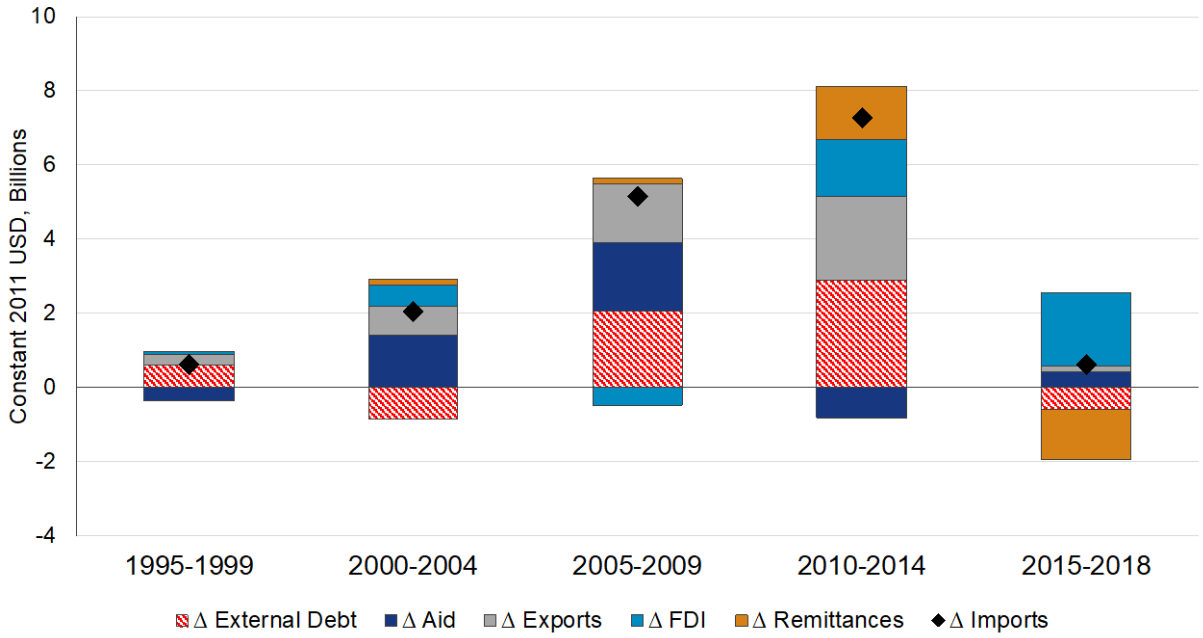
which remained at roughly two months of imports from 2012 onward — the National Bank of Ethiopia administered controls on who could access to scarce foreign exchange to import.

The National Bank of Ethiopia was essentially setting the nominal exchange rate at the "wrong" level, which made imports cheaper (to those with access to foreign exchange at the official rate) but created an effective tax on exports by making them more expensive to international buyers. The rising black-market premium, especially after 2015, reflects a growing problem. Without guaranteed access to foreign exchange in the official market, many firms and businesses felt the need to go through illegal channels to secure foreign exchange — at a premium — which the official system could not provide. The existence of the black-market premium is evidence that it is not that the Ethiopian economy suddenly demanded much fewer imports after 2015 but rather that access to foreign exchange was limited by policy. This and other chapters will discuss the black-market premium at length, including why the NBE has not simply set the nominal exchange rate to the "right" level. But first it is important to understand why this startling change in the growth process happened. What changed in the inflows of foreign exchange that so profoundly changed the import capacity of the economy?

Decomposing the sources of foreign exchange allows us to see how changes in the period after 2015 led to a fall in imports as a share of economic activity. Figure 2.11 shows the changes in the various sources of foreign exchange over 4- or 5-year periods as stacked bars. It also shows the change in imports as black diamond marker. Everything is shown in terms of constant U.S. dollars. This allows us to see changes in what was shown previously in Figure 2.6. The sum of all the segments of the bars equals the change in imports. The red dashed segment is a residual value; it captures those foreign exchange inflows that are not explained by the other categories. External borrowing is the main component of this residual, so it is labeled as such for simplicity.

From 2010 to 2014, imports were able to grow so significantly because of a combination of growth in exports, foreign direct investment, and official remittances but also — and most of all — thanks to external borrowing's role in providing foreign exchange. Aid fell in real terms over that period, but those other sources of foreign exchange grew by much more. In the period after 2015, on the other hand, import growth collapsed because of a collapse in most of the foreign exchange sources that were growing before. The one exception that grew in U.S. dollar terms was FDI. Therefore, there are three main changes in foreign exchange generation that are to blame for the collapse in import capacity: (1) a sharp slowdown of export growth; (2) a decline in external borrowing; and (3) decline in official remittances. Taken together, these were the proximate causes of the dramatic reduction in imports, which correlates strikingly with the slowdown in growth. Let's understand these proximate causes of weak foreign exchange generation individually before returning the import problem.

Figure 2.11: Change in Imports (in Constant USD) Decomposed by Source of Foreign Exchange

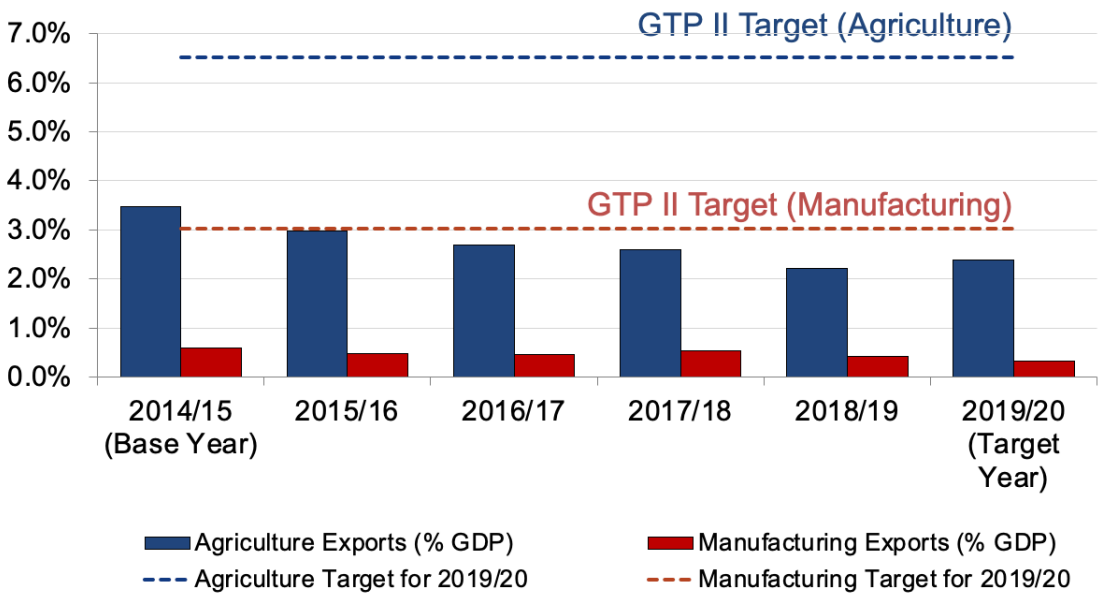


Source: World Bank WDI

Issue 1: Slowdown of Export Growth

The story of exports will be explored in great length in Chapter 4, but it is important to note how much this slowdown in export growth contrasted with what was envisioned by GTP II. The strategy clearly recognized that exports would need to grow through new channels to support the growth process and set very ambitious goals for export growth. In many respects, export growth that preceded GTP II was high, but since it came from such a low base, it was not sufficient to keep pace with foreign exchange demand. GTP II first targeted an increase in what was working — agriculture exports were targeted to grow from 3.5% of GDP in 2014/2015 to 6.5% of GDP in 2019/2020. Unfortunately, agriculture exports declined as a share of GDP each year until 2019/20 (Figure 2.12). GTP II also targeted growth in what was not yet working. Manufacturing exports were targeted to grow from 0.5% of GDP to 3% of GDP. Taken together, agriculture and manufacturing exports amounted to less than 3% of GDP in 2019/20 rather than the envisioned 9.5% of GDP. This gap of about 6.5 percentage points of GDP explains some but far from all the collapse in imports seen in Figure 2.11. Overall goods exports fell consistently over the GTP II years in USD terms, while services exports continued to grow. Part of the diagnosis of why growth has slowed must therefore explain why export growth — particularly growth of exports of goods — has been weak during the GTP II period. We attempt to explain this later in this chapter and discuss export strategy in depth in Chapter 4.

Figure 2.12: Export Performance in Comparison to GTP II Goals



Source: NBE Quarterly Reports; GTP II

Issue 2: Decline in External Borrowing

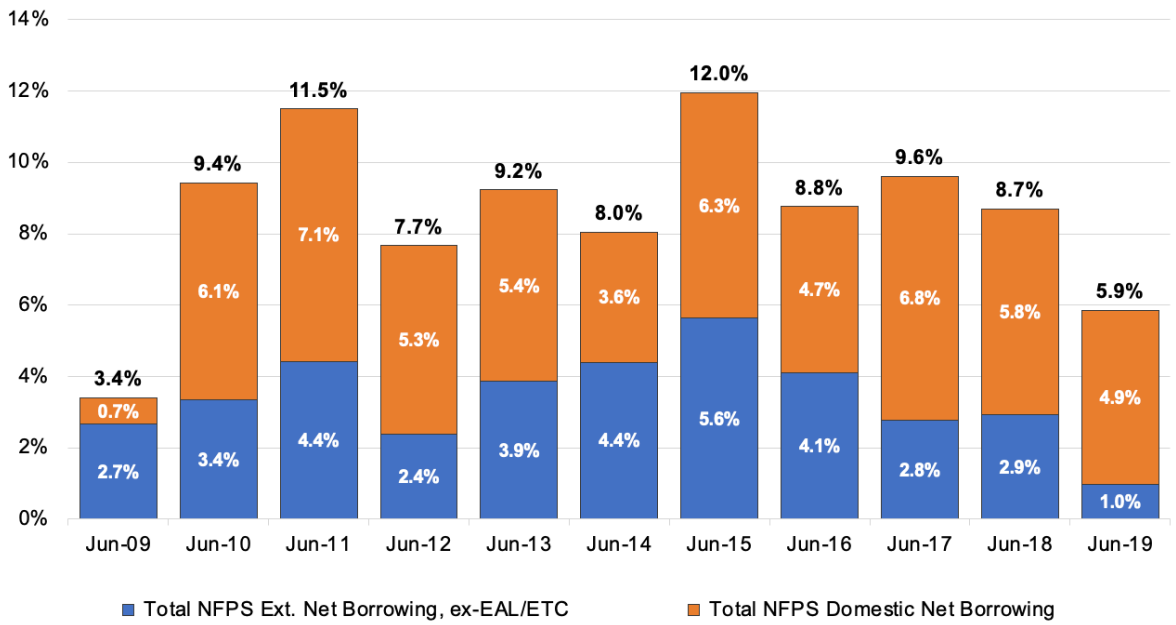
The decline in external borrowing appears to be the result of a policy choice, but a policy choice brought on by growing international concerns of unsustainable debt accumulation. When GTP II was launched in 2015, Ethiopia did not have any active support program from the International Monetary Fund (IMF) in place, but the IMF did conduct a roughly annual Article IV assessment in Ethiopia as part of its regular country surveillance work. The debt sustainability analyses sections of these Article IV reports reveal how debt sustainability perceptions worsened over the span of three years. In 2015, the IMF's Debt Sustainability Analysis (DSA) increased its risk assessment from "low" to "moderate". In 2016, the IMF's DSA found that "external vulnerabilities have increased" as exports underperformed, and drought required scaled up food imports. By this time, Ethiopia had passed a standard threshold of debt-to-exports. In 2017, this dynamic continued to worsen as two indicators of external debt distress surpassed thresholds, though not other indicators that look at debt in comparison to GDP or debt payments as a share of revenues.

Figure 2.13 shows the resulting transition in Ethiopia's total borrowing by looking at changes in Ethiopia's debt stock for each year versus the prior year based on public reports. Since much of the borrowing was conducted through SOEs (backed by the full faith and credit of the Ministry of Finance), rather than by the central government itself, this type of "below the line" assessment is needed to get a complete picture of borrowing. This graph leaves the debt of Ethiopian Airlines (EAL) and Ethio Telecom (ETC) out of the calculation because these SOEs are financially sound, such that their borrowing does not expose the government of Ethiopia to the same repayment risks

as other SOEs. Even leaving these two large SOEs aside, the graph shows that total borrowing to finance GTP I and GTP II was very high, ranging between 8% and 12% of GDP for the years 2010-2018. Importantly, the graph captures a transition noted by the IMF in its 2017 DSA, namely that the government began to significantly reduce its use of external borrowing to respond to debt sustainability risks. However, this did not mean an immediate reduction in overall borrowing, even as public and SOE projects came under closer scrutiny. Rather, it meant a compositional change from borrowing from abroad to borrowing domestically.

This shift from external to domestic borrowing had many consequences, which will be discussed more in the next chapter. But one key consequence — that was not necessarily obvious to policymakers or the IMF at the time — is that this amounted to a large reduction in a key inflow of foreign exchange that had supported import growth and the short-term sustainability of the growth process. Billions of dollars of foreign exchange inflows were suddenly removed from annual supply, in the presence of a rapidly growing economy and ongoing large, import-intensive investment needs. External borrowing peaked in 2015 at around $4 billion before receding sharply, by almost 60% in USD terms within two years.

Figure 2.13: Total Net Borrowing of Central Government and SOEs (% of GDP)



Note: Graph excludes the borrowing of Ethiopian Airlines (EAC) and Ethio Telecom (ETC)
Sources: MOF Public Sector Debt Bulletins; NBE Annual Reports

IMF reports continued to paint a picture of how external borrowing was reduced. The next IMF Article IV from 2018 notes how the Ministry of Finance announced that no new projects would be financed by non-concessional debt as of 2018/19. By 2019, Ethiopia had begun to renegotiate

bilateral loans to reduce external debt servicing needs (IMF, 2020). Yet, counterintuitively, the debt situation continued to worsen — but only on the external margin. In 2019, the government developed a support program with the IMF centered on this challenge. At that time debt and debt payments continued to be large in comparison to exports but remained non-problematic in comparison to GDP overall. One could argue that the problem had less to do with debt and more to do with exports. Despite Ethiopia's actions to reduce external borrowing, total debt service as a share of exports continued to worsen over time. This figure was less than 3% in 2008 and grew rapidly to 12% by 2015. And, even as external borrowing was reduced, the figure continued to worsen to 28% in 2019, before falling slightly to 26% in 2020 (World Bank WDI). For reasons that will be discussed further, it appears that concerted effort to address the numerator in debt-to-exports had substantial negative impacts on the denominator such that the very actions taken to address debt sustainability risks may have indirectly worsened debt sustainability.

Issue 3: Decline in Official Remittances

The third channel of collapse in foreign exchange generation as captured in Figure 2.11 was official remittances, as measured by the National Bank of Ethiopia. The qualifier "official" here is important because there are several issues at play when estimating transfers from individuals living abroad to individuals, often family, back home in Ethiopia. Remittances often represent a large source of foreign exchange for developing countries, especially countries with large diasporas living abroad. However, estimating these flows is tricky because central banks can only observe remittances that go through official channels that work through the banking system or other formal remittance platforms, whereas families can often send cash more directly. Since remittance services charge fees to make a profit, informal remittances often allow recipients to receive more of what is sent.

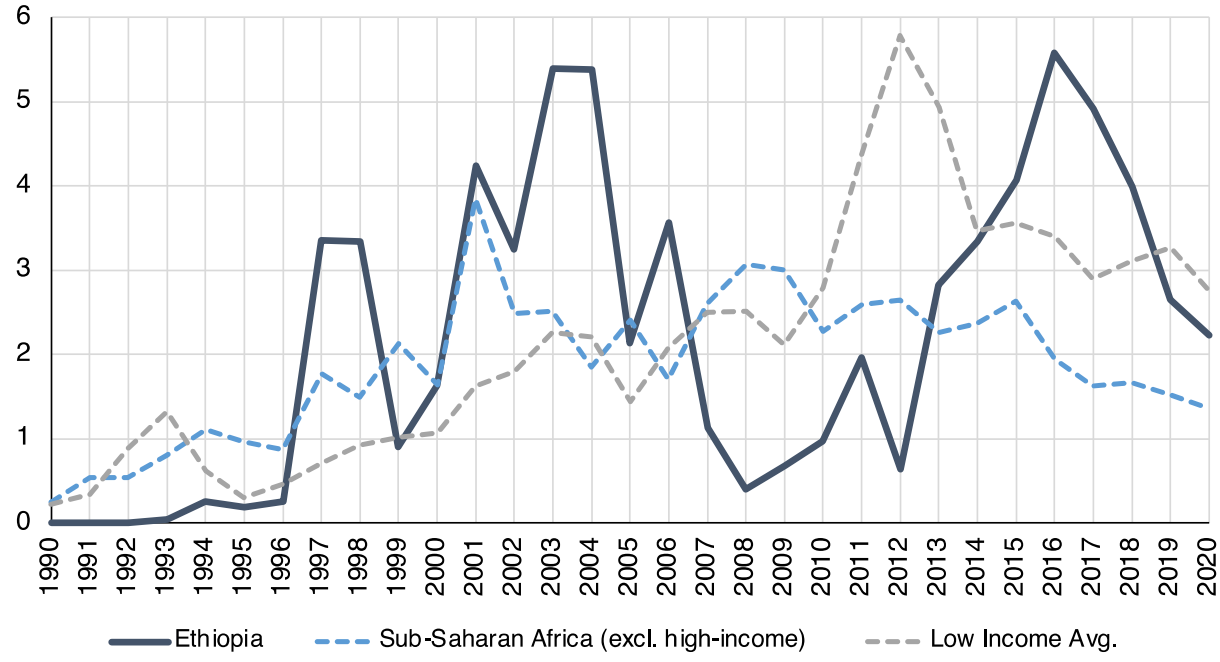
Nevertheless, the fall in official remittances as a share of GDP after 2015 is a clear trend. The reasons behind this trend are complicated and may trace to two causes. First, there was a growing public discontent with the ruling government at the time, tracing to several issues including opposition to the expansion of Addis Ababa into the surrounding region of Oromia, displacement of farmers to make room for public projects, and general anger about lack of freedoms and authoritarian control. However, since remittances are paid to households, this likely did not change the desire to remit but may have impacted confidence in official systems. The second and more likely reason for the collapse in official imports was the rising black-market premium for foreign exchange. This incentivized informal remittance channels since transferring money in U.S. dollars and other foreign currency allowed more value to be transferred to individuals and households in Ethiopia. This is because official channels convert the payment to Birr at the official rate, whereas unofficial remittances paid in foreign currency allow households to benefit from the higher value of those dollars in the local black market. Since official remittances remained low after the change in government leadership in 2018 and resulting noteworthy positivity expressed by diaspora communities, this second cause of depressed official remittances is likely the main explanation of

the trend. This means that the decline in official remittances did not necessarily reflect a change in total remittances but rather an increased use of informal channels.

Source of Foreign Exchange Growth: FDI

If it were not for significant FDI growth post-2015, import capacity would have declined by much more. But even though FDI seems like a bright spot in the post-2015 growth process in Figure 2.11, as FDI volumes have been a key source of foreign exchange, a look at changes over time shows problems here as well. The value of FDI as a share of the economy peaked in 2016 at 5.6% of GDP, which is high by international standards, and has fallen precipitously since. This parallels a rise that peaked in 2003-04 and subsequent fall. The role of FDI in Ethiopia's economy will be discussed in detail in Chapter 4, but it is important to note that FDI is not just a foreign exchange source. Perhaps more importantly, it is a key ingredient for export diversification, and hence long-term export growth. FDI introduces knowhow by taking a globally competitive company and moving it to Ethiopia, where it still must adapt and learn to compete in the local context. FDI supported early-stage structural transformation in Ethiopia, especially in garment exports as reflected by Figure 2.14, but the FDI momentum has slowed even as public investment projects have continued.

Figure 2.14: Foreign Direct Investment (FDI) Net Inflows as a % of GDP



Source: World Bank WDI

Several factors contributed to this pattern of slowing FDI up to 2020. First, the same instability emerging in 2015-16 that was noted earlier affected perceived risks of foreign investment in

Ethiopia. Second, there were major problems in the quality of public investment projects and the completion of infrastructure projects. For example, many industrial parks remain poorly connected to electricity and the initial railway line has had operational challenges. Third, the weakness in foreign exchange generation and reduction import capacity that has been discussed at length here weighs heavily on investment decisions. Ethiopia's export profile, which is a function of what the economy knows how to produce competitively, remains low in diversity and economic complexity. This latter measure, when compared with GDP per capita, is a useful indicator for projecting economic growth over the medium-term as it captures the capabilities of a countries export sector. Ethiopia ranked 97th out of 133 large economies globally in economic complexity in 2020, which yielded a 10-year growth projection of 5.2% on average.[5] Ethiopia has been gaining economic complexity over the years, in large part thanks to FDI-led diversification, but this implied carrying capacity for growth is much lower than government targets.

Why does the import capacity change matter?

Qualitatively, we know that the decline in import capacity at the macroeconomic level after 2015 coincides with the start of a very difficult period for firms to import. Since 2015, there are widespread and well-documented reports of firms facing major challenges in converting Birr to USD and other sources of foreign exchange with which to contract import purchases. This is not something that businesses have to worry about in most countries, as buyer and sellers across borders use banks and systems of "letters of credit" to transfer and receive payments in different currencies. However, in Ethiopia, there was simply not enough foreign exchange to go around for every purchase to receive a letter of credit at the same time, causing the market to break down.

Instead, several regulations and systems for rationing foreign exchange usage organized the process of importing. Many of these systems — established through foreign exchange directives (FXDs) by the National Bank of Ethiopia — were already in place in 2015 given that Ethiopia had faced this problem of foreign exchange imbalances in the past. These included a "queue" for foreign exchange, which is a first-come-first-served system, in theory, where businesses apply at through the NBE for foreign exchange access.[6] Yet, the foreign exchange rationing system also included several specialized channels that distribute foreign exchange before it reaches the queue.[7] These systems, which are discussed in more depth in Chapter 3, did not fundamentally alter foreign

[5] These patterns can be explored in high detail using the Atlas of Economic Complexity (atlas.cid.harvard.edu)

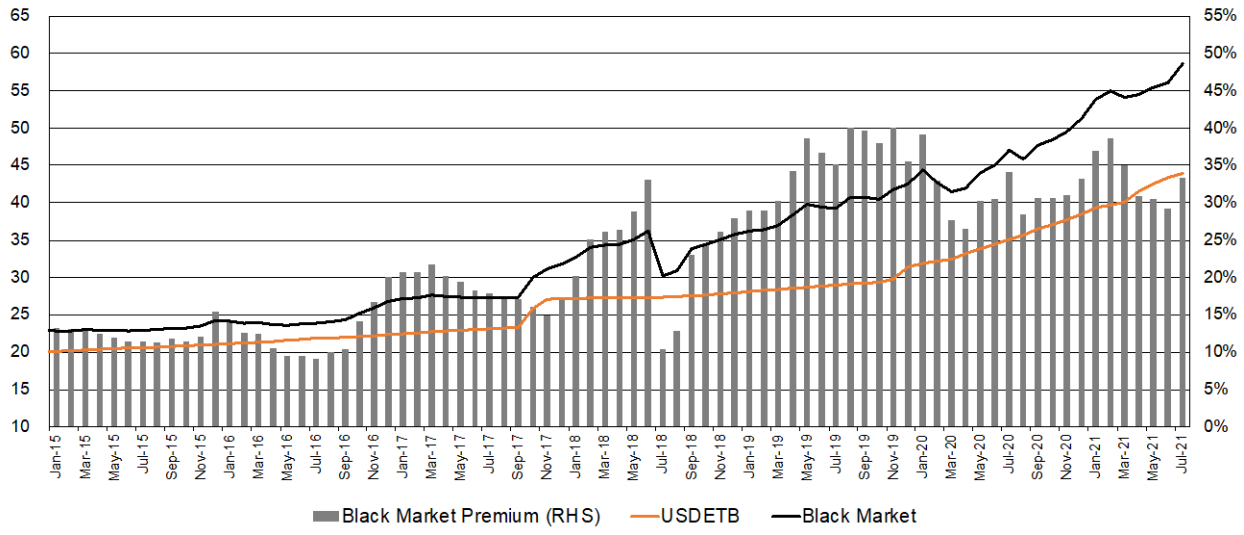
[6] There are tiers of prioritized access that give priority to some products, including medicine and fertilizers for example, but Growth Lab analysis of queue data in 2019 found that products prioritized within the queue based on *de jure* rules did not necessarily see faster access to foreign exchange *de facto*.

[7] Some of these systems include: a "surrender requirement" that channels foreign exchange in the banking system to the government first, the "Franco Valuta system" which allows qualifying entities to import using their own foreign exchange outside of the banking system (and without paying import duties); exporter retention accounts that allowed exporters to retain and use some of the foreign exchange they generate through exports; and diaspora bank accounts. These systems are full of complicated rules that have changed over time through foreign exchange directives in an effort by the NBE to channel scarce foreign exchange to areas where it would have high value.

exchange access when inflows exceeded import demand, but they became binding when foreign exchange inflows collapsed and the need for rationing increased. As a result, firms in the queue report waiting a year or more for foreign exchange to import. Many go out of business or change strategy long before this, as few businesses can survive with such long delays between identifying an import need and importing that product.

Since this system could not facilitate foreign exchange access to all the importers in Ethiopia who wanted to make an import purchase, many firms and individuals turned to the black-market and other mechanisms. The black market for foreign exchange is a natural market that arises between those who have foreign exchange and can generate the most value from it by selling it to those who need it at a premium over the official exchange rate. The black market reflects the excess demands for imports in the Ethiopian economy. The black-market premium grew from below 15% early in 2015 to upwards of 40% in early 2020, prior to the COVID-19 pandemic (Figure 2.15). Recent systematic data for tracking the black-market premium is less available at the time of writing in 2022, but there have been frequent spikes in the market and upward pressure continues. There are also widespread — and creative — mechanisms that individuals and businesses will use to gain access to foreign exchange rather than wait in the queue. These include traveling abroad to access dollars to bring back home (or make purchases themselves abroad), setting up an exporting business (such as coffee trading) to access retained foreign exchange earnings, manipulation of diaspora accounts and Franco Valuta licenses, and simple lobbying for exceptional access through established channels of exceptions.

Figure 2.15: Official and Black-Market Exchange Rates (Birr/USD) & Black-Market Premium



Source: NBE Daily Exchange Rates, NBE & Facebook tracking data

New evidence shows that certain types of imports are especially constrained by the system. As the black-market premium rises and falls, imports of capital goods — especially machinery imports

— tend to be most impacted (Takemura, 2022). This suggests that the problem causes not only challenges in the operation of businesses, but perhaps especially causes challenges to business expansion. The system also causes clear divides between the fortunes of those that benefit from a special regime versus all the rest. Some entities that benefit are SOEs, firms in industrial parks, foreign-affiliated firms, and entities that gain a Franco Valuta license. Overall, the system incentivizes finding and capitalizing on loopholes in the special regimes and various kinds of informal and illegal activities to avoid the need to wait in the "queue". This includes incentivizing informal remittance channels and trade across borders that is not registered with customs offices (or where customs officials are bribed).

While some foreign exchange rules are meant to favor exporters, such as exporter retention accounts, out of the recognized importance of channeling foreign exchange to the purpose of generating more foreign exchange, it is not clear that this is working. One reason for this is that the system most incentivizes trading businesses that can make profits on arbitrage opportunities of exporting something — anything — to sell the resulting foreign exchange into the black market. Another reason is that the system overall is viewed as a risk by new businesses, especially from abroad, who do not initially know how to navigate the system and see it as a major risk to achieving returns to investment. Both reasons work against the long-term need for Ethiopia to diversify its exports to achieve stronger export growth. As foreign exchange scarcity has tightened, this has worsened diversification potential.

Why Growth Diagnostics?

By investigating changes in the growth process since 2015 in relation to the periods before, we begin to see the growth problem more clearly. Growth has slowed because the ability of the economy to import has slowed. Growth has become increasingly reliant on capital accumulation through the public investment push of GTP II — not because public investment expanded after 2015 but rather because envisioned sources of growth have not fully materialized. Diversification has been weak and productivity growth has been insufficient. By one measure, TFP, productivity growth has turned negative in many years recently. This is in part a long-term challenge. Even going back to the start of the growth acceleration in 2004, the Ethiopian economy has not been able to generate sufficient exports and foreign exchange to support the growth of imports and has instead relied on aid and external borrowing. Ethiopia did not borrow externally for this purpose. Rather it was a byproduct of borrowing to finance government public investment through both government and SOEs. When this channel of foreign exchange was lost — as government reduced borrowing from abroad and turned increasingly to domestic financing — this caused the growth process to gradually unravel. The import capacity of the economy has collapsed and the ramifications of import restrictions through foreign exchange rationing have been widespread. This has undermined export growth and export diversification, as well as increased FDI risk, which all weakens long-term growth prospects and makes the current challenge of foreign exchange imbalance harder to overcome. There are certainly many other ways of describing the process and

many other changes that could be worth highlighting. The use of diagnostic testing is especially important to check whether issues that we think matter are really constraining the growth process — in other words, testing which constrained inputs to economic expansion are truly binding.

Just as a doctor employs medical diagnostics by interpreting symptoms and using lab tests to systematically test what is causing a person to feel sick, growth diagnostics allow an economic practitioner to do the same. A growth diagnostic must not just explain the growth process — as this chapter has done at length — but also use economic signals and systematic testing to identify the most binding constraints to economic growth. By naming and framing what is binding, we can collectively focus scarce resources and government attention on addressing the main cause of the growth problem. Without this, it is easy for growth and development strategies to miss the mark and for the growth problem to get worse. This is especially important in the context of the government's Homegrown Economic Reform Program, which seeks to now address these challenges that have intensified during the five years of GTP II.

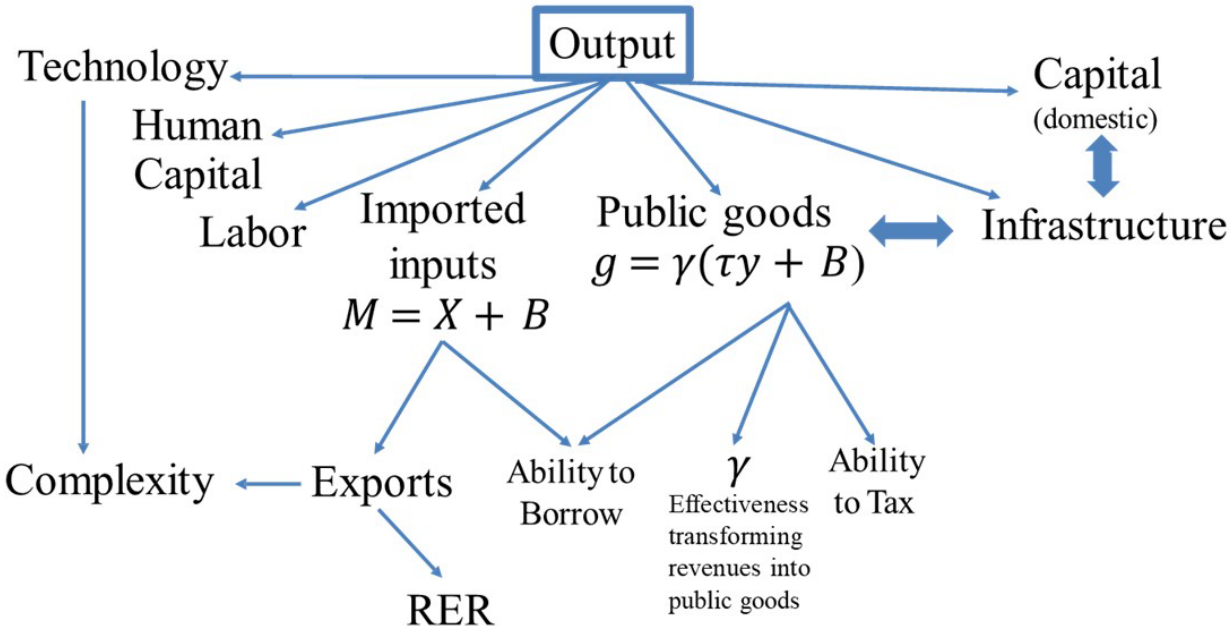
The advantage of the framework is to provide for the use of economic theory and evidence that lays bare the assumptions and theories of change behind reform strategies. Traditional approaches to economic strategies generally advance wholesale reform to "do all you can, while you can" to address all potential growth constraints at once. Policymakers and development practitioners often assume, without necessarily realizing it, that all determinants of growth are substitutes. This is what allows many to think that things like financial deepening or improvements on the World Bank's Doing Business Indicators or modernization of the education system will help to spur growth in any context. The reality is that determinants of growth are more like complements than substitutes. One or a few issues, if left unaddressed, can undermine the success of sincere reform efforts in other areas. This helps explain why reforms in one direction, even when a genuine, positive effort (e.g., fertilizer subsidies to increase agriculture productivity or expansion in higher education), may make a binding constraint worse (e.g., causing a fiscal crisis) or intensify a negative outcome (e.g., intensifying unemployment). The cost of getting the diagnosis wrong is often worse than just having no impact on wellbeing, wasting scarce financial resources, or reform fatigue. Often, advancing the wrong reforms, or the right reforms in the wrong order, may make the growth problem worse.

Growth diagnostics starts by defining the growth problem. In Ethiopia, the key growth problem — in our view — is that growth has been slowing since 2015. The preceding pages highlight a few ways in which macroeconomic risks and imbalances have been growing at the same time. But the central problem is that the growth process — which has raised incomes and reduced poverty for much of society — has weakened and shows signs of further weakening ahead.

A diagnostic of this growth problem works through a decision tree (such as the one shown in Figure 2.16) with testable hypotheses and use of signals and evidence. The constraints identified must offer an internally consistent explanation of this growth pattern and must be backed by

evidence. Growth diagnostic thinking is not about generalizable theories about economic growth or various growth models or international best practices. Rather, a diagnostic thinking is about understanding the economic system in a particular context, how it works in practice, and how it could work better. In this example diagnostic tree, the potential causes of low output are broken down into possible constraints in access to capital, public goods, imported inputs, labor, human capital or technology. Some of these potential constraints can be tested further if there are signals that they may be binding growth. For example, a constraint in imported inputs could trace to problems with exports or an inability to borrow externally. Export weakness could trace to the real exchange rate or to low economic complexity. Key gaps in public goods could trace an inability to tax, an inability to borrow externally, or a lack of effectiveness in transforming available spending into effective public goods. Many parts of the tree can be linked together.

Figure 2.16: Example of a Diagnostic Tree used in Growth Diagnostics



Source: Growth Lab construction

Diagnostic trees can be made simpler than the example shown here. They are ultimately a tool for organizing hypothesis of what could be causing a bad outcome and can be structured flexibly. Working through any diagnostic tree requires use of diagnostic tests. When it comes to diagnostic testing, there are some principles that are always helpful. These can be applied to test any potential constraint, though doing so sometimes requires creativity and innovation to source data and information and use it critically. When assessing the importance of a constraint, four signals are of particular importance. If an issue is truly binding growth, the following four tests should come back positive.

Test 1: The (shadow) price of the constraint should be high. It is a simple principle of supply and demand, that when something is undersupplied in relation to demand for it, the price of that thing will go up. Many tools for international benchmarking — like the World Economic Forum's Global Competitiveness Index and the like — provide great information on the supply of various economic inputs, but do not look at demand. Something that is in short supply may be a problem if lots of businesses are demanding it or may not be much of a problem if demand for it is low. So, it is important to look for signals not only of low supply, but also of higher demand. When something is supplied in a relatively competitive market, shortages will show up clearly in prices. One challenge of looking at the economic system in its entirety is that inputs to production may not be traded in competitive markets. This is true for public goods, including many types of infrastructure and provision of education, and various institutions that are needed for an economy to thrive. It is also true for some things like access to land and access to finance, which may be supplied in systems that are full of market failures. However, there are very often price signals that can be observed for any of these inputs if you know where to look. If access to finance is a binding constraint, interest rates on borrowers must be high. If education is a constraint, returns to a year of schooling as captured by Mincer wage regressions on that type of education should be high. In other cases, there might not be a direct market of any kind, but a "shadow" price can be evaluated. For example, if road infrastructure is binding, then the cost to transport goods will be high and/or the time it takes to get between two key points will be long. In still other cases, there may be a "shadow" market or a black market that has emerged to supply a missing input. This will also be a good indication of a large gap between supply and demand. These prices — whether market-determined or shadow prices — should be compared to other economies to get a sense for how high they are.

Test 2: A change in the constraint should produce substantial change in outcomes related to the growth problem. This is based on simple logic of cause and effect. Sometimes a common theory of what holds back growth breaks down when you look at history. If the presumed constraint has remained the same over periods of high and low growth (or whatever the growth problem in question is) in the recent past, then this is strong evidence that the constraint is not binding. It is common to see cases where a supposed constraint has even consistently improved over time (e.g., the time it takes to register a business or access to finance by small and medium-sized businesses or years of schooling) as the growth problem worsens. This can help to reject constraints as binding, and often these are constraints that were widely assumed to be binding and treated as such in growth strategies, explaining their continued improvement. Instead, if a constraint is binding, we should see evidence that it has moved in tandem with the poor growth outcome that we are interested in. For example, if growth slowed down at the same time as an electricity system began to fail, as seen through increasing blackouts and brownouts or increasing electricity prices, this would be a strong signal that this constraint could be binding. If access to finance is binding, we would expect to see interest rates movements be negatively correlated with the amount of investment in the economy over time. As with the first test, if something is a binding constraint, it should produce signals not only on this test but also across the others.

Test 3: If a constraint is binding, there should be differential outcomes for those activities that vary in their intensity along that constraint. There is a useful analogy to explain this test that we can think of as "camels and hippos". The idea is that camels thrive in the desert because they can live on very little water, whereas hippos will not survive very long in the desert. Hippos are water-intensive, and camels are not. The same idea applies for business activities. Just as in the analogy, it can apply for water. If water is a binding constraint, we will not see many businesses in water-intensive activities, like vegetable growing or paint manufacturing, or we might see these businesses struggling most if this is a constraint that was not problematic before but has now become binding. Intensity measures like this are often available using metrics from input-output tables constructed in developed economies and from research on certain topics, like contract intensity or exposure to specific types of shocks. If there is noteworthy growth in some segment of the economy, then it can be very useful to explore what inputs those businesses are and are not intensive in. For example, if warehousing or other industries with a large land footprint (i.e., "land hippos") are thriving, then land access is unlikely to be a binding constraint. If these businesses use very little labor or skilled labor, they might be "camels" in those inputs, and this might suggest looking more into potential constraints there.

Test 4: Agents should be attempting to overcome or bypass the constraint. If a constraint is binding, we should find lots of evidence of firms trying to overcome it. Sometimes this evidence becomes very easy to find. For example, when electricity is a binding constraint, there will tend to be widespread usage of generators and other back-up power sources to try to adapt to the constraint. When road congestion or road quality is a binding problem, motorcycles or bicycles might be a ubiquitous means of getting around. At other times it might be more subtle. Where financial intermediation is a constraint, evidence may be that conglomerates dominate growth, as they hold their own capital markets to finance new product development as a workaround for financial market failures. Elsewhere, mafias may signal firms' workarounds to resolve property rights and contracting problems. When a constraint is especially binding, one will tend to see a lot of creativity by businesses to find ways to survive. Another potential type of evidence on this test may come through identifying and understanding a "hippo in the Sahara". This is a case where you find very strange business that looks nothing like the others in an economy and by speaking with the business you come to understand that they have a unique way of overcoming a constraint that others like them have not been able to achieve. For example, firms that require a lot of workers can be constrained by transportation networks that make it too costly for people to get to work, so to succeed such firms will sometimes find ways to locate very close to where lower-income communities live as well as provide their own bus service to get people to the job. For this test, it is especially important to have substantial conversations with businesses that often push beyond their stated constraints (e.g., taxes, regulatory hurdles, or lack of subsidies) and understand their actual business decisions in more detail.

If there is a single, binding constraint that underlies the growth problem, then this constraint will show strong positive signals across all these tests. However, the problem is often more complex

than a single constraint. One might find a few signals for one constraint and a few signals for another. Or you might see that a constraint appears binding for one segment of the economy but not very binding for other parts. This could take the form of constraints being binding for new entrants, but not for established industries and players who have gained experience in navigating the constraint over time, or even benefit from the constraint keeping out competition. There might be geographical dimensions where a constraint appears binding for one part of a country but not others. This is common for infrastructure constraints since infrastructure exists in one physical place but not others. Constraints may also be more binding for some segments of society than others, including by gender, race, ethnic background, or class. This will, of course, depend on the context of the society.

For these reasons, a growth diagnostic may reveal a mix of interacting constraints. In can be useful in these cases to try to identify an overarching pattern that ties them together. One can think of this as a "growth syndrome". But even in circumstances where a single constraint dominates all others, it is important to investigate why this constraint persists in a sort of equilibrium. If it is so problematic, why has it not been solved already? Like in medicine, diagnostic tests are essential, but it is not obvious how to interpret the signals and how to put it all together. The signals are not coming from an abstract economic system but from a unique context its own the culture, political and social institutions, economic history, and geography. Just as doctors have not been displaced by fully automated diagnostic tools, growth diagnostics may not be fully automated. Rather it takes a team of people, often with different specialized knowledge, and it also requires deep local knowledge of context. A growth diagnostic for one place — and at one point in time — will not be very informative for other places, though some patterns do repeat across economies. However, the approach and much of the process of growth diagnostics is similar no matter what economy and growth problem you have in front of you.

What is Binding the Growth Process in Ethiopia?

This chapter has so far described the evolution of Ethiopia's growth process over time. Ethiopia's exceptional growth has evolved from being agriculture-led to services-led and is now construction-led as the government invests heavily across public goods, in an effort to expand manufacturing, exports, and the role of the private sector. Much has improved in well-being, opportunity, and resilience over the last two decades of growth, but the momentum had considerably even before COVID-19 and the recent conflict in the country. Growth has become a story of capital accumulation, rather than structural transformation into higher-productivity sectors. Even with notable early success toward export diversification, manufacturing and export performance has fallen far short of what Growth and Transformation Plans envisioned, which has undermined macroeconomic fundamentals. Ethiopia's growth was by enjoyed a jump in agricultural productivity that was enabled through wise use of newly discovered fiscal space and foreign exchange availability, but the process has been unable to generate enough foreign exchange to sustainably support the growing demand for import of the economy. Even as several approaches

have been used to force higher savings in the economy, this falls well short of levels of investment, which means foreign financing has been required. As key sources of foreign exchange were removed from the system, particularly external borrowing due to macroeconomic risks, growth has slowed and many negative feedback loops in the productive system and in the macroeconomic system have intensified. Debt sustainability as expressed by debt-to-exports and debt service-to-exports only worsened, and at the time of writing inflation has accelerated.

Based on this evolution, access to foreign exchange (and, as a result, imported inputs) is an obvious candidate to test as a binding constraint to economic growth after 2015. Readers in Ethiopia may note that this would be an obvious constraint to test even without all the history of the growth process discussed to this point. In business roundtables, including our own, the inability to secure foreign exchange for import purchases tends to be a top constraint raised by most businesses. In a roundtable conducted by the Growth Lab and USAID in late 2018 with business leaders from a variety of sectors, not only did nearly every business represented mention struggles with foreign exchange in their comments, but most were eager to speak with the bank representatives present after the meeting to find out if there were ways to access to get their requested dollars faster that they had not tried yet. Other constraints were also clearly important to test at the time of this roundtable discussion. These included: electricity infrastructure, transportation infrastructure, access to finance, education, and macroeconomic stability (a type of public good). Each of these possible constraints was also explored using the same tests discussed here for foreign exchange.[8]

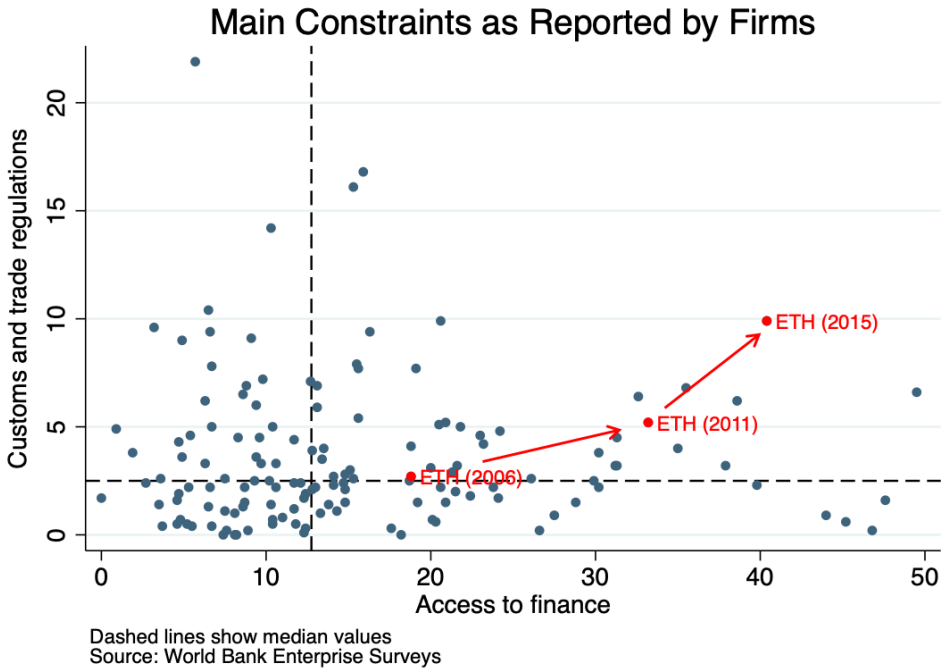
Looking from outside Ethiopia at systematic firm surveys, a keen observer might also be drawn to the constraint. The World Bank's Enterprise Surveys are a very useful first stop for understanding reported constraints and business practices across countries in a standardized way. By looking at responses in one country in comparison to relevant peers, one can identify key areas to be sure to test and start to quickly rule out other potential constraints as not binding. The latest Enterprise Survey for Ethiopia is from 2015, and the survey notably does not ask directly about foreign exchange. However, Ethiopian firms reported that "access to finance" and "customs and trade regulations" were their top constraint at rates well above the Sub-Saharan African average. The only other such constraint was "tax administration" but at a lower level. Finance and customs constraints were also increasingly reported across years (Figure 2.17, top). Yet, checking the diagnostic tests for finance overall and customs and trade regulations do not show strong signals of being binding.[9] Thus, firms may instead be reporting something more related to access to foreign exchange, but without a clear option to choose it. This would be consistent with a steady

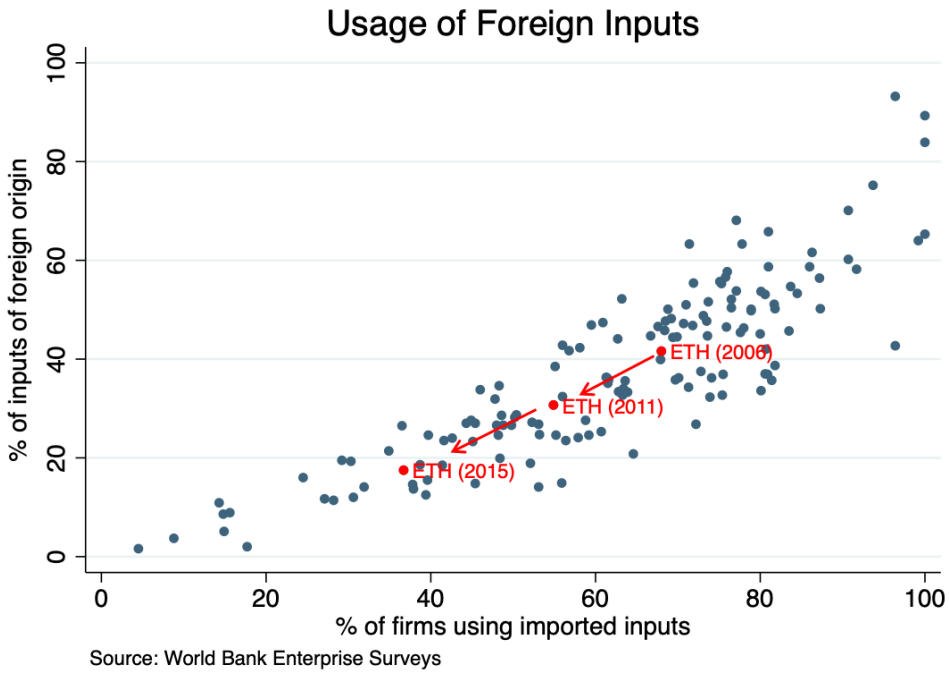
[8] Among these constraints that were tested, there were also numerous signals that electricity was a binding constraint for many types of production in many parts of the country. However, diagnostic tests showed this constraint was less widespread than the foreign exchange constraint.

[9] Ethiopia uses financial repression to channel financial resources to the public sector. However, the impacts of this repression on private sector credit have been offset by rapid expansion of the private banking system. In the period after 2015, credit availability to the non-SOE private sector grew substantially, in fact by much more than credit to SOEs. Credit from private banks grew from 30% of total credit in 2014/15 to 50% of credit in 2019/20 (NBE).

decline in the share of firms using foreign inputs and the share of foreign inputs used in production captured by the survey (Figure 2.17, bottom).

Figure 2.17: Indications of a Potential Foreign Exchange Issue from Enterprise Surveys





It turns out that foreign exchange (and thus the ability to import) shows strong signals across all four of the diagnostic tests.

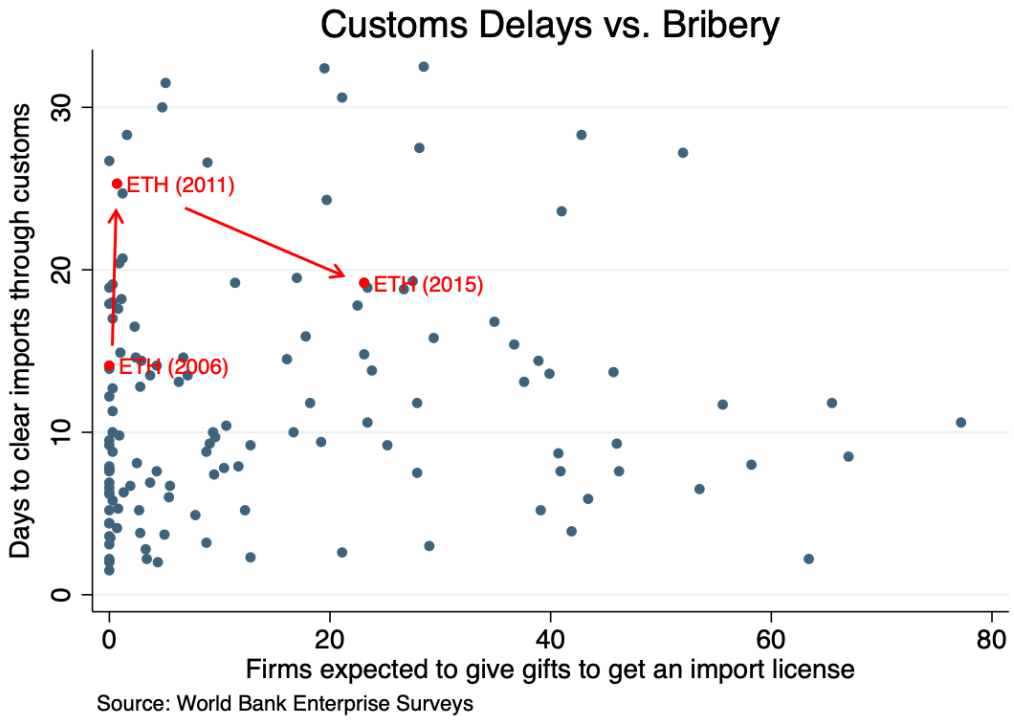
Test 1: Price signals confirm a major shortage of foreign exchange.

In addition to the widely reported problem of foreign exchange scarcity reflected in firm surveys, we can observe a price signal for foreign exchange scarcity in the black-market premium. The black-market premium reflects the gap between official supply and what the market is willing to pay and has reached a very high level (see Figure 2.15). Most economies do not have a significant black market for foreign exchange. This only emerges if supply is constrained in the official market for foreign exchange. All things equal, people will prefer to go to the official market for foreign exchange trough banks and other formal currency exchanges if the currency itself is available and accessible, rather than use an illegal market which will always entail some transactions costs. In Ethiopia, foreign exchange shortages have led to the creation of a black market, where firms are more than willing pay significant premiums for access to foreign exchange. The level of the black-market premium has fluctuated greatly at time — which it will do as official foreign exchange availability changes, the official exchange rate changes, other policies affecting the foreign exchange system are change, and expectations change — but prior to the COVID-19 pandemic, the black-market premium had reached a fairly steady range of 35-40% on average. After adjusting downward during the pandemic, the black-market premium has shown exceptional volatility over late 2021 and early 2022 (not shown due to lack of systematic data). During late 2021, reports of the black-market premium have reached a range of 60% to 70% at times.

There are also other signals that appear less as a "price" but also provide clear indications of a large gap between supply and demand. One is the time it takes to receive requested foreign exchange, if it is received at all, through the "queue" system administered by the NBE. Firms report spending a year or more in the queue, which the Growth Lab was able to verify using available data from the queue in partnership with the NBE in 2019. This analysis also verified that businesses tend to make requests through multiple banks in hopes of increasing their access and that prioritized categories of imports based on policy do not necessarily get faster or more reliable access to foreign exchange within the queue in practice. The binding nature of the "surrender requirement" in the foreign exchange rationing system, is also an indicator of the shortage. The surrender requirement requires that commercial banks exchange a share of the foreign exchange that arrives on their balance sheet for Ethiopian Birr with the NBE within certain periods. This mechanism guarantees that the government itself has foreign exchange access for things that it imports. Essentially, it is a way that the government itself bypasses the constraint. Like many mechanisms within the foreign exchange system, the details of this policy have been adjusted over time. The most recent update through directive FXD/73/2021, which came into force in September 2021, increased the surrender requirement on banks to 50% of their foreign exchange earnings.

More indirectly, price signals also show up in strange price dynamics in certain markets — like coffee — where traders pay a high local price to coffee producers and sell the coffee abroad at a loss. The business model is that this loss is worth it because it gives the company access to prized foreign exchange that it can make a profit on by essentially selling it back into the black market. The prevalence of trading companies like this that export and import are themselves a signal of a constraint. Other price signals that relate to this constraint may go as far as including a noticeable increase in delays in customs clearance for imports and then a sharp increase in the prevalence of bribes in order to secure an import license (Figure 2.18).

Figure 2.18: Indirect "Price" Signal of Constraint Relating to Importing



Test 2: The constraint has tightened as growth has slowed (and the constraint was relaxed when growth accelerated).

We can see not only a high price of scarce foreign exchange, but also an increasing price as growth has slowed. In other words, changes in this constraint align with changes in the growth process and the emergence of Ethiopia's growth problem. This is especially clear with the black-market premium, which started at a 10-15% in 2015 and rose over time to upwards of 40% prior to the COVID-19 pandemic. After a period of the pandemic where demand for imports fell somewhat, the black-market premium is now reportedly higher and more volatile than at any point over the last 25 years. This period is clearly very different from the years when growth first accelerated in 2003-2004. At that point in time, the black-market premium had been effectively eliminated for

several years. As can be seen in Figure 2.8, this was a rare period since the black-market premium had been extraordinarily high over the previous several decades where the economy failed to expand.

All of the other price signals noted for the first test have also intensified over the period since 2015. Wait times in the queue became increasingly problematic and the surrender requirement has become come to demand half of all the foreign exchange that flows into banks. Since 2015, the NBE has regularly updated many parts of the foreign exchange rationing system through foreign exchange directives. The NBE's website lists all such directives under a page on "foreign exchange management." It is noteworthy that the NBE issued seven such directives over the period 1998-2003, including a 1998 directive that transferred foreign exchange functions to commercial banks, and then no such directives for 10 years until 2013. Then, after two years of no directives, there have been 28 foreign exchange directives issued between 2016 and the first few months of 2022. Whereas the surrender requirement is one specific way that the government bypasses the foreign exchange, these many of these directives have tried to better channel scarce foreign exchange to parts of the private sector economy that are better to generate foreign exchange, though this has been generally a losing battle. Therefore, it is important to note that the constant changes to the foreign exchange rationing system on the margin have been more of a symptom of the systemic foreign exchange shortage rather than a cause of it. This is, once again, in contrast to when Ethiopia's growth accelerated. At that time, foreign exchange functions had recently been expanded to commercial banks. Today, a complex system of rationing rules has increasingly limited the agency of private banks to facilitate foreign exchange transactions.

Test 3: Import-intensive businesses have shut down (for long spells and permanently).

This is the "camels vs. hippos" test. There is widespread evidence of businesses closing due to the inability to access imported inputs. Some specific examples include two biscuit manufacturing companies (EIU, 2019) and a cable manufacturing company that had been operating at less than 40 percent of total installed production capacity due its foreign exchange shortage (Policy Studies Institute, 2019). Donor organizations that implement business development projects, such as USAID, find that this has become a ubiquitous problem. A 2022 survey of approximately 200 firms with import licenses about their import decisions that was recently implemented through a partnership between the Growth Lab and the Ethiopian Economics Association found startling evidence of the same. Nearly all these firms reported operating well below full capacity during the previous year. When asked their top constraint, nearly two-thirds of respondents responded foreign exchange (often by writing it in). The second most prevalent constraint was the conflict (13%) and the third most prevalent was COVID-19 restrictions (11%).

The escalation of foreign exchange shortages has also changed growth patterns. As noted above, businesses in Ethiopia report a dramatic decline in the use of imported inputs over time, according to the World Bank Enterprise Survey. In other words, the economy had been moving from foreign

exchange “hippos” to foreign exchange “camels” even before 2015. Since then, as wait times for foreign exchange extend over a year within the queue system, non-priority sectors have been unable to fully operate. To the extent that non-priority sectors cannot generate foreign currency, the rationing system has left these sectors unable to participate in growth due to the foreign constraint.

The import-dependent firms that have survived appear hold strong government ties or fall under special regimes to ensure priority access to foreign exchange. These segments of the private sector can exist as foreign exchange “hippos” due to their privileged access. Such firms include: SOEs, firms with strong relationships with government, firms located within industrial parks, and firms that have a “Franco Valuta” license. Significant firm-level data on this last group is not available, but there is clear evidence in the recent industry growth patterns of Ethiopia that SOEs and firms located within industrial parks — which are primarily foreign — have not faced the foreign exchange constraint with the intensity of those outside. It appears that businesses that fall outside of these systems face a different fate. Even pharmaceutical manufactures, despite being among high priority sectors for foreign exchange in the queue, have been forced to wait six months for access to foreign exchange (EIU, 2019). Foreign investors also bring in their own foreign currency to the extent allowed and thus express fewer complaints of foreign exchange constraints, however interviews suggest that even foreign investors view foreign exchange as one of their main constraints to operating in Ethiopia. The risk that firms will not be able to access their profits from abroad has loomed large on international investment decisions, ranging from manufacturing to solar energy generation projects involving the private sector, based on Growth Lab interviews over the last three years. This makes sense as any firm considering investing in operations in Ethiopia will see clear warnings and statement of risks from international advisory services and public investment climate statements like those published by the U.S. Department of State.

Test 4: Businesses (and government) are attempting to bypass the foreign exchange constraint through a wide variety of approaches.

In response to the intense and growth foreign exchange challenge, businesses find innovative approaches to bypass the constraint as much as possible. Box 2.2 lists several known ways that businesses in Ethiopia attempt to work around the constraint, often through informal and illegal means. Many in Ethiopia are willing to take the risks and pay the associated costs of these approaches, because it is much better to them than waiting, often indefinitely, in the back of the queue for access to foreign exchange to facilitate their import purchases. Where businesses have been able to survive foreign exchange shortages, firm managers have detailed a range of adjustments and workarounds to production, operations, and strategy, to mitigate foreign exchange uncertainties

Box 2.2: Creativity by Business to Bypass the Foreign Exchange Constraint

- The existence of the black market is evidence of firms bypassing the foreign exchange constraint as firms will turn to it at a higher cost than official and legal channels.
- Firms are using fewer imported inputs and fewer foreign inputs over time. Businesses have attempted to source inputs domestically. In Ethiopia, many inputs cannot be sourced locally or can be supplied only at a lower quality or at uncompetitive prices. Many businesses are not able to find the quality and reliability of local suppliers and choose to shut down.
- Requests for specialized licenses, like Franco Valuta have risen sharply, as firms attempt to benefit from the special access to foreign exchange that the regime provide
- Businesses often apply to as many local banks as possible to access foreign exchange, which requires them to bend or break formal rules of the system.
- Businesses have exerted pressure on officials through legal means and embassies to ensure access to foreign exchange.
- Firms divert remittances into accounts they hold abroad. Businesses use offshore third parties or diaspora-linked accounts to access foreign exchange. Large volumes of remittances are diverted to finance imports outside of official channels. A recent World Bank estimate finds 50 percent of remittances come through unofficial channels.
- Firms will secure an export license and export as third party to use the foreign exchange (or sell it at a profit) that they are able to retain from their export earnings. This has had significant impact on markets for some exported commodities, like coffee. Export prices for coffee in Ethiopia stand above the international price. The coffee is exported at a loss to the exporter, but this is the cost of quickly accessing foreign exchange, which is the real business purpose.
- Business owners travel abroad to purchase key inputs and pay steep import fines to have guaranteed access to inputs.
- Expectations of bribes for preferential access to foreign exchange are also reportedly on the rise.
- Patterns of trade in livestock and broader agriculture suggest much increased informal trade across borders with neighboring countries, which would allow for more free access to earned foreign exchange. A similar dynamic likely explained a collapse in official gold exports from production from small-scale gold mines.

In this case, the discussion above also shows how government has increasingly tried to act on system to help businesses bypass the constraint through the many directives of the NBE to adjust the system on its margins through changes to export retention accounts, diaspora accounts, and more. Moreover, the government itself relies on the surrender requirement to bypass the foreign exchange constraint to secure its own access to imports. This includes central control over fuel imports, many food imports, medicines, and fertilizers as well as imported inputs for public investment projects. Government has also, often, worked to crack down on illegal actions by individuals in the private sector to bypass the constraint through manipulations of the foreign

exchange rationing system, strategic price setting, and use of the black market itself. Given how extreme the foreign exchange shortage has become and the resulting incentives to find workarounds, this strategy has been and will continue to be ineffective. In some cases, by cracking down on many types of illegal and informal actions by the private sector, government is forcing the further loss of businesses and jobs that would follow all rules if there was a legal channel for them to access foreign exchange, even at a much higher exchange rate.

Growth diagnostic testing can often be challenging, with many competing signals across tested constraints. This is not the case in Ethiopia, where tests of the foreign exchange constraint show overwhelming signals that point in the same direction. Figuring out what to test can also be a challenge in many contexts. It is always worth testing common theories of what is causing a growth problem that have vocalized by local stakeholders — including the private sector and government — as well as by the international community. When common theories fail to explain the problem, which is often the case, it can be helpful to use a standardized diagnostic tree, like that introduced by Hausmann, Rodrik and Velasco (2008). But testing the rather general potential constraints in that heuristic tree can also lead to unsatisfying conclusions. For this reason, when applying growth diagnostics, it is helpful to be very open in what you test but to remain very principled in the use of the four types of tests. True constraints can sometimes fly below the radar of local stakeholders, who are so used to their economy working a certain way that they overlook ways that their system is unusual. True constraints can also be missed by international experts because they are often specific to a particular context and fall outside established focus areas of multilateral institutions or academic literature. As a paper on doing growth diagnostics in practice by Hausmann et al. (2008) quotes from the start of *Anna Karenina* in its introduction to the framework, "Happy families are all alike; every unhappy family is unhappy in its own way."

Many other countries in the world, and at many points in time, have been constrained by foreign exchange shortages. Yet, Ethiopia's current version of this constraint has many unique and distinct features. Ethiopia has a long-term challenge where the economy has not been able to generate sustainable sources of foreign exchange that can support the growth of imports that the economy requires as country grows from its very low level of per capita income. The growing economy requires imports from the rest of the world for many products that are not produced in Ethiopia or produced in the quality demanded as inputs to production. This challenge can be — and was — overcome in the short-term through aid and external borrowing as key sources of foreign exchange. However, as these sources have reduced in comparison to need, growth has slowed. In Ethiopia's case, this growth slowdown has introduced or intensified many feedback loops that have made the long-term challenge of more diversified export growth harder to achieve and led to increasing macroeconomic problems, centering on the black-market premium, high inflation, and debt sustainability challenges. The next section proposed a way of thinking about the growth syndrome that makes this constraint persist and frames the remaining chapters that follow.

What is the Growth Syndrome?

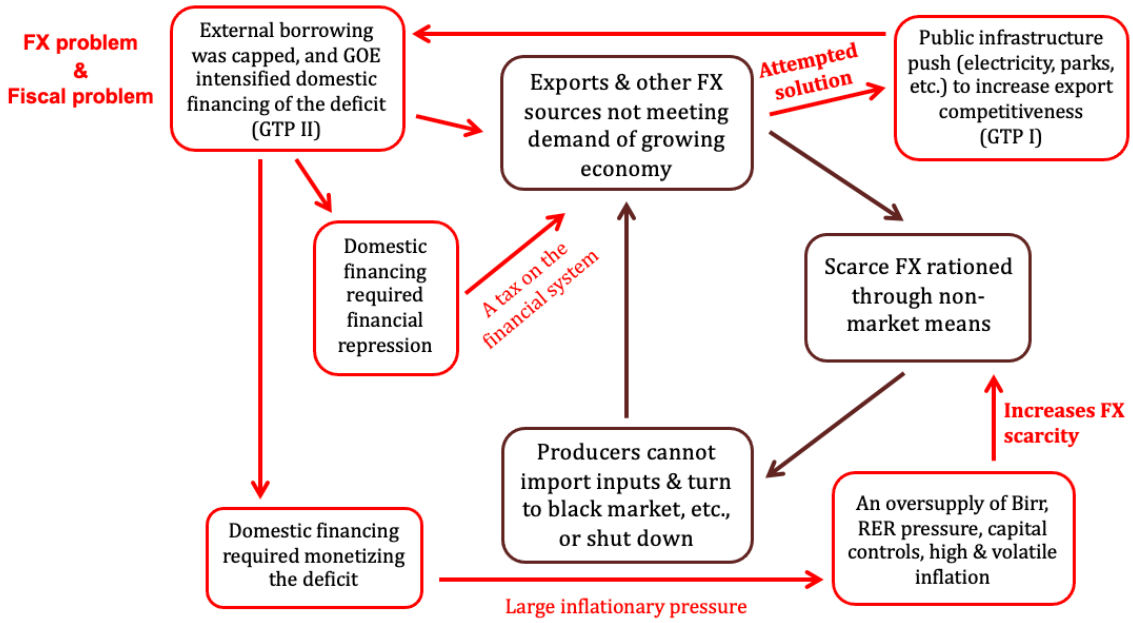
At its heart, Ethiopia faces a problem shared by many low-income countries. It does not produce and sell competitively many goods and services that the rest of the world demands. As will be discussed in Chapter 4, its "economic complexity" is low. Yet, a growing Ethiopian economy demands all sorts of things and must import many of these from the rest of the world. No country produces the same things that consumes and uses — neither highly diversified economies like the United States or now China nor very isolated countries like North Korea. In fact, the more that economies grow and living standards improve, the more imports are demanded. This may be obvious to many readers, but it may not be for some, as there is a common belief in many developing countries that import substitution is a necessary path to growth as well as to food security. This could not be further from the truth. China provides a good case in point. In 1990, China's imports amounted to around $150 billion (with around $11 billion in food imports), and by 2019 China's imports amounted to almost $2.6 trillion (with almost $60 billion in food imports). These figures are provided in constant (inflation-adjusted) dollars, and this means that China's imports have grown by more than 10% per year on average and its food imports by 6% per year on average. Growth means — in fact requires — growth in imports. While import substitution can be a narrow tool for industrial policy that supports the emergence of some industries if done wisely and strategically, it will never be a path to balancing a large trade deficit in an effective way.

This point is made to emphasize that the problem in Ethiopia is *not* that it imports too much. Ethiopia's import bill does little to explain why the growth problem persists. Ethiopia's successive five-year Growth and Transformation plans have aimed to overcome the fundamental challenge of sustainably growing exports by expanding the competitiveness of the economy, including through large and coordinated public investment efforts to expand productivity. These strategies recognized that exports would have to expand beyond agriculture and the success of Ethiopia's agriculture development in the 2000s if rapid growth was to be sustained. After rapid growth since 2004, GTP I and GTP II focused on improving many key development outcomes and, importantly, on transforming the drivers of the now-larger economy through the 2010s. Many of the key development outcomes were strong over the GTP period, but the manufacturing and export goals were fleeting. Ethiopia has continued to see growth, but very little transformation. As we have established, growth is increasingly under strain along with this lack of transformation. It is clear that this slowdown is *not* the result of a pullback in public investment, which has remained high. Rather, foreign exchange is the binding constraint within the system. The Ethiopian economy generates too little foreign exchange, and a key source of foreign exchange has been lost as external borrowing had to be reined in since 2015. Unfortunately, both growth and macroeconomic problems have intensified over this time, even before the emergence of COVID-19 and later military conflict in Ethiopia in 2020.

Figure 2.19 provides a visual representation of this whole problem in an effort to better understand why the foreign exchange persists. Presenting the evidence as a syndrome that explains the why

the constraint remains in the system, and where it comes from, can enable policy approaches and other actions to solve the growth problem. In this case, overcoming the problem will require new approaches in the macroeconomic policy space (Chapter 3) — which will require international support — and new approaches to overcome the long-term diversification challenge (Chapter 4) — which will require new connections in investment and trade with the rest of the world. Figure 2.19 presents two layers of the syndrome: an inner vicious cycle that describes the long-term challenge and an outer vicious cycle that summarizes how interacting macroeconomic distortions have undermined progress toward breaking the inner cycle.

Figure 2.19: A Growth Syndrome with Two Layers Explaining the Foreign Exchange Constraint



Source: Own construction

One can start by reading this diagram in the middle-top and follow the feedback loop in the darker red color. Ethiopia has long faced a challenge where its exports and other sources of foreign exchange do not fully meet the import demand of the growing economy. This is a problem faced by many poor countries and usually results in an exchange rate that makes imports expensive and thus rations foreign exchange through a market mechanism. In Ethiopia, the exchange rate is not set at a level that clears the foreign exchange market and instead scarce foreign exchange is rationed through non-market means. The foreign exchange rationing system is complicated and somewhat unpredictable — given frequent updates through NBE directives — but essentially gives first access to foreign exchange by the government, SOEs, and select parts of the private sector at a relatively cheap price versus willingness to pay. However, there is not enough foreign exchange to go around and thus many producers (and consumers) are not able to access imports that they need, including imported inputs to production, capital goods for expansion, spare parts, and more. These businesses and individuals turn to the black market — a recurring phenomenon in Ethiopia

— or try to find other ways to access foreign exchange, or simply shut down. Since the targeting of scarce foreign exchange to exporters through the system is far from perfect and because the uncertainties of the system disincentivize new investment, this foreign exchange rationing ends up constraining better export growth and diversification, thus deepening the challenge of foreign exchange generation.

This whole problem captured by the inner feedback loop had been relaxed at the start of Ethiopia's growth acceleration but started to re-emerge in Ethiopia around 2008 at the time of the Global Financial Crisis, regional drought, and global price shocks. This precipitated a new strategy to overcome the recurring problem through the large public infrastructure push that defined GTP I. There were some signs of success in this strategy, particularly as industrial parks and electricity jumpstarted a potential new engine of export growth in garments.[10] This emergence was relatively small in scale but mirrored the export diversification path that many countries have followed in the past, starting with garments which is a relatively labor-intensive and low-technology industry where there is a large degree of foreign investment in lower-income countries. However, this process remains rather nascent today with lower scaling than in the past due to both Ethiopia-specific factors, which limit the industry to a few places in the country, and an apparent shift in the technology-intensity of this industry. Many areas of the public investment push did not generate strong early economic returns as expected, including rail and light rail, and the public investment at such a large scale included many examples of low-quality investment due to both design failures and due to implementation shortfalls. Debt sustainability dynamics very quickly became problematic, but only on the external margin of debt and debt payments to exports. This risk was perhaps predictable given the scale of investment and ambitious assumptions for how fast exports would grow in response to the strategy, but it happened so fast because many SOE projects had poor fundamentals yet required substantial external borrowing with little oversight and control by the Ministry of Finance. Whatever the cause and regardless of the arguably inappropriate indicators used to assess risk, the emerging debt sustainability concerns led to reduction in the government and SOE's use of external borrowing, first by ending new non-concessional loans and then reductions in concessional access as well. This kicked off the outer feedback loop captured in Figure 2.19.

As Ethiopia made this adjustment in external borrowing over a few years, it required the cancellation of many envisioned public investment projects, including a national rail network, but many other projects continued and the overall level of investment of a share of GDP was

[10] The growth diagnostic tests, in fact, point to electricity access being a significant constraint, particularly for manufacturing. The direct cost of electricity in regulated tariffs is low but the cost of outages is much higher and manufacturing firms reported electricity at a high and increasing rate in the World Bank Enterprise Survey (but not firms overall). Firms also bypass the constraint with high and increasing use of generators and seeking out industrial parks where possible. Electricity also shows a positive signal based on the "camels vs. hippos" test. But notably, electricity does not show a positive signal of "changes vs. changes" since growth electricity expansion and system performance does not correlate with the growth acceleration of the 2000s or the deceleration recently. Electricity access has instead expanded while growth has slowed.

maintained. Thus, even though expenditures were adjusted, the government continued spending beyond its means throughout GTP II. The difference from before, however, was that the overall public sector fiscal deficit was no longer finance by external borrowing but instead required greater domestic financing. The reduction in external borrowing meant an immediate foreign exchange gap — which was not necessarily recognized by policymakers or international financial institutions — because the focus was more on addressing a fiscal problem. Domestic financing has come in two types. One is financial repression, which is ultimately about forcing savings of Ethiopians that is paid negative real interest rates (i.e., the nominal interest rate below the rate of inflation). This is done through banking regulations that keep deposit rates low as well as through a several types of low interest government bonds that Ethiopians are required or encouraged to buy. One example of this is the Grand Ethiopian Renaissance Dam (GERD) bond, which government employees were strongly encouraged to buy with a large amount of their salaries. Since financial repression acts as a tax on the financial system, this presents a drag on financial system expansion and thus negatively affects the private sector. However, diagnostic testing on access of finance suggests that this is not a particularly binding problem.[11] In fact, the financial system has been expanding very rapidly in Ethiopia with more growth in lending to the private sector than to government and with increasing financial inclusion across society. There is plenty of local currency to lend, but not foreign currency. In 2019, one important channel of financial repression was removed, when the government no longer required that private banks invest 27% of their loan portfolio in government bonds at a fixed interest rate (negative in real terms), the so-called "27% rule" that was designed to finance the state-owned Development Bank of Ethiopia.

The other channel of domestic financing, which is ultimately more important in the syndrome, is through monetizing the deficit. In its simplest form, this means printing money. In practice this includes NBE advances to the Ministry of Finance and well as capitalization of SOEs through NBE loans to the state-owned Commercial Bank of Ethiopia, which then provides loans to SOEs. As will be discussed in Chapter 3, there or more indirect ways that this has happened not through an increase in base money (M0) but through treasury bill purchases by the banking system leading to an increase in broad money (M2). In all cases, this amounts to inflating away the cost of borrowing. This dynamic of money growth and inflation has intensified the challenge of achieving foreign exchange balance because it amounts to an oversupply of Birr in relation to dollars. This could, in theory, be addressed through faster devaluation of the official exchange rate, but in

[11] Even though there is a large degree of financial repression in Ethiopia, there has been a rapid expansion of finance to the private sector beyond just SOEs. There has also been rapid expansion in bank branches and access by more people and more parts of the country. This has continued, and even accelerated, as growth has slowed. The price of finance in Ethiopia is also very low in real terms and there is no correlation between changes in the real interest rate and changes in private investment. There is, however, evidence that access to finance is more problematic for smaller firms, based on differential responses in the Enterprise Survey by firms of different sizes and over the three available years of the survey (2006, 2011, 2015) where small farms (with 5-19 employees) have reported access to finance as their biggest constraint in increasing numbers but medium-sized firms (with 20-99 employees) have not. This may have to do with fees charged by banks given that their ability to profit from the spread between lending and deposit rates is low, and collateral requirements that banks apply to manage risk.

practice Ethiopia's exchange rate policy of a crawling peg is out of line with the monetary changes. Consequently, the foreign exchange system must ration even scarcer foreign exchange and systems of capital controls must remain in place. As shown in the figure, this is another way that the outer loop of macroeconomic issues feeds back into the inner problem — and this channel appears to be much more important for intensifying the inner cycle than financial repression.

So, what does this growth syndrome mean for current policy in Ethiopia and for the future? For one thing, it means that sustaining high growth, rapid poverty reduction, and convergence with middle income countries will require effective strategies to address the outer part of this syndrome — which is a challenge of macroeconomic realignment amidst multiple distortions — and new approaches to accelerate and strengthen the diversification of exports to address the inner problem. These topics are discussed in the next two chapters. Presently, the Government of Ethiopia is implementing its newer Homegrown Economic Reform (HGER) strategy, launched in 2019 and supported through an IMF support program.[12] This strategy aims to address the weaknesses that emerged during GTP II based on the government's own assessments of what went wrong and theories of change for how to fix the problem. Chapter 5 takes a detailed look at implementation progress of HGER, as of 2021, and identifies strengths and weaknesses in the design and implementation of the reform program with an eye for what can be improved to achieve success in tackling the growth syndrome that has been described here. Since the launch of HGER, Ethiopia has faced significant shocks that were not anticipated and thus not built into plans. These have included the COVID-19 pandemic and its global economic impacts, followed by military conflict between the Government of Ethiopia and the Tigray People's Liberation Front (TPLF) and other breakaway factions, as well as severe drought that has spread across three rainy seasons. Each of these shocks continues to be unresolved as of writing in 2022. Thus, this chapter closes with observations on how each of these interacts with the growth syndrome.

How Have COVID-19 and Conflict Affected the Growth Syndrome?

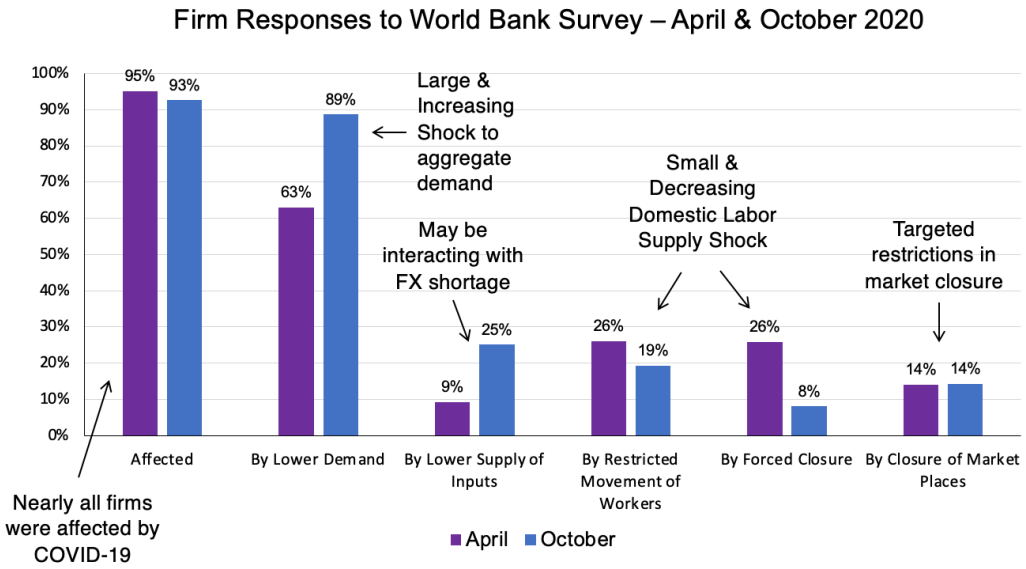
Since the foreign exchange constraint and the growth syndrome summarized by Figure 2.19 were already in place prior to the COVID-19 pandemic, it is useful to ask to what extent the impacts of the pandemic changed the constraint and syndrome. In 2020, during the first year of the pandemic, growth slowed to around 6%. In comparison to the rest of the world, this was a very high growth rate for a year with widespread lockdowns across countries and border closures to try to contain the spread of the virus. This led to sharp recessions in most of the world and unprecedented shocks to global supply chains and global air travel. Amidst all of this, most countries registered contractions in their GDP in 2020 versus 2019, often very large contractions. Ethiopia, by contrast, saw growth tick down a few percentage points and remain firmly positive.

[12] See "IMF Country Focus: Six Things to Know about Ethiopia's New Program" (December 23, 2019) <https://www.imf.org/en/News/Articles/2019/12/23/na122319-six-things-to-know-about-ethiopias-new-program>

For much of the world, COVID-19 created an acute supply shock, as many people could not go to work, but over time the virus led to a variety of demand shocks on economies as consumption patterns changed. In many developed countries, enormous amounts of fiscal stimulus were used to help people and firms get through the difficult period, which supported local demand overall. Household spending at this time tended to demand more goods of various kinds but fewer services, especially those that involved in-person contact. Globally, rebounds in overall economic growth tended to come quickly in the second half of 2020 and into 2021, led by the recovery of goods. The return of services was highly non-linear and was affected by waves of the virus and new variants of COVID-19. At the time of writing in late 2022, the direct impacts of COVID-19 on most economies have reduced significantly, but the supply chain impacts of COVID-19 as well as significant changes in many labor markets continue to have lasting indirect effects.

For Ethiopia, unlike much of the world, COVID-19 initially manifested much more as a demand shock. This is captured by Figure 2.20, which reflects results from a rapid phone survey of businesses in Ethiopia that was conducted by the World Bank. Based on these surveys, in both April —the first month of the COVID-19 pandemic — and in October, nearly all firms reported that they were affected by COVID-19. Both initially, and increasingly over time, firms reported that they were impacted by lower demand for their goods and services. Forced closures and restrictions on worker movement were a less prevalent and declining source of stress on businesses in 2020. Access to inputs started out as a low problem reported by firms and increased along with weak demand over the period of April to October 2020. This issue likely interacts with the foreign exchange constraint. When looking back at the dynamics of the black-market premium (Figure 2.15), the premium shifts downward with the onset of the pandemic but begins to rise back to pre-pandemic levels in the last quarter of 2020.

Figure 2.20: Interpreting COVID-19 Shock Based on Two Waves of Business Surveys



Source: World Bank Firm COVID-19 Monitoring Survey

For the entirety of the pandemic, case counts and deaths from COVID-19 have been low in Ethiopia. While official counts undoubtedly fall well short of the actual health impacts of the virus, the positivity rate of tests and other indicators together capture an overall pattern where waves of the virus were of lower magnitude and arrived later in Ethiopia than in Africa as a whole. This is even as Africa overall has also seen a much lower death toll than other regions of the world — a phenomenon that is only partially understood. Over much of the first year of the pandemic, Ethiopia's response measures to control the spread of the virus were highly adaptive. As captured by the Oxford COVID-19 Government Response Tracker, Ethiopia's stringency on COVID-19 spread was updated throughout the year 2020 as information became available and risks changed. Ethiopia never implemented a lockdown as complete as many other countries and instead implemented measures that amounted to high containment from March to September 2020. As new waves emerged, authorities adjusted early but in measured ways. However, this adaptation in containment policies largely ended in early 2021, as Ethiopia's stringency remained unchanged thereafter, even as various variants, including Delta and Omicron, emerged and drove global waves of infection and as vaccination rates in Ethiopia remained extremely low.

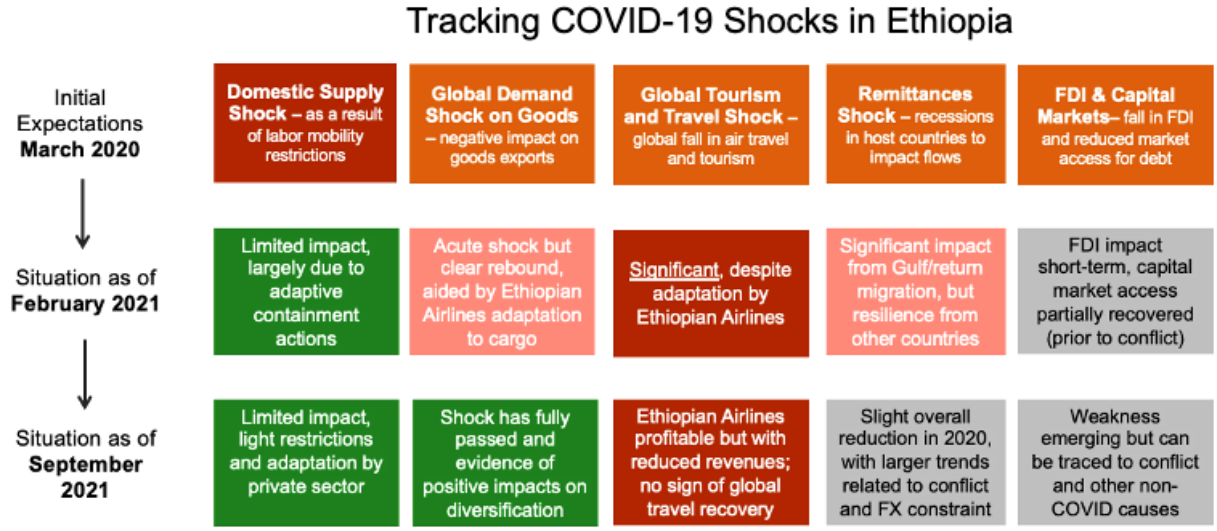
The direct toll of COVID-19 on the health of Ethiopians has been relatively small by all accounts. To get a sense of the evolution of COVID-19's impact on society, one can also look at Twitter hashtags commonly used in Ethiopia and public Google Trends data over time. Both point to "covid" and "corona" hashtags and searches surging in March-April 2020 and then falling over the rest of the year. Google searches largely stabilized for "covid" over 2021, with rises in searches coinciding with rises in case numbers and confirmed deaths from COVID-19. Throughout 2022, search traffic for "covid" was at its lowest level since the start of the pandemic.[13] The economic toll of COVID-19 on the health of the Ethiopian economy has to date been relatively small. We at the Growth Lab tracked key channels of economic impact over time in Ethiopia versus our initial expectations, which turned out to be quite wrong. Figure 2.21 summarizes our tracking of COVID-related shocks in Ethiopia from the start of the pandemic through September 2021.

At the start of the pandemic, we expected that Ethiopia would face a major supply shock, like most other countries, as human mobility was restricted. However, over time, it became clear that this was a small and short-lived channel of impact in Ethiopia, due to both adaptive containment policies and low exposure of the Ethiopian economy to mobility restrictions. We also expected other channels of impact at the start of the pandemic, as shown in the top row of the figure. The global demand shock on goods exports and the shocks to remittances, FDI, and access to capital markets had a short-term impact during the first year of the pandemic, but each of these impacts were less severe than expected by late 2021. In fact, there is evidence that the pandemic helped to boost goods exports and spurred some diversification of firms into producing personal protective equipment, hand sanitizer, and other items where global and regional demand increased.

[13] One can check search patterns in Ethiopia or in other countries for any combination of search terms using https://trends.google.com.

Meanwhile, the dynamics of remittances, FDI and capital market access likely had more to do with intensifying conflict in 2021 as well as the Government of Ethiopia's approach to debt restructuring.

Figure 2.21: Tracking of COVID-19 Shocks to the Ethiopian Economy



Source: Own construction

There is one exception to the trend of lesser impacts than anticipated, however, in the global shock to air travel and tourism. This resulted in a large shock to Ethiopian exports and foreign exchange generation due to the outsized role of Ethiopian Airlines in Ethiopia's total exports. Prior to the pandemic, transport exports alone represented almost half of Ethiopia's total export value, and nearly 60% of Ethiopia's exports when combined with travel and tourism. Despite rapid adaptation by Ethiopian Airlines to deal with dramatically reduced passenger traffic and maximize its role in moving goods, including medical supplies and PPE, foreign exchange generation through transport exports faced a major shock. Global air travel in 2020 was a small fraction of a normal year and air travel recovery in 2021 was limited, with less than 50% of typical passenger travel. In 2022, though, global air travel continued to recover. By June 2022, international air travel in Africa was around one-third lower than pre-pandemic levels in terms of passengers and total kilometers (IATA). This improvement has been important for Ethiopia's foreign exchange generation. Estimates are that service exports in the Ethiopian year of 2020-21 barely surpassed the level they were in 2018-19 (in USD terms), but that they were projected to have grown by upwards of 20% in 2021-22 (Cepheus Growth Capital Partners, August 2022).

In total, COVID-19 did not change the nature of the binding constraint to growth or Ethiopia's growth syndrome. But importantly, the pandemic worsened the challenge of foreign exchange generation through the channel of transport service exports. For many countries, COVID-19 has been one of the largest economic shocks they have ever faced, but for Ethiopia, it is not even the

largest shock of the last two years. In late 2020, active military conflict began between the national government and the regional government of Tigray led by the TPLF. Given the overwhelming importance of this conflict at the time of writing, this chapter would not be complete without discussing the relationship between conflict and Ethiopia's growth syndrome.

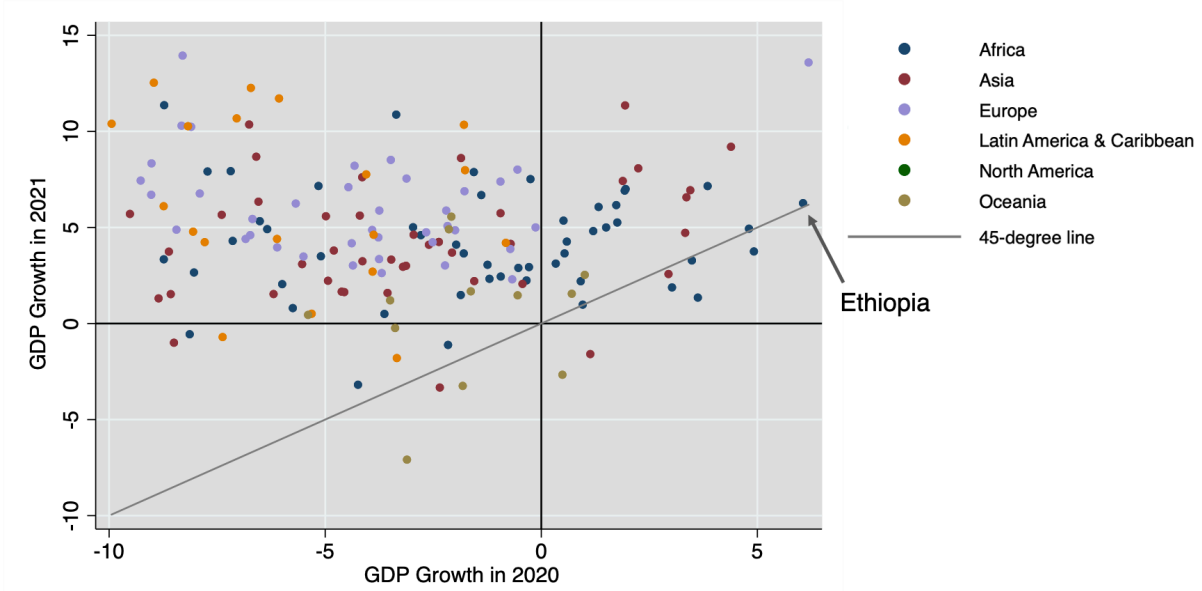
As of October 2022, the conflict has a major issue in Ethiopia for almost two years, though dynamics have evolved over time. After a brief initial phase where the national government declared victory and ceased hostilities, the conflict expanded in 2021 to include additional factions and spread into neighboring regions in the north of the country. Throughout the conflict, both warring parties have been responsible for numerous human rights abuses and potential war crimes, which have been widely documented by media sources and human rights groups. The amount of human suffering that has resulted from the conflict and from lack of access to food and other necessities has been tragic. In late 2021, the TPLF-led forces had gained significant territory and threatened to march to Addis Ababa, but the military momentum changed thereafter, reportedly due to new weapon availability for the national government. In early 2022, after having pushed the battlelines back to the border of Tigray, a "humanitarian truce" was declared by the national government and subsequently agreed to by the TPLF. This period lasted more than four months until fighting resumed in force in August 2022.

To establish a rough timeline for how interest in the conflict changed over time in comparison to interest in COVID-19 by Ethiopian society, Google search data again provides valuable clues. Google searches of "Tigray" peaked in Ethiopia in November 2020 but then remained below searches of "covid" for the first half of 2021, before rising above for the second half of 2021. This suggests that COVID-19 may have been a larger initial concern for most Ethiopians, but this changed in the second half of 2021 even as the Delta and Omicron variants emerged and spread worldwide. In the first few months of 2022, Google searches of "covid" and "Tigray" both trended downward. In February and March 2022, Google searches for "Ukraine" were much more common in Ethiopia than either of these terms. But this changed in August 2022, as "Tigray" became a much more common search again.

Economically, this transition from a COVID-19 shock in 2020 to a conflict-driven shock in 2021 can be seen in estimates of economic growth. Figure 2.22 shows growth rates in 2020 and growth rates in 2021 for all countries by the IMF. Ethiopia is one of few countries in the world where projected growth in 2021 was at or below growth in 2020 (i.e., on or below the 45-degree line on the graph). Most countries are in the top, left quadrant, with a contraction in GDP in 2020 but a rebound in 2021. Ethiopia had the second fastest growth in 2020 but was projected to be in the lower half of countries in terms of economic growth in 2021. This suggests that the conflict has been potentially a larger shock than COVID-19. The conflict has undoubtedly amounted to a supply disruption for areas where fighting was concentrated, destroyed significant infrastructure, and disrupted economic life in many ways. Yet, the most intensive economic impacts likely continue to operate through the growth syndrome of Figure 2.19. In the shorter-term, the key shock

to foreign exchange that has resulted from the conflict is a loss of international aid, as grants and loans from numerous bilateral and multilateral donors have been put on hold in response to reported human rights abuses. These grants and loans play a critical role in supporting imports, especially given the simultaneous shock of COVID-19 on service exports.

Figure 2.22: Growth in 2021 vs. Growth in 2020 across Countries



Source: IMF WEO

As evidence of conflict impacts working through growth syndrome, the black-market premium for foreign exchange has been, by all accounts, exceptionally volatile in the second half of 2021 and into 2022. Under conditions of increasing foreign exchange scarcity, the NBE increased the surrender requirement to channel first 50% of foreign exchange to the government in September 2021 and then 70% in January 2022. Response measures continued to evolve thereafter. Furthermore, with the collapse in external fiscal support at a time when the conflict has demanded additional government expenditures, there is little doubt that monetization of the deficit has increased. This is having a large impact on inflation, which was already higher than desired, and this impact will continue due to the time lag in monetary transmission. Monetary advances from the NBE to the Government continued through 2022. On top of this, Ethiopia faced still more inflationary pressure due to the Russian invasion of Ukraine, which has impacted prices of fuel, wheat, and other imports.

Growth estimates varied greatly for 2021, though officially reported growth was nearly 6%. The same is true for projected growth in 2022. The IMF — as of October 2022 — projects a continued slowdown to 3.8% growth even as 2022 saw the most limited economic impacts of COVID-19 since the start of the pandemic. This fall in growth over a few years has been brought on by the conflict, but it is rooted to the fundamental issues of the growth syndrome. In some ways, the

situation today parallels that which Ethiopia faced prior to the growth acceleration in the early 2000s. If this conflict can be resolved, Ethiopia will need several things to come together to achieve a sustainable post-conflict growth acceleration. First, the macroeconomic constraint of short-term foreign exchange availability will need to be lifted, and this requires tackling the entire outer vicious cycle of the growth syndrome in Figure 2.21. If external borrowing or grants cannot be secured, the economy will struggle to grow, and inflation will remain problematically high so long as financing of the deficit requires monetization. Yet securing this external support requires not only a strong peace process but also a viable strategy to close the overall fiscal deficit over time to fundamentally address debt sustainability risks. If this short-term macroeconomic pressure can be lifted, newfound fiscal and foreign exchange space must still ultimately result productivity growth, or the benefits will be short-lived. This was achieved in the 2000s with coordinated investments resulting in agriculture productivity growth. However, for a post-conflict growth acceleration to be more sustainable today it must accelerate more robust export growth this time around, which must come from more diversified sources of production, likely across sectors.

III. Macroeconomic Diagnostic

The preceding chapter discussed Ethiopia's challenge of slowing growth with a focus on understanding changes in the growth process and diagnosing what drives the problem. The growth syndrome we have introduced includes a critical layer of macroeconomic imbalances and distortions (the outer cycle in the syndrome), which undermines any progress in resolving the long-term challenge of achieving more robust and diversified export growth (the inner cycle of the syndrome). Many complexities of the macroeconomic system were left out of the preceding chapter to focus on the growth problem itself. This chapter, by contrast, focuses on understanding the macroeconomic system, in more of its rich complexity, to understand how distortions in the system interact and why certain macroeconomic problems — like high inflation and the black-market premium — persist.

This macroeconomic diagnostic has a similar structure to the growth diagnostic. We first must define what the key macroeconomic problems are. Here we are not necessarily limited to macroeconomic problems that matter for growth, but rather we are concerned about issues that matter for society overall. We will argue the two main macroeconomic problems that are affecting businesses and households are the foreign exchange imbalance and high and volatile inflation. After diagnosing the central causes behind these two imbalances, we then must describe how the macroeconomic system works and how the system has changed over time. This will allow us to identify the deeper and more systemic causes behind important macroeconomic problems and identify how the macroeconomic imbalances constitute a self-sustaining equilibrium that makes solving the challenges difficult.

We will see that within this system, which is built upon multiple interacting distortions, actions to address one distortion without a good understanding of the impacts this will have on others, can often deepen the initial problem. Recent history of macroeconomic reforms in Ethiopia provides several examples of this playing out in practice. Thus, careful sequencing of macroeconomic strategy changes is important. This is especially true amidst multiple and severe shocks that face Ethiopia at the time of writing. This chapter will ultimately inform necessary actions to address the outer cycle of the growth syndrome. In other words, the combination of actions that will be needed to relax the foreign exchange constraint in the short term, but in a way that is sustainable in the medium- and long-term. This is a necessary condition to making sustainable progress on addressing the inner cycle, which will be the subject of the next chapter.

Identifying Key Macroeconomic Imbalances and Government's Role

Let's leave aside the problem of slowing growth for a moment and ask what is going on with the macroeconomic system. By "macroeconomic system," we are referring to the aggregate economy and the features and policies that define it. This is a system within which all the microeconomic decisions of businesses and consumers take place, but no single microeconomic decision can fundamentally change the macroeconomic system. To understand the behavior of the macroeconomic system, we will want to understand such things as the supply of money that gets circulated through the economy, how the supply of money has changed over time, the ways that the financial system intermediates the exchange of money and the saving of money, balances between what the economy exchanges with the rest of the world, the roles that the government plays in taxing and spending, and the debts that are amassed by different parts of the economy and by the government itself.

As one can tell from reading the above list alone, the macroeconomic system is not something that naturally remains in balance on its own. In fact, it is the role of macroeconomic policymakers to monitor and manage these aspects of the economic environment such that markets can function in a relatively stable environment. In effect, the job of macroeconomic policymakers is to prevent macroeconomic imbalances as the government at large pursues various objectives (e.g., in the realms of economic growth, justice and education). Meanwhile, the macroeconomic forces in question naturally change over time and can be particularly strong when the economy is growing and changing rapidly. What are the key imbalances that have become pain points as the economy has grown over the last two decades? What are the problems in the system that have made the continuation of rapid growth unsustainable, even before the shocks of COVID-19 and conflict?

The previous chapter introduced the intense challenge of external balance for Ethiopia. As the economy has grown rapidly, the country's balance of payments increasingly relied on borrowing from abroad, which eventually led to a challenge of debt sustainability. As the government has worked to maintain fiscal sustainability by reducing foreign borrowing, the supply of foreign exchange in Ethiopia tightened, while factors that lead to foreign exchange demand (i.e., private sector growth opportunities and growing household demand, excess money printing, and the nominal exchange rate not being set at the market-clearing level) remained strong. This has led to the worsening of the external balance. In other words, the country has experienced significant losses of the central bank's net foreign exchange reserves, which stand in negative territory at the time of writing. Normally, in countries with a fixed exchange rate excess demand for foreign exchange is cleared with the central bank's reserves. However, in Ethiopia central bank reserves are not large enough to do so completely and foreign exchange is rationed. This is manifested in the phenomena of Ethiopia's stubbornly high black-market premium. Box 3.1 provides some technical background on the balance of payments and foreign exchange for readers who would like to dive deeper into the theoretical underpinnings

Box 3.1: Balance of Payments and the Market for Foreign Exchange

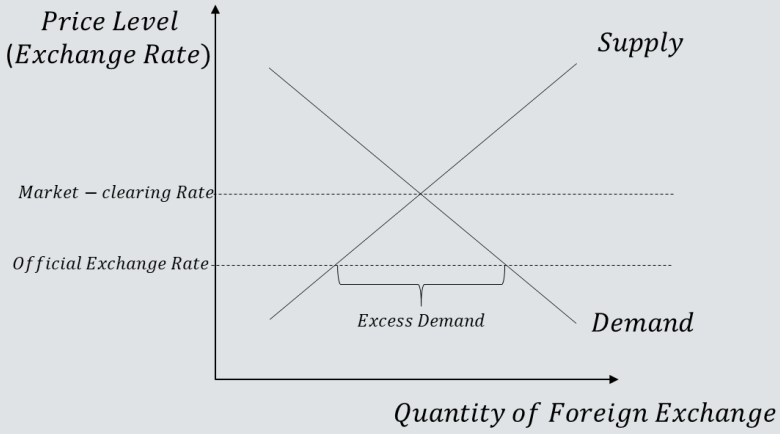
Balance of payments is a statistical record capturing a country's transactions with the rest of the world. It captures the market for foreign exchange in a country (or any economy for that matter). When one country sells goods or services to the rest of the world or borrows from abroad that adds to the supply of foreign exchange in the country. Let us briefly review the balance of payments identity:

$$CA + KA = ORT = BP$$

where CA stands for the current account, KA stands for the financial account (older sources refer to the capital account, which is a terminology used today to capture a different and small set of transactions), ORT stands for official reserve transactions and BP stands for balance of payments.

Every positive entry (credit) in CA or KA denotes a transaction that adds to the supply of foreign exchange in the domestic market while every negative entry (debit) denotes a transaction that constitutes demand for foreign exchange and takes exchange away from the domestic market.

Consider the following graphic representation. The exchange rate is the price of foreign exchange (here it is defined as the ETB price of one dollar) is on the vertical axis. The horizontal axis captures the quantity of foreign exchange. Like other normal goods, supply of foreign exchange will increase when its price (exchange rate) is higher. More people will be willing to convert their dollars into Birr if the payoff in Birr is larger. Similarly, demand will slope negatively. When the Birr is less valuable, imports that are priced in dollars internationally will now be more expensive in Birr. Since they become less affordable, there will be fewer imports and thus less demand for foreign exchange.



As seen in the graphic, when the price of foreign exchange is set at a level below the market-clearing exchange rate, this results in excess demand for foreign exchange. Excess demand is another way to say the balance of payments is negative and in deficit. At this price level, there is more demand for foreign exchange than there is supply for it. In countries with a fixed exchange rate, the government guarantees the fixed rate by being the seller of last resort and this entire excess demand is covered by ORT. That is, reserve losses cover the balance of payments deficit. In Ethiopia, this excess demand is not entirely covered by ORT. Instead, the government rations foreign exchange to artificially restrict the demand for it. However, it is unable to shift the demand curve all the way to the left to clear the market for foreign exchange. Instead, some of the excess demand is covered in a black market, where foreign exchange is sold at a rate that is higher than the official one.

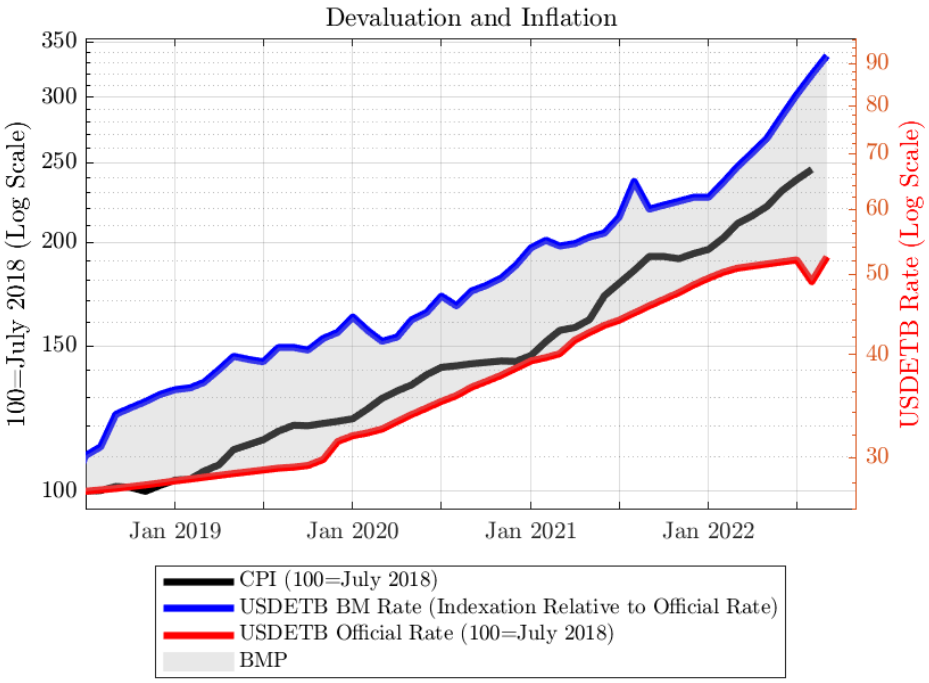
The foreign exchange imbalance has real and profound costs for businesses and for Ethiopian society broadly as the resulting slowdown in the growth process has undermined gains in wellbeing. But this is not the only macroeconomic problem that policymakers in Ethiopia have struggled to manage under rapid growth. This macroeconomic diagnostic must also respond to the problems that policymakers and citizens struggle with, perhaps even more than the foreign exchange shortfall and corresponding black-market premium.

If you were to ask regular Ethiopians and policymakers what their biggest macroeconomic challenge is in 2022, you would likely hear less about the black-market premium and more about inflation. The rate of inflation has been growing over the past several years and has been consistently more than three times the target of 10% per year over much of 2022. This rate of price increase erodes the purchasing power of many Ethiopians and is highly regressive in that it affects lower-income households more than higher-income households who can more easily absorb price increases. Though some Ethiopians are seeing rapid wage growth well above the rate of inflation, many households are not seeing their income sources grow as fast and thus feeling the pain of price increases. At the same time, inflation hurts savers, who keep less of the value of their money, and benefits borrowers. This makes inflation a highly salient and politically problematic challenge for policymakers.

As we will discuss in this chapter, the foreign exchange problem and the inflation problem are not independent from one another and the direction of causation between them gets easily muddled. Figure 3.1 captures the path of devaluation and the path of inflation over the last few years in Ethiopia. The left-side axis shows the consumer price index (on a log scale) benchmarked to 100 in July 2018. The slope of the CPI line denotes the rate inflation, such that increases in the slope reflect increases in inflation. The right-side axis shows the value of the official and black-market exchange rates, in terms of Ethiopian Birr to USD (labeled as "USDETB Rate" in many graphs in this chapter), again on a log scale. The height of the grey region between the official and black-market rates reflects the size of the black-market premium. The slope of the official and black-market exchange rates reflects the pace of depreciation at those two rates.

One can see from this graph that inflation, official devaluation, and depreciation at the black-market rate have moved at similar rates over this period. The official rate's pace of devaluation (i.e., "the crawl") increased in late 2019 and so too did the pace of depreciation of the black-market rate (though with more volatility). As a result, the black-market rate was consistently 30-40% higher than the official rate over this period, constituting a premium where some parts of the economy were willing to pay a higher price for foreign exchange. If devaluation had been faster than inflation, this would have resulted in a real devaluation of the Birr, but this is not what happened when the nominal rate of devaluation increased. Rather, inflation also increased over time. The uptick in inflation here actually preceded the acceleration in crawl rate. Unpacking how and why these two high nominal rates of change have moved together overall will be an important goal of this chapter since the two problems are intertwined.

Figure 3.1: Devaluation and Inflation in Recent Years



Sources: NBE, CSA price data, & Growth Lab collection of black-market rate information reported on various sources including Facebook and Bloomberg

Ethiopian policymakers have faced several other macroeconomic challenges as well. There has clearly been insufficient tax revenue and other sources to meet the government's spending priorities. This has led to the use of financial repression on the banking system and borrowers as well as money printing. Ethiopian policy has, at the same time, targeted an expansion of the banking system to include more people because low financial inclusion is seen by many as challenge as well. It is reasonable to view different macroeconomic problems and imbalances as most important for different parts of society. The biggest macroeconomic problem faced by many businesses is a lack of foreign exchange, while the biggest macroeconomic challenge faced by most individuals and households is likely high inflation. Though, some may consider low formal employment as a still bigger problem. The biggest macroeconomic challenge for external lenders, meanwhile, is likely debt sustainability concerns and tight restrictions on capital flows.

Macroeconomic policymaking has essentially three components for addressing these imbalances: fiscal policy, monetary policy, and exchange rate policy. These structure the main tools of policymakers for balancing macroeconomic forces within the economy and shocks introduced from outside the economy. For the purposes of this chapter, we can summarize these three policy components briefly as follows.

- *Fiscal policy* refers to the decisions that the government makes regarding taxing and spending — or revenues and expenditures more broadly. Fiscal policy will often be summarized in the context of the central government's budget, but governments also carry "below-the-line" liabilities in their balance sheets, such as financial support and debt guarantees given to SOEs or long-term liabilities like pension funds. Likewise, government resources are determined not only be taxation but also by a variety of non-tax revenues and via grants and transfers from abroad. Fiscal policy must manage revenues and expenditures to allow the economy to function today but must also manage long-term fiscal sustainability, including debt management.

- *Monetary policy* refers to the policies of the central bank regarding the management of money supply, interest rates, and oversight of the financial system. Central banks, like Ethiopia's NBE, manage how much money is supplied into the economy by determining the monetary base and by regulating the multiplication of money through the financial system. Through several instruments, central banks ultimately influence the availability of money in the economy and the ease with which people can borrow.

- Finally, *exchange rate policy* refers to the exchange rate regime that a country follows and related policy choices that manage the economy's currency risk. Policymakers determine their exchange rate regime and where appropriate, manage reserves on a continuous basis. When the foreign exchange market does not clear, as is the case in Ethiopia, or when there are currency risks, central banks take additional measures to manage foreign exchange such as rationing foreign exchange access through imposing capital controls.

Within each of these policy disciplines there are approaches that have become standard in more developed countries through a mix of improved economic theory and through experience. These include fiscal frameworks that target countercyclical spending — i.e., borrowing and spending to offset shocks and saving more resources when times are good — and sophisticated debt management tools. Monetary policy in many countries is based on inflation targeting through management of short-term interest rates and macroprudential policies (e.g., banking regulations that impact lending), with separation between fiscal and monetary authorities. Countries implement a range of exchange rate policies, and, in recent years, intermediate regimes have increased in usage in comparison to completely floating or completely fixed regimes. Sometimes the macroeconomic crises that we face in the world represent new challenges where risks were not well managed within standard policies, such as the financial system risks that led to the Global Financial Crisis starting in 2008. Over time, economists develop theories and policymakers develop practices to address these risks, such as enhanced financial system oversight.

Yet, these standard policies are not always helpful in contexts where macroeconomic policymakers face multiple problems and distortions and where macroeconomic policymaking institutions are poorly resourced and lack the established rules and systems of developed country central banks

and treasuries. Ethiopian policymakers have a desire to move toward the standard international best practices of macroeconomic policymaking over time, but they are finding repeatedly that there are tradeoffs in addressing the previously stated macroeconomic problems. Ethiopia's Homegrown Economic Reform Program, assisted through a lending program with the International Monetary Fund, essentially aims to achieve debt sustainability, lower inflation, reduce foreign exchange scarcity, modernize the financial system, and maintain a high rate of GDP and job growth all at once. While there are arguably problems across all these dimensions in Ethiopia, tradeoffs abound in addressing these many imbalances, as addressing one distortion can worsen others.

In the following pages, we dissect the causes of the two most problematic macroeconomic problems for Ethiopians that continue to worsen at the time of writing: the foreign exchange imbalance and high and volatile inflation. One of these is an external imbalance and the other is an internal imbalance. These problems continue to worsen, despite Ethiopia's Homegrown Economic Reform Program now being in its third year. Once we establish a grounding of the proximate origins of these problems, we will reflect on the entire macroeconomic system with an aim of understanding how these two problems could be better addressed within the context of multiple distortions and macroeconomic sustainability issues.

Understanding the Black-Market Premium in Ethiopia

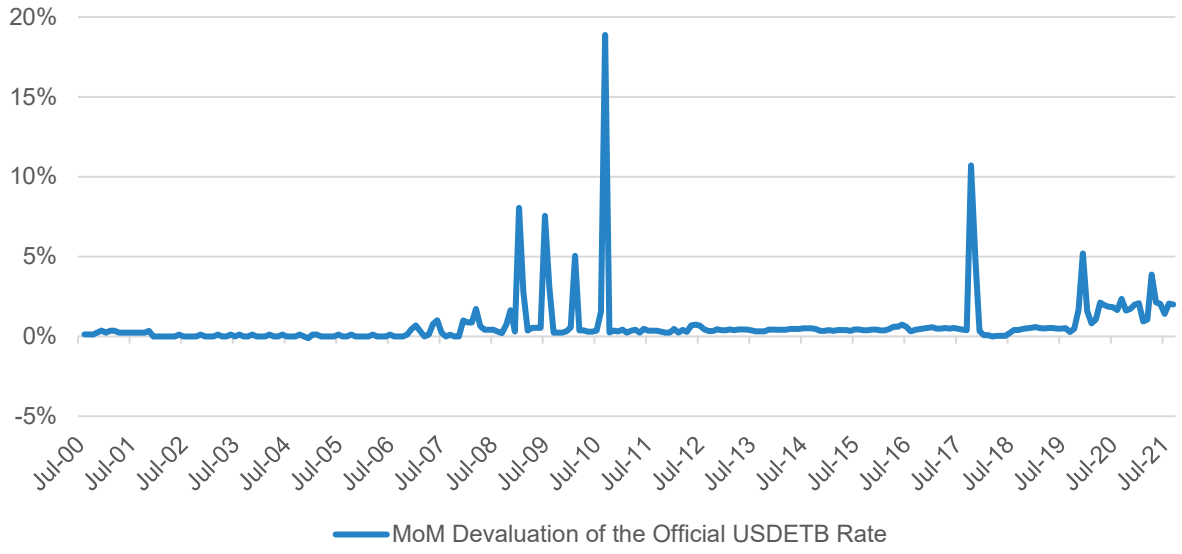
Many countries face a problem where their exports and other foreign exchange sources cannot grow fast enough to support the growth of the economy and thus run into a long-term constraint to growth much like Ethiopia's. However, relatively few countries have a black market for foreign exchange that is as economically relevant as that in Ethiopia. The causes of the broader insufficiency of foreign exchange involve also long-term and complex elements having to do with what the economy is able to produce and what the rest of the world is willing to buy, but the immediate cause of the very prominent black-market premium itself is, by contrast, more straightforward. The black-market premium is, in theory, a problem that does not necessarily need to exist in Ethiopia. Rather, it is the result of internally inconsistent macroeconomic policies that allow for a structural gap in the foreign exchange demanded by the economy and that which is officially supplied. Policy allows for that gap to persist by rationing of foreign exchange and use capital controls on how foreign exchange can leave the country.

Understanding this policy-induced imbalance in foreign currency in some detail is important because doing so allows one to see macroeconomic policy tradeoffs more clearly. Diagnosing the direct causes behind black-market premium allows for macroeconomic treatment options with clear differences from some that have been pushed in Ethiopia in the recent past. It is important to emphasize, however, that correcting macroeconomic imbalances that result from internally inconsistent policy choices could cure the symptom of the black-market premium — and some of the economic pain that results from this symptom — but cannot fully address the fundamental and chronic challenge of economic diversification. This will be the subject of the next chapter.

The black-market premium is, of course, in the purview of exchange rate policy, but exchange rate policy does not operate in isolation from monetary and fiscal policy. The NBE has two key policy levers that impact the black-market premium. Since these policies are managed on a continuous basis, it can be better to think of them as knobs than levers. One knob is the nominal exchange rate, which the NBE controls by setting the official value of Ethiopian birr to U.S. dollars that it uses to convert currencies. Since the Ethiopian exchange rate regime is a crawling peg, it is as if the NBE sets this knob to turn a little bit every day at a predetermined pace, though it can also step in and turn rate up or down as it determines necessary. In theory, the NBE could alternatively allow the knob to move automatically to clear the market (a fully floating exchange rate) or set the knob at one level and leave it there (a completely fixed exchange rate). The NBE could also alternatively manage the nominal exchange rate against another currency or basket of currencies, but in practice it does so against the U.S. dollar.

When looking back at the last several years of the exchange rate, one can see that the NBE sets the rate of crawl at a largely steady pace and changes that pace infrequently (Figure 3.1 and 3.2). The rate had been largely consistent from 2010 to October 2017, at which point the NBE adjusted the exchange rate through a one-time devaluation of around 15%. It then kept the rate nearly fixed at close to 27.5 Birr/USD through June 2018. The NBE then returned to a crawling rate from July 2018 onward, which was set a pace that was higher than the rate of crawl from before the one-time devaluation. The NBE then accelerated the rate significantly in late 2019 and more gradually through 2020 and 2021. Following this path, the official exchange rate reached above 50 Birr/USD in early 2022.

Figure 3.2: Episodes of Devaluation (Month-on-Month Changes in USDETB Rate)



Source: NBE and Growth Lab calculations

Meanwhile, the NBE also manages a second knob that controls the money supply. This knob, it turns out, is less precise and more complicated to manage than the one that controls the official exchange rate. The NBE has main control over the monetary base (MB, or sometimes referred to as M0). This money supply knob is less precise because the NBE does not have full control over how money is multiplied in the banking system. It is the job of the banking system to supply more money to the economy than it holds in hard currency through its lending. As financial systems become more advanced and diversified, they tend to multiply money in many ways to essentially generate returns on depositors' savings by channeling savings to productive investment uses. The financial system transforms M0 into broader money aggregates of money supply (M1, M2, and M3). In general terms, M3, which includes all types of financial instruments represents a measure of "broad money" but in the Ethiopian context of a less developed financial system, M2 can be thought of as representing the overall money supply in the economy. There is a time lag in financial intermediation between growth in the monetary base and growth in money supply, but ultimately this broader measure of money supply is what matters in the Ethiopian economy.

In practice, there is not only a problem of imprecision but also of whose hand is on this second knob. The NBE does not actually have independent control over the money supply— or, more specifically its net domestic assets (NDA). NBE does not determine the size of monetary advances are demanded by the central government or the needs of Ethiopia's SOEs. Rather, the NBE must react to the needs of these entities. It does not have the effective authority to turn down requests and, even if it did, the economic consequences would be complex. Rather, the Ministry of Finance is effectively the gatekeeper. The MOF, however, has historically had incomplete oversight of the needs for monetary advances of SOEs and the CBE. One way of summarizing this is that the macroeconomic system is characterized as one of "fiscal dominance," in which fiscal policy dominates monetary policy such that the NBE does not have independent control over the money supply. It is as if the NBE is trying to manage one knob — which is already imprecise — but the MOF and others have historically reached over to change the settings. As we will discuss later in this chapter, NBE management of the money supply is contingent on the level at which government sets its public sector deficit, and the degree to which financing this deficit requires monetization.

As elaborated in Box 3.2 for technical detail, the monetary base is a liability for the central bank that must be backed up by the central bank's net domestic assets and net foreign assets. Thus, the NBE controls M0 through how it manages its net foreign assets and net domestic assets. As it expands its net domestic assets (for example by lending to banks or the government), the central bank expands M0 by crediting the accounts of banks or the government. When the central bank loses net foreign assets (i.e., foreign exchange reserves decline), that is a transaction in which the bank sells foreign currency and buys domestic currency, which gets taken out of circulation. This second part of that transaction contracts M0. Many central banks around the world have moved away from lending to government directly with direct advances and they often end up changing the size of M0 with foreign exchange transactions or with lending to banks (e.g., central banks lend to governments at the prevailing rate using repurchase (or "repo") auctions). In Ethiopia,

however, the practice of directly lending to the government continues. The NBE increases money supply through the advances that it makes to the national government and to state-owned enterprises. In practice, the NBE has used a range of mechanisms to provide financing to the government and government-related entities, including through capitalizing SOEs through their accounts with the Commercial Bank of Ethiopia (CBE), which is itself a state-owned bank. All this lending increases the central bank's net domestic assets and thus the size of M0.

Box 3.2: Defining Net Domestic Assets in the Ethiopian Context

To understand the conduct of monetary policy and the impact of the inconsistency of exchange rate policy with monetary policy in Ethiopia it is helpful to understand how central bank balance sheets work in general and the context in Ethiopia. Central bank balance sheets are comprised of the following assets and liabilities:

$$\underbrace{E\ \ NFA + G + B}_{Liabilities} = \underbrace{MB + D}_{Assets}$$

where E denotes the official exchange rate (Birr/USD), NFA is net foreign assets, G is the central bank's net claims on the government, B is CB's claims on banks, MB is base money, and D is non-monetary central bank debt and net domestic assets. Net domestic assets are defined as: $NDA = G + B - D$. Hence when every term is expressed in Birr:

$$E\ \ NFA + NDA = MB$$

The central bank's balance sheet is summarized as follows, with assets in the left column and liabilities in the right column.

Net Foreign Assets (NFA)	**Base Money (MB)**
Reserves	Currency Issued
Net Domestic Assets (NDA) [14]	Held in banks
Net Claims on the government (G)	Held outside banks
=NBE Claims on Government-Government deposits	Deposits (reserves) of commercial banks with central bank
Claims on commercial banks and other resident sectors (B)	
=NBE Claims on specialized banks (DBE) and other banks including CBE	
Other items net (-D) =-Capital Account – Other NBE Liabilities (NBE Bills)	

[14] While many practitioners use NDA and NDC interchangeably, technically the calculation of domestic credit (which follows IMF's calculation) excludes some key items like claims on CBE, so NDA is used in this chapter.

These assets can be denominated in the local currency (NDA) or in the foreign currency (NFA). Since financial assets are claims on future income, NDA holdings reflect the central bank's Birr net lending to domestic actors (i.e., banks and the government). In the Ethiopian context, when the government finances the deficit with advances from the central bank to the treasury (i.e., "Direct Advances"), these show up as increases in NBE Claims on the Government and in government deposits. On impact, this does not change NDA. When this money is transferred from the government's accounts at the central bank (e.g., to pay public sector employees' wages by depositing the money in employees' bank accounts), this results in a decrease in government deposits (i.e., an increase in NDA) and a corresponding increase in deposits of commercial banks with the central bank, thereby leading MB to grow.

Beyond financing the treasury directly, the central bank can also finance government-owned entities like CBE and DBE, which otherwise would draw resources from the central government's budget. This type of lending is reflected in the (B) term in the table above and its logic is similar. As the central bank lends to CBE and DBE by crediting their accounts at the central bank with deposits, this results in an increase of NDA and the monetary base.

NBE also issues sterilization bills called NBE bills. This instrument essentially helps the central bank borrow in local currency. On first sight, it might seem odd that the institution that prints Birr should ever need to borrow in Birr; however, when issued, these bills help the central bank shrink NDA and MB. When a commercial bank buys an NBE bill, it lends to the central bank. This reduces the central bank's net claims on banks, and thereby NDA. On the net liability side, as the commercial bank draws down its deposits at the central bank to pay for the purchase of the NBE bill, this reduces the size of MB. Use of NBE bills do not represent a permanent solution to offset increases in NDA and MB caused by direct advances to the treasury. This is the case because NBE bills pay interest (i.e., tomorrow when the commercial bank is paid principal and interest NDA and MB will have grown). If there are not enough lenders of Birr at a given interest rate who are willing to lend to the government via the treasury (causing the government to resort to direct advances in the first place), why should they then be willing to lend to the same government via the central bank?

Given the answer to this question, NBE bills were mandated to be purchased until 2019 by private banks, which is a distortionary measure of financial repression. Even with this rule that required banks other than CBE and DBE to buy central bank bills that were equal to 27% of new loans, NBE bills were not able to restrain the growth of NDA. In general, NBE bills can lead to one-time decreases in the need for direct advances; however, they do not represent a long-term solution on their own.

The black-market premium, narrowly speaking, is the byproduct of inconsistency between exchange rate policy and monetary policy, which is itself dominated by fiscal policy. The NBE exercises only partial control over money supply, which has tended to grow rapidly in Ethiopia. As a result, the nominal exchange rate policy described previously has failed to align with market fundamentals — that is, with the supply and demand of foreign exchange in Ethiopia. This is evident from the fact the net international reserves stood in the negative as of 4Q2021 and from the persistence of the black-market premium. Despite the structural shortage in foreign exchange generation and the lack of full control over both policy dimensions— nominal exchange rate and money supply — exchange rate policy could be managed in a way that clears the market for foreign

exchange much better. This would be possible through setting a rate of crawl that adjusts more frequently in response with how money supply is changing (see Box 3.3). This would not resolve the deep problem of foreign exchange generation but would better address the problems that result from a high black-market premium and highly inefficient allocation of scarce foreign exchange.

Ethiopia instead sets a rate of crawl of the official exchange rate that inevitably ends up highly misaligned with the actual fundamentals of supply and demand in the foreign exchange market. Even with the accelerated crawl in recent years, the central bank is choosing a pace of devaluation that is inconsistent with the rate of money creation, which implies that there is more demand for foreign exchange than there is supply for it at the official price. The black market for foreign exchange is essentially a market response that aims to respond to this imbalance. The previous chapter discussed many of the economic costs of maintaining this system. Since the foreign exchange market is out of balance at the official rate, the NBE attempts to effectively ration the distribution of scarce foreign exchange, which has become increasingly ineffective. As more foreign exchange gets channeled to the government, demand by the private sector in the black market necessarily increases. Cracking down on the black market itself not only fails to overcome the problem but significantly worsens the challenges of the private sector to drive growth of the economy. Maintaining this imbalance further requires that Ethiopia keep strict capital controls in place that limit foreign ownership in many sectors of the economy and restrict the transfers of profits of foreign companies in Ethiopia to their home markets, which is a headache and major risk for business investment.

The question of why the NBE follows this policy, when alternatives are available, will be an important question for the rest of this macroeconomic diagnostic. As presented in Box 3.3, the exchange rate crawl could be tied explicitly to the monetization required to fund the public deficit. This link can be achieved by setting an anchor to exchange rate policy that targets NDA when valued in U.S. dollar terms. Traditionally, the NBE has targeted the growth of monetary aggregates like base money (M0) and broad money (M2), however imperfectly, and with an eye on not letting international reserves drop below certain *ad hoc* levels. Given that base money is the sum of net foreign assets (i.e., international reserves) and NDA, having targets on M0 and international reserves together place an implicit target on NDA. If instead, the NBE set a target on NDA in dollar terms, it would be able to adjust the nominal exchange rate in concert with monetization dynamics. In other words, if NDA grows in terms of Ethiopian Birr to cover an underfunded fiscal deficit, the official exchange rate could be devalued in line with this change such that the value of NDA remains the same in U.S. dollars. This would allow for the foreign exchange rate market to not be exposed to this change. Ideally, this target would be a constant value of NDA when valued U.S. dollars, but first the exchange rate would have to be adjusted to reverse imbalances of recent years by lowering the value of NDA in U.S. dollars. This creates a policy question of how to devalue in a transition phase that effectively brings the official rate into line with the black-market rate for foreign exchange. Considerations for doing this will be discussed at the end of this chapter after touching on several other important considerations in this macroeconomic diagnostic.

Box 3.3: Importance of Targeting Net Domestic Assets

We can rearrange the identity $E \quad NFA + NDA = MB$ from Box 3.2 to isolate reserves on the left-hand side. Dividing local currency values by E results in all values being expressed in USD:

$$NFA = \frac{MB}{E} - \frac{NDA}{E}$$

Net foreign assets (reserves) are equal in value to the difference between the USD value of base money and the USD value of net domestic assets. In that sense, if the USD value of net domestic assets grows faster than the USD value of base money, this will result in a decline of reserves.

$$\Delta NFA = \Delta(\frac{MB}{E}) - \Delta(\frac{NDA}{E})$$

What does the growth in the USD value of NDA depend on? It depends on (1) growth rate of NDA as expressed in Birr and (2) the pace of official devaluation. For example, if NDA grows by 15% in line with the need to monetize the deficit, and the exchange rate is devalued by 5%, then the USD value of NDA will grow by approximately 10%. If, at the same time, demand for base money (in USD terms) increases by less than 10% in response to real GDP growth and conditions in the money market, reserves will decline by the difference between the change in the two terms. This provides the rationale to relate the rate of devaluation to the rate of growth of NDA to prevent reserves from declining and to alleviate the pressure in the black market.

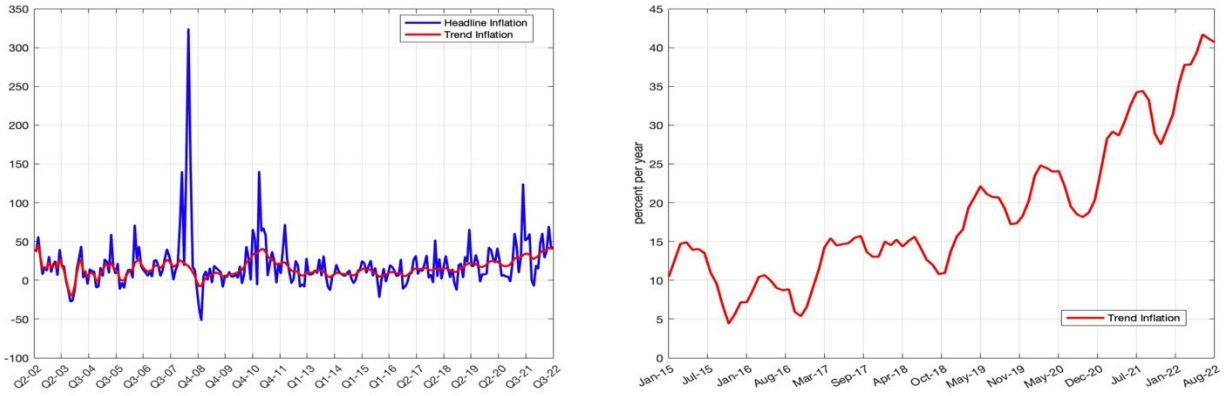
Explaining Inflation in Ethiopia

The causes of inflation in Ethiopia can also be diagnosed and, as we will see, could be treated more effectively. But first, let's return to defining the inflation problem itself. Ethiopia has consistently seen inflation well above its target of 10% per year. Inflation has also been exceptionally volatile, as shown in the left panel of Figure 3.3, which shows the year-on-year inflation rate for every month over the last 20 years along with our own calculation of statistical trend inflation (replicating Stock & Watson, 2015). At points in 2008, 2011, and 2021, Ethiopia saw large spikes in inflation amidst a usual pattern of large volatility in monthly inflation. Given the very high volatility, it is useful to track a measure of trend inflation by statistically filtering out volatility, as shown with the red line. The right panel of Figure 3.3 shows statistical trend inflation since 2015, which makes it clear that inflation has been rising since 2016. There is also a distinct pattern of seasonality where prices tend to settle or fall during Ethiopia's main harvest season, only to begin to rise again a few months later. Over the last year, inflation has been more than three times the policy target of 10%.

This trend clearly shows that prices are not moving according to macroeconomic plans, but is this a major problem? Reading a basic economics textbook, especially one written for the context of teaching in developed countries, one might leave with the interpretation that inflation is not a critical problem unless a country enters a cycle of hyperinflation, where prices increase by over 50% month-on-month for an extended period, or perhaps above 1,000% annually. Inflation in

Ethiopia has not come close to this level. Among the sharpest recent price increases in August and September 2021, inflation peaked at around 4% month-on-month.

Figure 3.3: Headline & Statistical Trend Inflation Since 2002 (left) and Trend Since 2015 (right)



Source: Growth Lab analysis of CSA price data (replicating Stock & Watson, 2015)

Economic theory stresses that since prices and wages tend to adjust to one another, high inflation is mostly an inconvenience so long as inflation expectations stay relatively anchored and do not spiral into hyperinflation. The inconvenience comes in businesses and individuals facing "menu costs" regarding updating prices. It is hard for businesses to plan prices and consumers to organize spending and it tends to make sense to spend more now rather than see the value of your savings erode due to thigh inflation. There is also the positive to the government and other borrowers from high inflation that it makes debt repayments less burdensome. There is also economics literature which speaks about nominal wage rigidities with the implication that inflation can "grease the wheels of the economy" to some extent.

These observations can make inflation and similar imbalances seem rather benign, but high inflation has some key downsides that are worth expanding on. First and foremost, inflation's distributional impacts are often very unfavorable for low and middle-income households. People's wages do not instantly update with inflation, as suggested by some neoclassical models, so those with wages fixed by a contract will suffer significant loss of purchasing power in episodes of inflation. An average family of four, might lose 30% of their purchasing power and need to cut down on essentials like food for a year while they wait for their wages to updated and even when wages adjust upward, they may not necessarily be updated one-to-one for inflation. There is a permanent utility loss at play here for many households. This is also a problem for families without regular wage income, like those involved in subsistence farming, whose income at harvest will erode in real terms of purchasing power over the year. Inflation is, in effect, a regressive tax. Every holder of the local currency loses some constant share of their purchasing power and losing 30% of their income will mean a lot more to a low-income household than it will mean to a wealthy individual.

High inflation can also weigh significantly on growth, because as inflation grows into the double digits, its volatility leads to uncertainty. If annual inflation, for example, is on average 23% and has a standard deviation of 31 percentage points, then people making business decisions will not know if an investment decision will make them money in real terms, even when they project nominal cash flows that might yield 30% profits.[15] Such an environment may lead them to stay away from investments and the local currency in order to park their money in assets relatively protected from inflation like foreign exchange and possibly real estate. In this sense, inflationary policies might lead to sub-optimal allocation of resources and below-potential growth.

The voices of Ethiopian society are clear in their view that inflation is a problem. Inflation dominates the public economic discussion in Ethiopia and, consequently, is a focus of economic speeches by the Prime Minister and other officials. The latest round of the Afrobarometer Survey — a survey conducted in all African countries every several years — in Ethiopia occurred in the months just before the COVID-19 pandemic. At that time, nearly half of respondents thought that the country's economic conditions had worsened over the last 12 months, though many also expected conditions to improve over the next year. When asked about government performance on several economic issues, achieving price stability was seen as the weakest area of the government's performance by far (87% of respondents said the government doing "fairly badly" or "very badly"), with the related issue of narrowing gaps between the rich and poor coming up as the second worst (77% responding "fairly badly" or "very badly").[16] This is while nearly half of respondents said that the government was doing "fairly well" or "very well" in managing the economy overall and more than 40% said the same for addressing the needs of young people.

So, what causes the inflation problem in Ethiopia? In public dialogue in the country there are several factors that are commonly raised to explain the phenomena. One common explanation is that inflation must be the result of "passthrough" from exchange rate depreciation. The idea here is that prices on imports consistently rise because of the crawling exchange rate and that this passes through to the overall inflation rate in the country through upward pressure on prices. Another common explanation is that Ethiopia faces many supply shocks that especially impact food prices, which comprise roughly half of the estimated consumption basket of Ethiopians. Droughts, input constraints, fuel price increases and internal transportation all create disruptions in food supply. These supply shocks are often domestic and regional, but large global price increases in food in 2008 and 2011 coincided with very high inflation in Ethiopia as well. The third category of explanations point to government policies, mainly in the realm of monetary and fiscal policy, that ultimately result in too much money supply growth in relation to demand growth. In other words, policies that systematically lead to "too much money chasing too few goods".

[15] The numbers here reflect inflation in Argentina. Calculation of standard deviation and mean cover annual inflation from 1991-2021.
[16] Results come from Afrobarometer's February 2021 News Release: "Ethiopians dissatisfied with government economic performance, new Afrobarometer study shows"

We will go through the evidence on these causes one-by-one to diagnose the causes of the inflation problem. Depending on the main contributors, different policy approaches could be warranted, that touch upon different parts of government. The discussion here will focus on summarizing evidence and capturing key findings, as opposed to presenting detailed modeling and econometric work. For more detailed analysis of inflation in Ethiopia, academic papers accompanying this chapter are also available (see Box 3.4). The next several pages respond to the following questions:

- Does exchange rate passthrough explain inflation in Ethiopia?
- Do supply shocks explain inflation in Ethiopia?
- Does money supply growth explain inflation in Ethiopia?

Box 3.4: Modeling the Ethiopian Economy

The macroeconomic system in Ethiopia has created modeling challenges prompting new papers. Three different academic papers connected with the Growth Lab's research in Ethiopia are as follows:

- González-Rozada, Neumeyer,and Soylu (2022) estimate a money demand function in Ethiopia and use this to estimate excess money growth and its role in inflation in Ethiopia, which is found to be the dominant cause.
- Espino, Guidotti, and Neumeyer (2022) build a theoretical model that builds on Krugman's speculative attack model, which assumed that under full capital mobility foreign exchange reserves will collapse if the rate of money creation outpaces exchange rate devaluation. Authors show that capital controls and import restrictions can allow a fixed exchange rate regime whose devaluation rate is inconsistent with the rate of money creation to delay macroeconomic collapse by employing capital controls and import restrictions, which results in a black-market premium. This comes at the cost of reducing the output of tradable goods.
- Soylu (2022) develops an explicit model of the Ethiopian economy. The paper provides microeconomic foundations for the black-market premium with an interpretation that argues that the black-market premium captures the unrealized excess returns on imported inputs. The paper uses the theoretical model to derive sign restrictions for a sign-restricted VAR model to estimate different drivers of inflation and the black-market premium and finds that money market fundamentals have high explanatory power.

Does exchange rate passthrough explain inflation in Ethiopia?

Exchange rate policy is all about changing relative prices of imports and exports. When a country faces an imbalance in its balance of payments where foreign exchange outflows, primarily for imports, are systematically bigger than foreign exchange inflows, including exports, devaluation is the natural policy response. This makes what a country imports more expensive in the domestic market than they were before and what the country exports relatively cheaper to the rest of the

world than they were before. All things equal, this will cause the country to import less and export more, but by how much depends on the elasticities of import demand and exports to changes in the exchange rate — that is, how responsive imports and exports are to the change in the exchange rate. Demand for some import items, like fuel, and some exports, like commodities, will tend to relatively inelastic, which is reflected in Ethiopian trade data when quantities are compared against prices over time. In other words, the global and domestic prices may change but import and export volumes do not change by much. When a country devalues its exchange rate, there is often some passthrough of price increases to overall inflation as imports become relatively more expensive and import volumes do not necessarily fall one-for-one with the increase in prices. In general, passthrough is usually thought of as a one-time event, but in Ethiopia the effect might be more continuous due to the exchange rate regime of the crawling peg.

Many in Ethiopia draw an immediate connection between continuous devaluation and high inflation and take for granted that devaluation must be the *cause* of inflation. However, a closer look is essential. Like with the growth diagnostic, looking at "changes vs. changes" evidence can be a powerful tool. This immediately casts doubt on this causal relationship. In Ethiopia, even during long periods when the exchange rate policy followed a constant trend, with a rate of crawl in place for a period of years, inflation has been exceptionally volatile. Perhaps more importantly, when looking at statistical trend inflation to cut through monthly volatility, we also do not see any change in the multi-year trend when the pace of devaluation accelerated in late 2019 and early 2020. Rather, we see a steady overall pattern of rising overall inflation in the years prior to and after this change, with a distinct seasonal pattern (see Figure 3.3, right panel).

Another point in time to look at for evidence is October 2017, when the Birr was devalued by 15% followed by a period of about eight months of a largely fixed exchange rate. Rather than seeing inflation accelerate following the devaluation, we see it largely level off. If anything, one could argue that the devaluation of October 2017 was a *response* to the sharp acceleration early in 2017 that preceded it. Changes vs. changes evidence therefore undermines explanations of exchange rate passthrough being to blame for high and accelerating inflation in Ethiopia. There is a stronger case to be made for the interpretation that continuous devaluation is needed in response to high and increasing inflation when closely exploring the relationship shown in Figure 3.1.

This reading of broad trends is not to say that there is no issue of exchange rate passthrough in Ethiopia, but rather that this cannot be the driving force behind the inflation problem. Several studies using vector autoregression modeling have highlighted the impact (for example, Ndikumana et al., 2021) and our own modeling suggests the same. Devaluation inevitably leads to a knock-on impact on prices, but one that is generally small in comparison to the driving force and that does not align with the volatility or inflection points in inflation. This is an important cause-and-effect relationship to note but it is a far stretch from being the driver of inflation as is too often assumed. This inflation channel, though small in practice, has consistently been raised as one of the most important issues preventing more rapid devaluation of the official exchange rate to reduce

the negative impacts of the foreign exchange imbalance. Based on the evidence, this fear has been overblown and this idea has unfortunately allowed the foreign exchange constraint to worsen.

Do supply shocks explain inflation in Ethiopia?

Another common argument in Ethiopia is that food price shocks and other domestic or external shocks have been driving inflation. Ethiopia has certainly seen no shortage of shocks in the recent past, including recurring challenges of drought influenced by climate change. Ethiopia and the larger region have also faced a historic infestation of desert locusts in recent years. This certainly impacts agricultural production by negatively impacting domestic supply, and food items make up a large part of the average consumption basket of Ethiopians. Overall, food and non-alcoholic beverages represent more than 50% of the consumption basket that is used to construct the consumer price index (CPI) in Ethiopia, though this varies by region. Global shocks to fertilizer prices and oil can also impact the cost of food, including the costs of moving food from where it is produced to where it is consumed in the latter case. COVID-19 has further caused supply chain disruptions worldwide that have impacted prices of a wide variety of goods. Starting in 2021, the conflict in the country impacted food production and the movement of food and other items. For the region of Tigray and other parts of the country where the conflict has been centered, these impacts have been extreme.[17] At the time of writing, the conflict in Ukraine has also resulted in a global shock to fuel, cereal, and fertilizer prices, with important ramifications for prices — of food and otherwise — in Ethiopia.

Once again, it is easy to make a connection between this proliferation of shocks and inflation, but it is important to look more closely at changes vs. changes and other evidence. Shocks are generally thought of as temporary, but many of the shocks discussed above are prolonged. Parts of Ethiopia, particularly in the south and southeast have been under drought conditions for three straight years, and the desert locust infestation was also a multi-year phenomenon. More recently, the pandemic and conflict have had evolving impacts on supply and access to consumption items. Can the combined impact of shocks explain broad patterns of inflation?

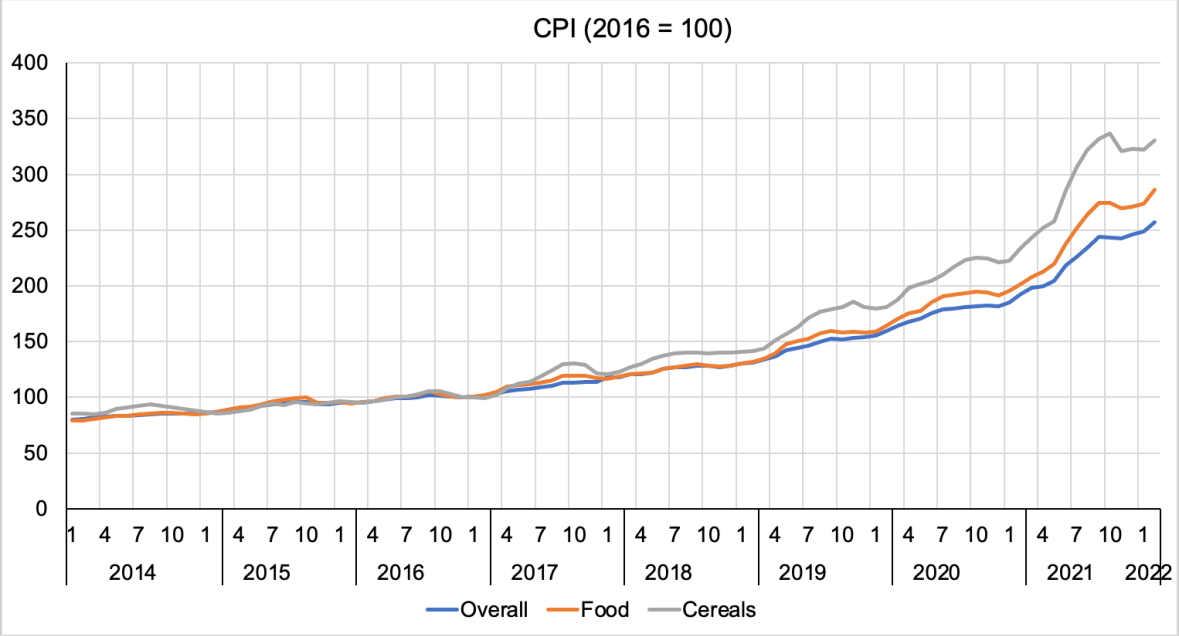
This question takes on some shape when subject to changes vs. changes evidence. Total cereal production in Ethiopia has grown continuously since 2003-04 (WDI), which does not point to a clear story of shocks to production leading to inflation. This pattern varies by crop as FAO data shows continuous growth across maize, wheat and rice, but more limited growth in recent years, particularly since 2020, in "other coarse grains" production. This may reflect challenges in

[17] Millions of people have faced severe food insecurity. The Famine Early Warning Systems Network (FEWS NET) is an excellent source of global information on food insecurity, which assesses food security conditions on a five-point scale — (1) minimal, (2) stressed, (3) crisis, (4) emergency, (5) famine. As of the start of 2022, the FEWS NET reports emergency conditions, or worse due to insufficient information, in the north of the country due to the conflict as crisis levels for much of the east, southeast, and south. Another season of failed rains was expected to put parts of the south of the country into emergency conditions in the next few months. These assessments were before the Russian invasion of Ukraine starting in February 2022.

expanding the production of the Ethiopian staple of teff, though reliable data on recent teff production is harder to come by. As population and incomes have continued to grow, it makes sense that demand for cereals and other food has outpaced supply for some domestically produced food products. However, there is not an obvious change in these patterns recently that would explain a systemic change in food price dynamics based on shocks to domestic production alone.

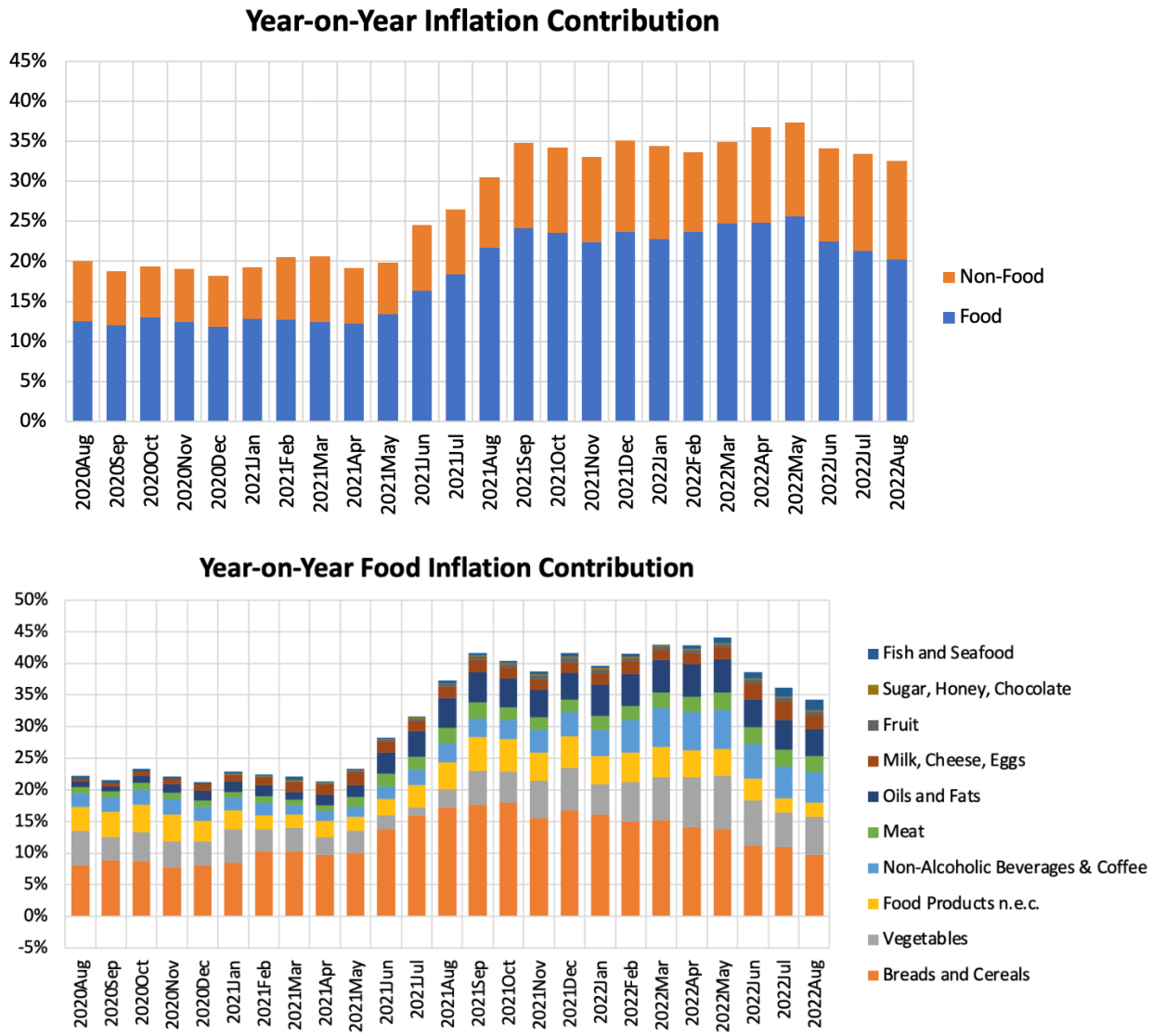
With insufficient domestic food production, the typical response by an economy would be to import more cereals, but Ethiopia's imports of cereals and agriculture and food in general have stagnated with the overall stagnation of imports since roughly 2015. This likely traces to the challenge of foreign exchange as well as a system based on centralized imports and distribution of food by the government that is not able to respond effectively to market forces. For these reasons, the economy was not able to import more cereals. Since Ethiopians did not suddenly demand fewer cereals and domestic production did not accelerate, it makes sense that cereal prices rose. In fact, cereal prices have systematically risen faster than food prices and overall inflation (Figure 3.4), but especially so since 2019. This is several years after supply changed and aligns with when statistical trend inflation began to accelerate year after year. Interestingly, we can also observe cereal prices driving the overall inflation acceleration in 2017 prior to the one-time devaluation that happened in that year. Breaking down inflation by CPI components shows that around two-thirds of inflation over the last two years has traced to food price increases and that cereal price increases have been the largest, though far from the only, contributor to food inflation (Figure 3.5).

Figure 3.4: Consumer Price Index – Overall, Food Component, and Cereals Component



Source: Growth Lab analysis of CSA price data

Figure 3.5: Contribution to Inflation by Food/Non-Food (top) and to Food Inflation (bottom)



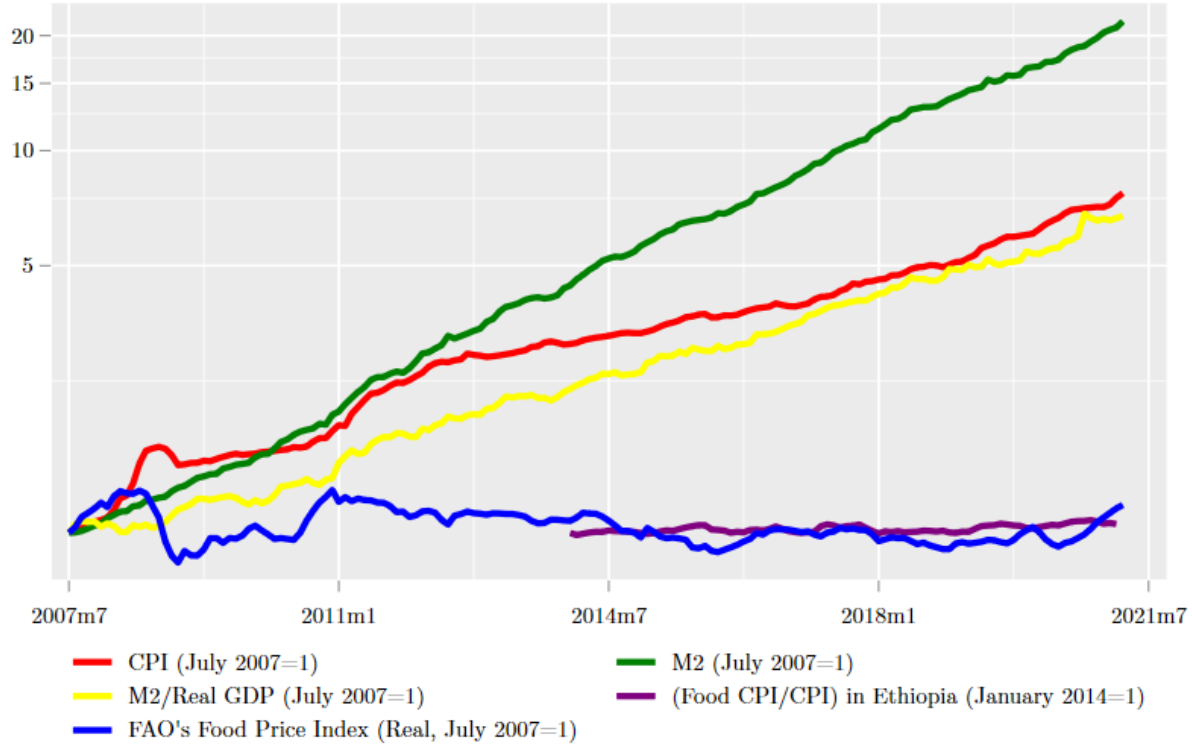
Source: Growth Lab analysis of CSA price data

Food prices are clearly an important part of the inflation story, but this is not necessarily driven by shocks to production. In fact, it may have more to do with foreign exchange and access to imports. There are additional issues with interpreting this pattern as a supply shock. First, there is very little difference in food price movements across regions, whether looking at overall inflation, food inflation, or cereals, with the noteworthy exception that CPI data from Tigray is not available since the start of the conflict. Statistical analysis by the Growth Lab using principal component analysis confirms that price movements have been defined much more by sector than by region This pattern where prices move together across regions is an indication that any shocks that have affected the movement of goods between regions have not been a key driver of inflation overall. If they had been, we would have expected to see many instances where (food) prices are low in one region where they are produced and high in other regions where there is demand but no access to supply.

The dynamics with food prices also do not explain inflation volatility well — given the rather steady contribution of cereal prices to overall inflation. Among food items, vegetables have shown more price volatility, and vegetable prices also tended to rise more quickly since 2019 rather than before. But as can be seen in Figure 3.5 (bottom panel), the food items contributing to inflation have been broad based, especially in 2022.

A larger problem is that supply shocks and shortfalls can explain inflation for limited time periods, but they cannot explain persistently high inflation in the long run. If the problem was purely one of supply of some items, like food, we would expect to see the relative price of these items remain systematically higher than prices of other items in the consumption basket. This is not what we see. Instead, we see a long-term pattern of price increases across all items of the CPI index. Over time, there is a clear pattern in the CPI data where food prices often rise first and then non-food prices, including many publicly administered prices like education, health, and transport, rise to keep pace. No components of CPI have been immune from significant price increases over the past few years. This overall pattern is captured by the stable ratio of food CPI to overall CPI as shown Figure 3.6 for the period where this breakdown is available.

Figure 3.6: Indexed Values of CPI, Food Prices, and Money Supply Over Time



Sources: NBE, CSA, and FAO

\Another issue that it is important to account for is global price shocks. The three sharpest increases in inflation in Ethiopia in 2008, 2011, and 2021 (see left panel of Figure 3.3) all coincided with periods where global food prices spiked upward, as was also the case in the first half of 2022. Figure 3.6 captures a striking pattern when it comes to global food prices as well in their overall stability over the long-term. This contrasts with the long-term growth of CPI (i.e., long-term inflation). This divergence shows that global food prices, as with local food supply shocks, can explain inflation in the short run but cannot explain the persistence of high inflation in the long run. For comparison this graph also shows the trajectory of money supply and money supply in relation to GDP, which is the next driver that we investigate.

Interestingly, it appears that Ethiopia feels the pain in local price increases when global food prices increase, but experiences none of the benefit when global prices decline. This is likely because Ethiopia does not import many food items and because the foreign exchange system and dependence on public import systems do not allow the economy to react to arbitrage opportunities. In other words, domestic prices rise in line with global food prices but do not fall with them because the economy is unable to efficiently import cheaper food products when global prices fall. There is a common perception in Ethiopia that traders are manipulating prices, including through hoarding, and that fighting this is key to fighting inflation. While there is no doubt some of this activity going on, it is not a main cause of inflation since it cannot explain the long-term patterns we see here. While some traders might find ways to personally benefit from this one-way street of global price increases, they are a symptom rather than a cause of the larger issue.

Does money supply growth explain inflation in Ethiopia?

Milton Friedman provided one of the most famous quotes in economics when he said, “Inflation is always and everywhere a monetary phenomenon.” This quote has been much debated and undoubtedly overlooks a lot of factors that impact inflation in practice, especially in the short term. However, it is truer than not when it comes to inflation over an extended period. No matter what complex forces might contribute to an inflationary episode, monetary policy provides tools to offset inflation by reducing money supply, either indirectly through interest rate policy and financial regulations, or directly through reducing base money. If inflation extends over a long period of time, this means that monetary policy is not adjusting and is instead “allowing too much money to chase too few goods.” Thomas Sargent later adapted Friedman’s quote by saying, “Persistent high inflation is always and everywhere a fiscal phenomenon.” This captures an important reality in many places, like Ethiopia, where monetary policy is not independent from fiscal policy. It captures the idea that monetary policy cannot adjust to offset inflationary pressure because fiscal policy demands that the central bank create money. As we will see, these quotes are both relevant for inflation in Ethiopia.

The simplest framework for understanding inflation is think in terms of aggregate demand and aggregate supply. Inflation can rise because of a positive aggregate demand shock or negative

aggregate supply shock, or both. An aggregate demand shock could include cases where government overspends, which may entail the creation of money, or a monetary expansion (e.g., if the central bank lowers interest rates to stimulate the economy). This increases the demand for money. Meanwhile, a negative supply shock reduces the supply of goods and services — whether due to a natural disaster or COVID-19 lockdowns or other causes — and that too will increase prices even under constant demand. In the face of negative supply shocks, monetary policy could be used to reduce aggregate demand and thus mitigate inflation. This would lower prices but would also further reduce output. This is a painful step, which is why monetary policymaking is often made independent from the rest of government.

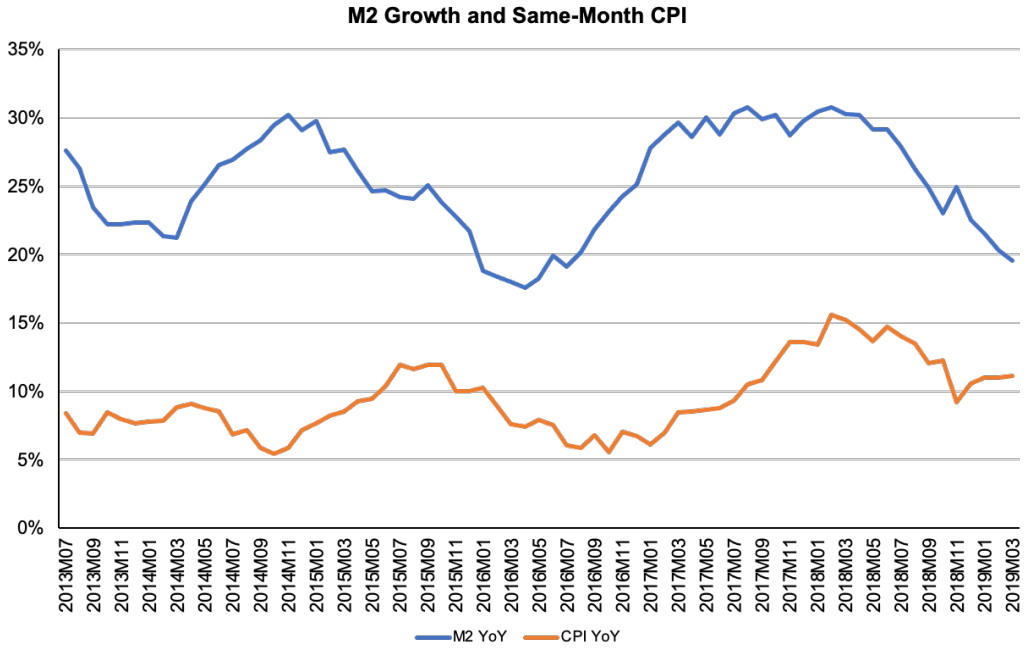
The previous section showed that Ethiopia has faced some important supply shocks, especially regarding food items. So, what has happened with the monetary policy response? Rather than providing an offsetting effect of reducing aggregate demand, fiscal and monetary policy have together expanded aggregate demand quite continuously and rapidly. This was consistent with the strategies of the Growth and Transformation Plans that emphasized public investment and low interest rates. As discussed in the previous chapter, financing this investment after 2015 relied increasingly on domestic sources, principally money creation, as external financing became less viable. Continued expansionary fiscal and monetary policies were also considered necessary to deal with the challenges of COVID-19 and to pay for the military conflict starting in 2020. Overall, Ethiopia has therefore seen a continuous expansion of money supply (and hence aggregate demand) while it has also faced negative supply shocks. This helps to explain why it has not just been food prices that have risen over time, but rather prices across the economy.

Once again, we can again first look at changes vs. changes evidence as a powerful test. When looking at the relationship between M2 growth and CPI, we can see a close relationship, at least until 2019. This is shown in Figure 3.7. If one takes the simple correlation between these lines over a period of 10 years, you get a correlation of just 0.28, but if you take allow for a lag between M2 growth and CPI growth of 7-8 months, you get a correlation around 0.8. In the figure, this would be the equivalent of shifting the blue line 7-8 months to the right or the orange line 7-8 months to the left. This implies that money growth over the period of 2009 through 2019 could explain upward of 80% of the subsequent inflation seen. While this correlation alone does not prove causation, technical work by the Growth Lab over the last several years has worked to do just this.

Gonzalez-Rozada et al. (2022) estimate a money demand function for Ethiopia (see Box 3.5). Using the money demand function estimated in this paper, if one were to predict CPI based on money supply, the predicted series would explain the vast majority of CPI depicted in Figure 3.8. In other words, by merely knowing the path of expansion of money supply, or M1 to be exact, we can accurately predict price levels in Ethiopia. This analysis makes it clear that at the pace of recent money growth, inflation is all but guaranteed to be much higher than targets and what Ethiopian society finds comfortable. Simply put, long-run inflation in Ethiopia is overwhelmingly driven by

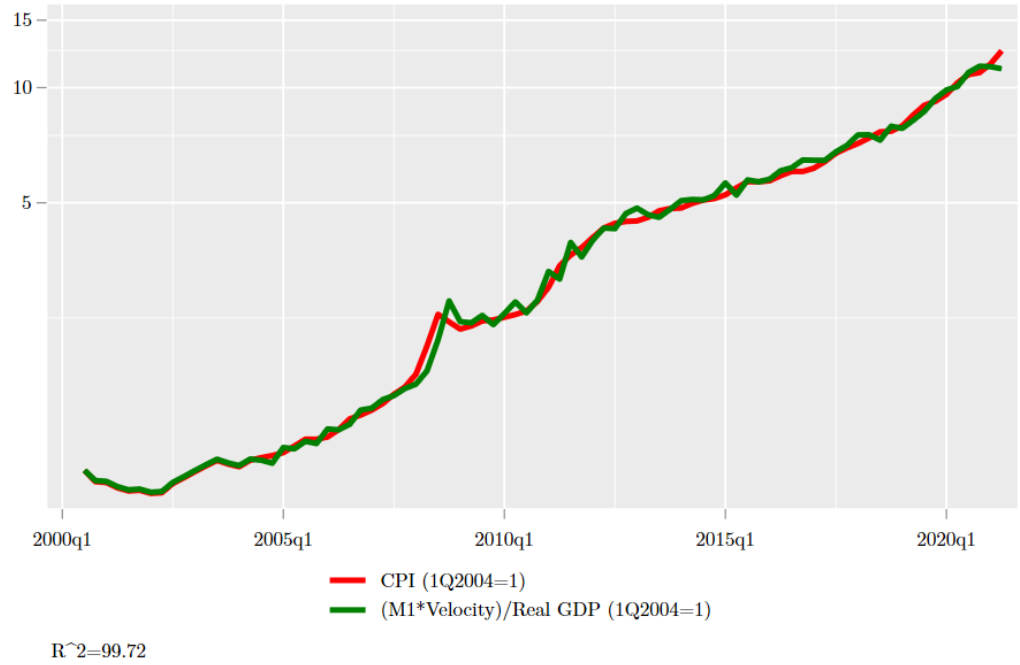
money creation, which in turn is driven by deficit monetization. Food supply and price shocks contribute to spikes and have implications for where inflation shows up in the consumption basket.

Figure 3.7: Broad Money Growth and Inflation Over Time



Sources: NBE; CSA

Figure 3.8: Predicted CPI Based on Money Supply and Actual CPI



Source: Gonzalez-Rozada et al. (2022) using NBE and CSA price data

Box 3.5: Understanding Money Demand in Ethiopia

The Quantity Theory of Money will be familiar to many readers. Consider the following equation:

$$MV = PY$$

where M stands for money supply, V stands for velocity capturing the pace with which money changes hands, P stands for the general price level and Y stands for output in real terms. If we rearrange these terms to equate real money supply to real money demand, then:

$$\underbrace{\frac{M}{P}}_{Real\ Money\ Supply} = \underbrace{\frac{Y}{V}}_{Real\ Money\ Demand}$$

In that sense velocity and real money demand are inversely related. Often money demand is modeled explicitly as a function of output and the nominal interest rate, in effect asserting that velocity is a function of the nominal interest rate. Consider for example, the following specification:

$$\underbrace{\frac{M}{P}}_{Real\ Money\ Supply} = \underbrace{Ye^{-\lambda i}}_{Real\ Money\ Demand}$$

where i is the nominal interest rate and λ is the semi-elasticity of money demand with respect to the interest rate. If one were to estimate λ, then using that one could predict P.

$$P = \frac{M}{Ye^{-\lambda i}}$$

Gonzalez-Rozada et al. (2022) empirically arrive at an estimated elasticity at which money demand in the economy responds to interest rates. Such an estimation is not straightforward in Ethiopia because nominal interest rate changes are infrequent and real interest rates are negative, but the analysis still finds that interest rate changes provide an adequate basis for the estimation. The analysis finds a point estimate of the interest rate elasticity of money demand of 0.5 and a confidence interval of 0.29 to 0.76, which is consistent with a broad sample of countries. The point estimate implies that long-run inflation in Ethiopia is proportional to the square of the deficit that is financed through money creation. This analysis was further used to understand what combinations of exchange rate policy and net domestic asset growth would be consistent with Ethiopia's monetary financing needs.

Since money supply is the primary cause of persistent inflation in Ethiopia, it is useful to investigate money supply more closely to inform policy responses. As described earlier in this chapter, monetary policymakers in general have imprecise control over the supply of money, and in Ethiopia the NBE does not have independent control of money supply. One important question is whether money supply growth is driven more by base money or by dynamics with the money multiplier (i.e., the role that the financial system plays in transforming base money into the broader money supply that circulates in the economy). If it is driven more by the monetary base, then this points to inflation being ultimately a problem for fiscal and monetary policy to solve. However, if the money supply growth is more driven by the money multiplier, this would mean that policies affecting banks could go a long way to addressing the inflation problem. One quick way to check for this is to look at the growth rates of M1, the monetary base, and the money multiplier.

Table 3.1 shows this for a long period of 2002-2021 to capture the long-term trend and a shorter period of 2016-2021 to look at the recent period when inflation has accelerated. In both the roughly 20-year period and the 5-year period, money growth has averaged 17-18% per year. The monetary base has grown at almost that rate in each period. Over the longer-term growth of the monetary base appears to explain virtually all the growth rate in money supply. In the recent period, growth of the monetary base continues to drive growth of M1, but the money multiplier now plays a more significant role.

Table 3.1: Comparing Growth Rates of M1, Monetary Base, and Money Multiplier

	Average Annual Growth Rate			**Share of M1 Growth Rate**	
	M1	**Monetary Base**	**Multiplier**	**Monetary Base**	**Multiplier**
	(a)	**(b)**	**(c)**	**(b)/(a)**	**(c)/(a)**
2016-2021	17.9%	15.9%	2.0%	88.9%	11.1%
2002-2021	17.3%	17.0%	0.3%	98.2%	1.8%

Since the problem comes down primarily to the monetary base, we can also look at what components of the monetary base are driving the change. Table 3.2 again shows the annual growth in the monetary base but now compares this with growth of its components of net foreign assets (NFA) and net domestic assets (NDA). As outlined previously in Box 3.2, these terms could be broken down further. The table shows the contribution to NFA growth coming from changes in net foreign assets as valued in U.S. dollars and changes in the official exchange rate. The table breaks down NDA growth into the contribution of net claims on government (NCG) and the rest of net domestic assets. It is striking that the main driver of growth of the monetary base is credit to government.

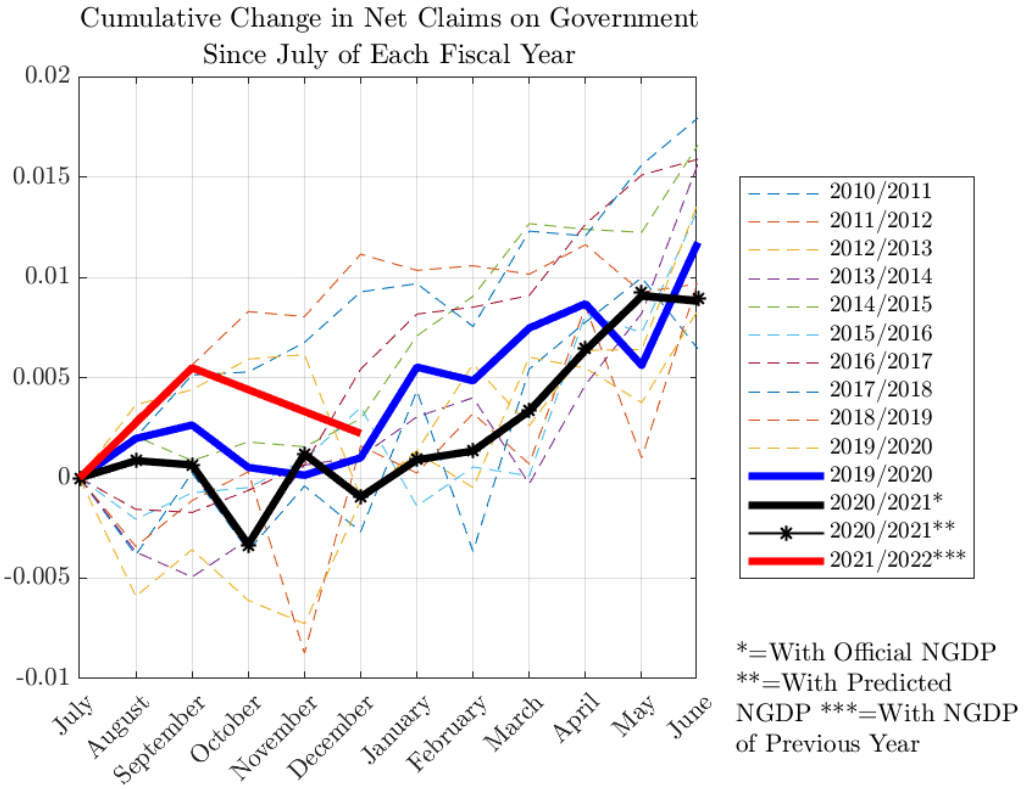
Table 3.1: Comparing Growth Rates of Monetary Base and Components of NFA and NDA

	Average Annual Growth Rate				
	Monetary Base	**Contribution of NFA Growth in USD**	**Contribution of Official Rate Devaluation**	**Contribution of NCG Growth**	**Contribution of the Growth of Rest of NDA**
	(a)	**(b)**	**(c)**	**(d)**	**(e)**
2016-2021	15.9%	-4.3%	-0.5%	16.5%	5.4%
2002-2021	17.0%	1.7%	1.3%	14.0%	1.7%
	Share of Monetary Base Growth Rate				
	(a)/(a)	**(b)/(a)**	**(c)/(a)**	**(d)/(a)**	**(e)/(a)**
2016-2021	100%	-27%	-3%	104%	34%
2002-2021	100%	10%	8%	83%	10%

Taken together we can see a clear causal link between monetization of the overall fiscal deficit and the persistence of high inflation in Ethiopia. In simple terms, the NBE creates money to fund the portion of government and SOE expenditures that cannot be financed through other means. This has been the main driver of inflation over the entirety of the growth acceleration, but this connection intensified since roughly 2015, when other sources of deficit financing became less available. In the table above, we see that the average annual contribution of the growth of net claims on government to the growth of the monetary base was 2.5 percentage points higher in the last 5 years compared to the twenty-year average. Later sections of this chapter will explore why this reliance intensified rather than increases in other ways that the government could have funded itself, namely through taxation and financial repression.

Figure 3.9 shows that — despite reform efforts to reduce this type of monetization — net claims on government have continued to grow throughout recent years. The graph also captures apparent seasonality of growth in net claims on government, as this often concentrates in January through June in the last two fiscal years where data is available. As the government is about the end the fiscal year the difference between the deficit target and current deficit is closed with direct advances from NBE, which increase NBE's net claims on government.

Figure 3.9: Summary of Net Claims on Government Growth by Fiscal Year



Source: NBE

To summarize, high, volatile, and increasing inflation in Ethiopia is a critical macroeconomic problem. It is not undermining economic growth in the same way that the foreign exchange imbalance and resulting black-market premium and rationing is. Rather, it is problem that is felt across Ethiopian society, including the most vulnerable. Fear of driving up inflation is further undermining potential macroeconomic policy responses to the foreign exchange problem by taking exchange rate policy options off the table. But fears of exchange rate passthrough are misplaced. There is an unavoidable passthrough effect of devaluation on inflation, but this is far from the main driver of inflation. Not devaluing fast enough to clear the foreign exchange market also results in passthrough because many transactions take place at the black-market premium are passing through higher import prices anyway. It is crucial to note that the need for devaluation comes from excess money creation in the first place, so a slower pace of devaluation today postpones the exchange rate adjustment (and the associated passthrough inflation) to tomorrow. Since the foreign exchange constraint itself can be thought of as a negative shock to aggregate supply, given the Growth Diagnostic of Chapter 2, allowing this imbalance to persist is likely far more inflationary than exchange rate passthrough. In the context of a more rapid exchange rate adjustment, passthrough impacts on inflation could be moderated through monetary and fiscal policy tools that have not been fully utilized in the past, including when the Birr was devalued in 2017.

Supply shocks are an important contributor to the inflation patterns that Ethiopia has faced, but it would be wrong to interpret the combined shocks as the main driver of inflation. This can only be explained by significant and continuous expansion of the money supply. Monetary policy is the main tool to balance money supply with money demand, including in the face of shocks, but Ethiopia's monetary policy does not effectively serve this purpose. Rather, monetary policy is dominated by fiscal policy considerations. This has resulted in a long-term and large-scale use of money creation to fill an overall public sector deficit, which has been necessary to facilitate Ethiopia's public investment push. Monetization of the deficit has become especially critical since 2015. Money supply growth has been primarily the result of direct advances to the central government and SOEs and the resulting growth in net domestic assets and growth in the monetary base. Domestic borrowing through an expanding market and financial deepening, which will be discussed later in this chapter, have more recently intensified this challenge by increasing the money multiplier.

Tackling inflation is ultimately a fiscal challenge, at least so long as the fiscal deficit exceeds what can be sustainably financed through grants and external borrowing. In the presence of an underfunded fiscal deficit, the money supply knob gets turned up, sooner or later, and inflation is the inevitable result. Profound supply shocks only tend to amplify the problem, especially for some segments of society. This is doubly true if the shock — whether COVID-19 or climate change or conflict — requires its own expansionary fiscal response. As the previous section discussed, money supply growth is also a key cause of the black-market premium problem. In that case, however, the problem could be resolved by aligning the nominal exchange rate with monetary fundamentals. If this alignment were to be achieved, it would help to address the outer cycle of the

growth syndrome described in Chapter 2, though it would not solve the deeper issue of insufficient foreign exchange generation to support rapid growth (the subject of the next chapter). Some good news from the inflation analysis discussed here is that fears of passthrough effects from devaluation need not continue to undermine stronger actions on exchange rate alignment.

The Fiscal Roots of Ethiopia's Macroeconomic Problems

Since the roots of both inflation and the black-market premium are grounded in fiscal policy, we turn next toward understanding Ethiopia's fiscal policy challenges. Fiscal policy is all about taxing and spending, but both dimensions are more multi-faceted than they may at first appear. Government revenues come from more than just the tax system. Any government also collects non-tax revenue from various fees, investment income and other revenue streams that it generates, as well as through grants and development aid in the developing country context. Governments can also expand fiscal space by borrowing. As we've seen they can borrow from abroad — if lenders are willing to lend — or from domestic sources, including through market-determined domestic bonds, forced purchases of bonds at below-market rates, and simply advancing money from the National Bank to the Government. Forced bond purchases — including at negative real interest rates — are a form of "financial repression" and act like a tax on the financial system. Meanwhile, NBE advances to the government are effectively an "inflation tax".

Spending also includes more than just on-budget expenditures on current and capital line items. In addition to primary, on-budget spending, there are also debt payments on the interest and principal of debt that has been accumulated through past borrowing. There are also off-budget expenditures that sometimes include such things as social security systems and other pensions, public guarantees in housing or insurance markets, and many forms of public enterprises or SOEs. There are various ways that the government must channel money to SOEs for their own expenditures and debt payments. Such payments are often unplanned in medium-term budget frameworks and risks are not well accounted for. For this reason, when evaluating a country's debt sustainability risks, it is often essential to look "below the line" — that is, looking at the debt that is actually taken on by a government and government-backed debt of SOEs, rather than the spending that is captured within planned and executed budgets.

It is important to stress that borrowing money and accumulating debt is not a problem. Just as households and businesses borrow money to make investments today that will benefit them over time, so too must governments. Another concept at play is consumption smoothing, where it is better for a government to borrow money in bad times to buffer the impacts of business cycles on an economy and pay down debt in good times. This is referred to as "countercyclical fiscal policy. But just like households and businesses, governments need to carefully manage their debt risks. If they do not, debt can balloon. At a certain point credit risk will grow and lenders will be unwilling to lend. When a government's debt is unsustainable, this leads to either a fiscal contraction, which can be harmful to society, or worse, precipitates a macroeconomic crisis. The role of fiscal policy

therefore is optimizing the well-being of society over time, which entails borrowing but under constraints of keeping debt risks sustainable.

The following pages discuss fiscal policy in Ethiopia, starting with the revenue side, and especially tax policy. Then we provide perspective on spending, with a focus on SOE spending. The next section then provides a detailed discussion of debt repayment dynamics that have resulted from fiscal policy over time.

Revenues and Taxation

In the presence of such high public investment as in Ethiopia over the last decade (as noted in Chapter 1), one would hope to see revenues growing over time to support the spending push. This has not happened in Ethiopia. Tax revenues over the last two decades have ranged between 9% of GDP and 13% of GDP, well below levels of spending. Since aid has not kept pace with the growth of the economy, grants have declined as a share of GDP. Figure 3.10 shows these trends over time. Total revenues and grants have grown, but not in line with GDP over the past 20 years. Tax revenues alone have grown as a share of GDP at times but have been falling as growth has slowed.

Figure 3.10 shows that tax revenues as a share of GDP declined over the initial phase of the growth acceleration (from 12.5% of GDP in 2003 down sharply to 8.6% in 2008) before rising back to 12.7% by 2014 and then falling again in subsequent years back down to 9.2% as of 2019. Meanwhile, non-tax revenues reported by the government have also declined in total from above 3% of GDP prior to 2004 to around 1% of GDP by 2019. Naturally, grants have fallen sharply as a share of GDP over the two decades shown. Totaling these three streams gives Ethiopia's total revenues and grants, which have fallen more-or-less continuously from 21.2% of GDP in 2002 to 11.7% of GDP in 2019. In other words, the amount that the government can afford to spend based on what it takes in has declined steadily and significantly as a share of the economy, even as spending has grown. The problem has intensified as growth has slowed since around 2015.

Disaggregating tax revenues shows that there are several patterns at play (Figure 3.11). Most strikingly, tax revenues from import duties have fallen the most as a share of GDP over time. This had been the largest source of tax revenue at the start of the growth acceleration but has fallen over time as imports have fallen as a share of GDP. This dynamic is the easiest in the graph to explain. Around three-quarters of the decline of import tax revenue as a share of GDP over 2010 to 2019 can be explained by declining import capacity, with the rest explained by import duty reductions and exemptions. The constraint to growth of insufficient foreign exchange generation to support imports has also kicked off a vicious cycle in the tax system. Even the growth of the import duty reductions and exemptions, including the expansion of Ethiopia's Franco Valuta System — which provides duty-free imports to qualifying importers — trace to this binding constraint to growth discussed in the previous chapter.

Figure 3.10: Government of Ethiopia's Overall Revenues and Grants from 2002 to 2019

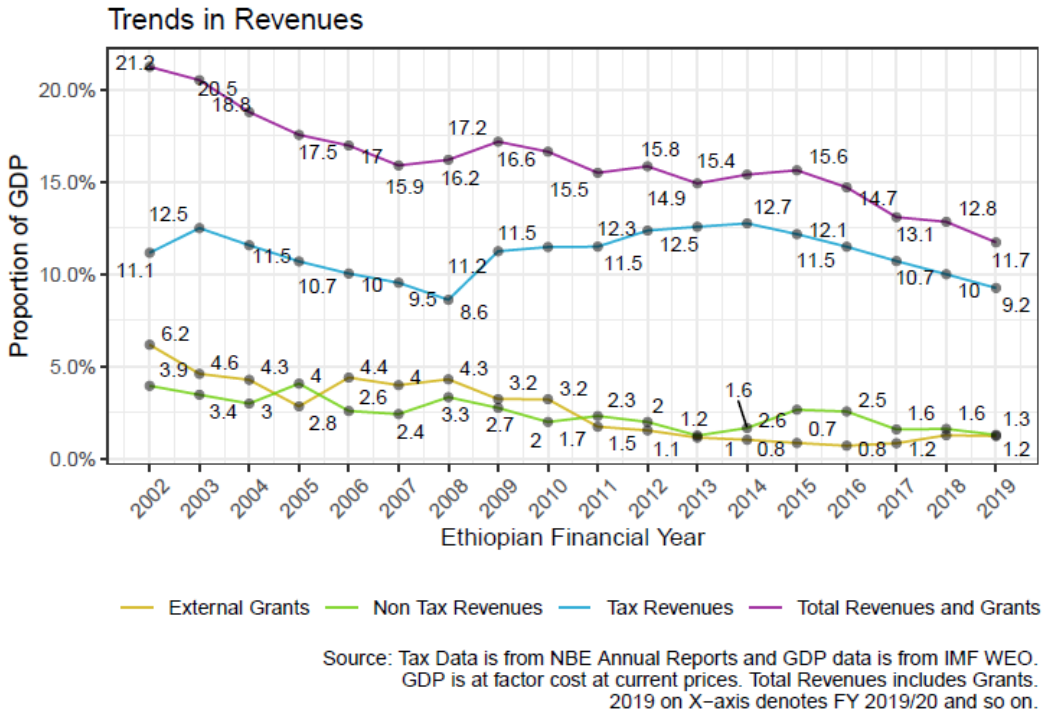
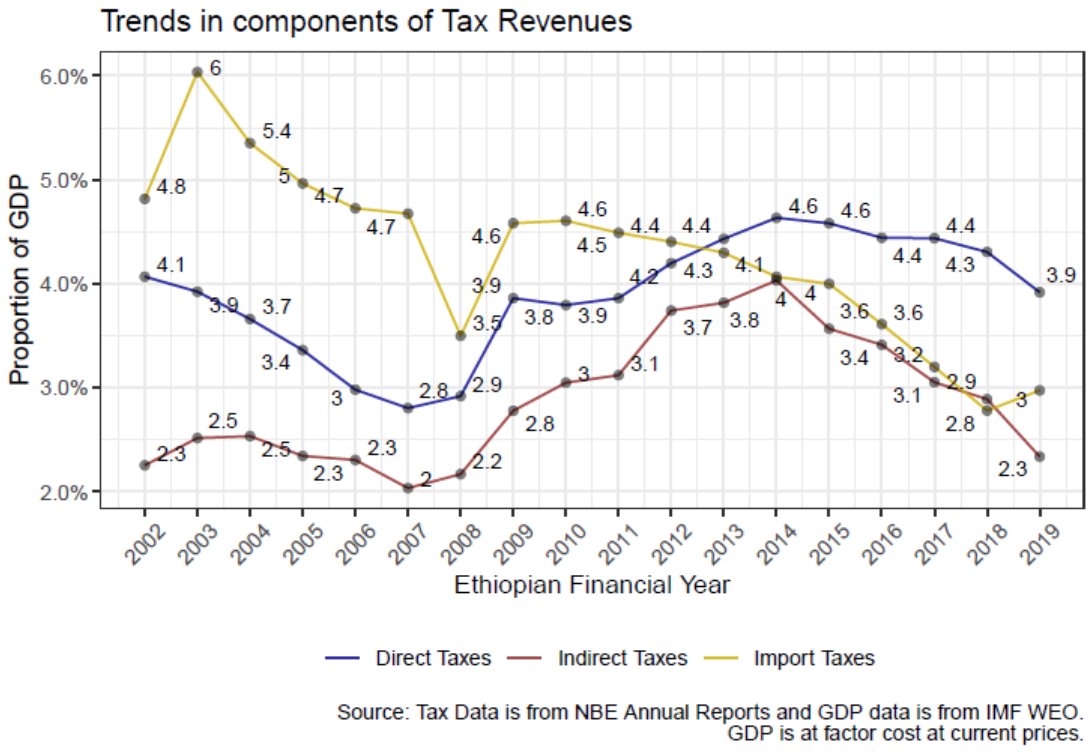


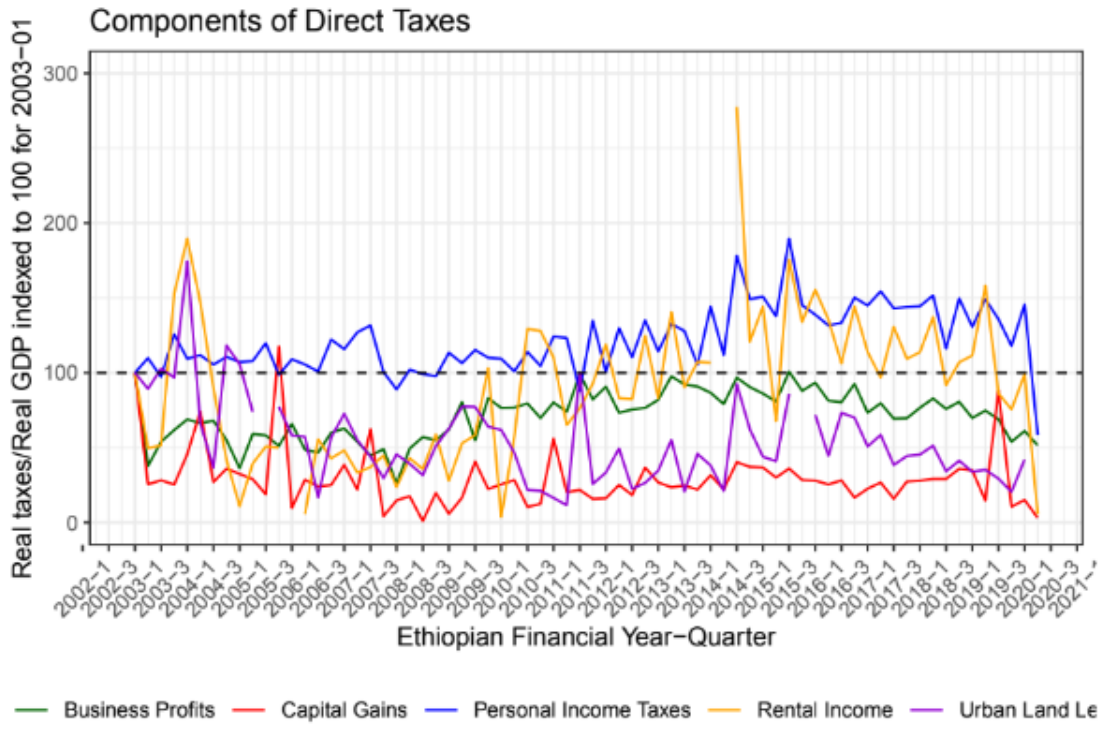
Figure 3.11: Components of Government of Ethiopia's Tax Revenues from 2002 to 2019



Direct and indirect taxes on items other than imports have shown a similar pattern over time. Both fell as a share of GDP during the initial phase, then grew significantly over the period 2008 to 2014, and then have fallen since. A key difference in the two, however, is that direct taxes fell more initially when growth accelerated after 2003 and fell less severely recently. The opposite is the case for indirect taxes which declined slightly originally and declined sharply recently. These dimensions of tax policy are therefore worth understanding more closely.

Direct taxes have been a larger source of tax revenues than indirect taxes. This is generally considered a good thing since direct taxes on businesses, household income, and other sources tend to be much more progressive ways of taxing society than indirect taxes levied on consumption. As of 2019, direct taxes were effectively at the same size as a share of the economy as they were in 2002, but this was hardly a constant story. This broad category of tax revenues had declined as a share of GDP, then rose, then declined again after 2014 but in a much more moderate way than other tax categories. Therefore, this latest decline in direct taxes as a share of GDP can be thought of as bad news that could have been worse. Figure 3.12 disaggregates direct taxes based on public information and tracks the evolution of each tax source as a share of GDP since the start of 2002. The figure indexes each source of direct tax revenue as a share of GDP to 100 at the start of the period to track changes for each component over time. We can see that the overall trend of direct taxes comes from a mix of these components.

Figure 3.12: Direct Tax Revenues as a Share of GDP from 2002 to 2019, Indexed Values



Source: NBE and IMF WEO

The strong growth of direct taxes over 2008 to 2014 was the result of growing personal income taxes, taxes on business profits, and taxes on rental income. This reflects the basis of what was a buoyant tax system where growth in revenues is tied to parts of the economy that where growing. Thereafter, however, total direct taxes fell as a share of GDP since 2014 because all the tax components in the figure did not keep pace growth. The problem after 2014 has been the result of a combination of two things. First, personal income tax collection stopped growing as a share of GDP and started on a declining path before COVID-19 struck. Second, most other direct tax sources saw an earlier decline in tax collection as a share of GDP, including business taxes and taxes rental income. Though this recent decline is less severe than for other taxes, this pattern is clearly problematic. As the growth process has weakened, taxes generated from productive parts of the economy have weakened by even more.

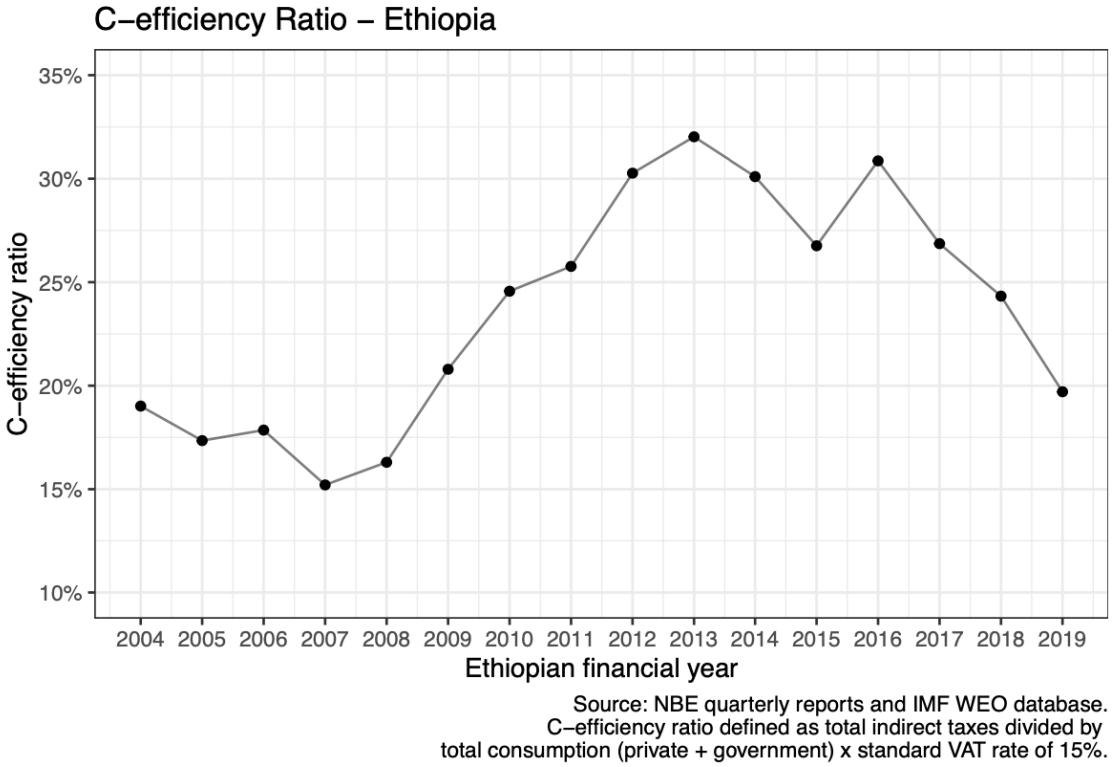
Indirect taxes have fallen more dramatically after 2014, as captured by Figure 3.11. These taxes rose faster than direct taxes as a share of GDP after 2008, as well. Like direct taxes, the size of indirect tax revenue by 2019 was essentially the same as a share of the economy as it was in 2002. Indirect taxes include a value-added tax (VAT), turnover taxes, and excise taxes. The rapid decline tracks that of import taxes, which is surprising given that one might expect economic activity not directly tied to imports to have declined less rapidly over this period. Unlike direct taxes, where multiple components explain the overall trend, the sharp rise and equally sharp fall in indirect tax collection comes from VAT in particular. The sharp decline reflects cause for concern within the VAT system at the heart of this tax category, which has been widely credited as an improvement over the previous sales tax regime that it had replaced in 2003.

This recent pattern may be explained by widespread VAT exemptions on services that have been enacted by the Ministry of Finance, including on such things as financial services, transportation services, and the sale or rental of housing. Figure 3.13 shows the change over time of the C-efficiency ratio of Ethiopia's VAT system, which is calculated as total indirect taxes collected divided by estimated national consumption, further divided by the standard VAT rate (which is 15% in Ethiopia). The rise and fall of the C-efficiency ratio tracks overall indirect tax performance. This shows that it is not consumption that has changed but the design and implementation rather than overall economic performance. Moreover, C-efficiency ratio is now extremely low by international standards. The ratio tends to be over 50% in most countries and has been estimated at close to 40% for Sub-Saharan Africa on average.

These observations on the tax system provide added perspective on why the need for domestic borrowing intensified so much since around 2015. The problem was not only that external financing became less available but also that a significant weakening of tax collection occurred as the process of economic growth slowed. All things equal, this increased the need for financing through either monetization or financial repression or both. Tax collection slowed by much more than the slowdown in growth for a few reasons. One was that tax system was historically driven by import taxes, and these have fallen as import capacity has declined. Another major reason

appears to trace to exemptions in the VAT system, particularly within services rather than goods. Finally, the slowdown in growth of the formal private sector led to lower direct tax collection. Of these causes, two of which are consequence of the growth syndrome discussed in the previous chapter. The challenge of VAT exemptions on the other hand is not as directly linked and may therefore be more possible to address even amidst the growth slowdown.

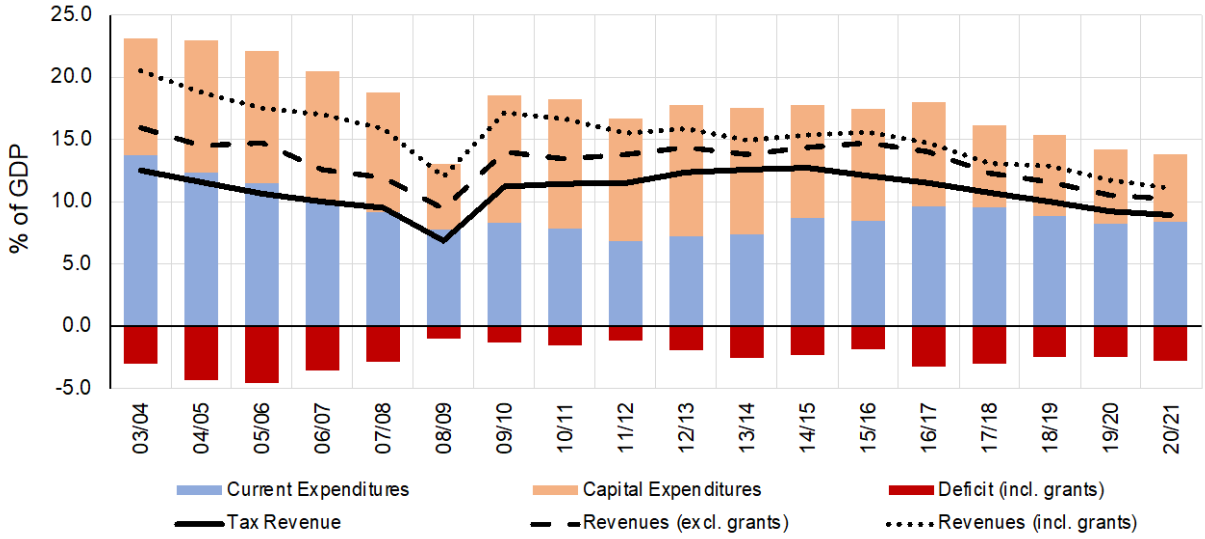
Figure 3.13: Evolution of the C-Efficiency Ratio of VAT



Public Spending, On-Budget and SOEs

We now turn our attention to expenditures. With many parts of the tax system showing weakness alongside the slowdown in growth since 2015, one question is if expenditures also adjusted over this period as well. Another set of questions relate to the nature of spending and the fiscal deficit prior to the growth slowdown. Did public spending balloon before the slowdown and, if so, what types of spending? Figure 3.14 summarizes government on-budget expenditures, broken down by current and capital expenditures, alongside several aggregated revenue totals. From this graph we can see that expenditures were greater than total revenues and grants in each year shown, resulting in a fiscal deficit throughout the period. The fiscal deficit remained relatively small prior to the growth slowdown — peaking at just 2.6% of GDP in 2013/14. As we will see in the next section, this would not be expected to be very problematic for debt sustainability. The deficit has since grown slightly after 2015 but not dramatically. This is because the Government of Ethiopia has cut expenditure levels alongside the declining revenues.

Figure 3.14: Summary of On-Budget Fiscal Accounts, 2003/04 – 2020/21



Sources: NBE for expenditures and revenues; IMF WEO for GDP

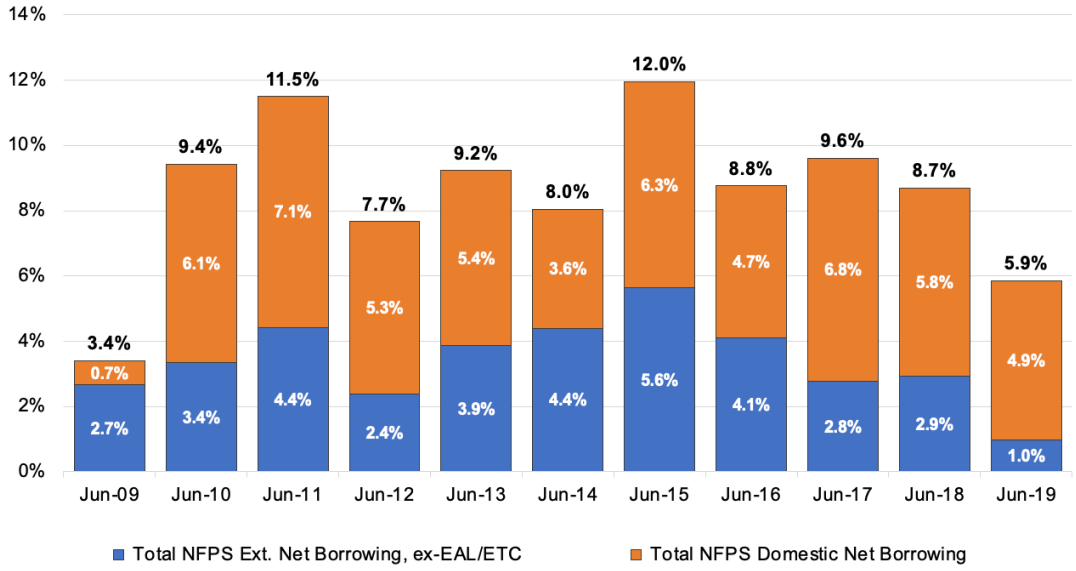
The recent adjustment in expenditures has come primarily through cutting capital expenditures. These were cut from 9.0% of GDP in 2014/15 to 5.4% of GDP in 2020/21. Capital expenditures had averaged close to 10% of GDP from 2003/04 to 2014/15, with the year of the Global Financial Crisis and other shocks of 2008/09 being an abnormal year within this period. Interestingly, neither capital expenditures nor expenditures ballooned during the first Growth and Transformation Plan from 2010 onward. In fact, total expenditures were lower after 2010 than they were for the previous decade. Moreover, tax revenues alone far outpaced current spending during the GTP I. In many cases of countries that run into fiscal trouble, it is due to their current spending obligations — including the public wage bill and large subsidy programs — but this was not the case in Ethiopia. Taken alone, these patterns would not suggest a fiscal problem preceding the growth slowdown. They also would not suggest a substantial fiscal problem after the growth slowdown in terms of macroeconomic stability, though they do amount to a clear challenge to continue to tax and spend at levels that the public needs.

The issue here is that these on-budget fiscal dynamics do not fully capture the total public spending — and particularly the total public deficit — that Ethiopia has been facing. Recall from the previous chapter that investment jumped significantly in 2010 from averaging under 25% in the decade before to over 35% in decade after. This jump in investment does not trace to the on-budget spending summarized in Figure 3.14. In fact, most of investment and all the jump in investment came from beyond on-budget capital expenditures, which averaged only 10% of GDP. This is where things can get a little bit murky to pin down with data. While a significant part of investment is done by private companies, a large share is undertaken by public enterprises, also known as SOEs. Given the abruptness of the jump in investment without a clear private sector driver, we can

infer that much of the growth in investment likely occurred through SOEs. This is public spending, but it is not captured through the fiscal accounts.

This is the reason why changes in debt from year to year in Ethiopia imply a much larger overall public sector deficit inclusive of SOEs. Figure 3.15 is the same figure that was shown in the previous chapter to capture the "below-the-line" estimate of the larger overall public sector deficit that results from looking at actual changes in debt from one year to the next. This is in comparison to the "above-the-line" fiscal deficit that comes from subtracting expenditures from revenues, as was captured in Figure 3.14. In Chapter 2 we were most interested in understanding the role of declining external borrowing after 2015, but here we can take note of how much larger this measure of the overall deficit is. For most of the period of GTP I and GTP II, debt accumulated by roughly 9% of GDP per year on average — more than three times the narrower on-budget deficit. This is when excluding Ethiopian Airlines and Ethio Telecom due to their clearer solvency and thus less risk taken on by the Government of Ethiopia through their government-backed borrowing. However, if these two SOEs were included, the overall deficit would be larger still.

Figure 3.15: Total Net Borrowing of Central Government and SOEs (% of GDP)



Note: Graph excludes the borrowing of Ethiopian Airlines (EAC) and Ethio Telecom (ETC)
Sources: MOF Public Sector Debt Bulletins; NBE Annual Reports

This difference between the narrower fiscal deficit and the *de facto* overall public deficit confirms that SOE spending has been the dominant story of expenditures. Unfortunately, we lack access to public sources of SOE spending data over time. However, we have learned a substantial amount on the nature of SOE spending — and reviewed some available data — through the Growth Lab's research collaboration with the Government of Ethiopia. This work was much less about quantifying the fiscal burden of SOEs in Ethiopia and much more about partnering with the

Ministry of Finance to study long-term challenges of poor performance of many SOEs in public service delivery and debt accumulation that has become the responsibility of the Ministry of Finance to manage. The overall goal of this area of work was to help the Ministry of Finance understand options for better asset and liability management, including full or partial privatization of SOEs where appropriate, as well to help design tools and institutions better oversight of public enterprises.

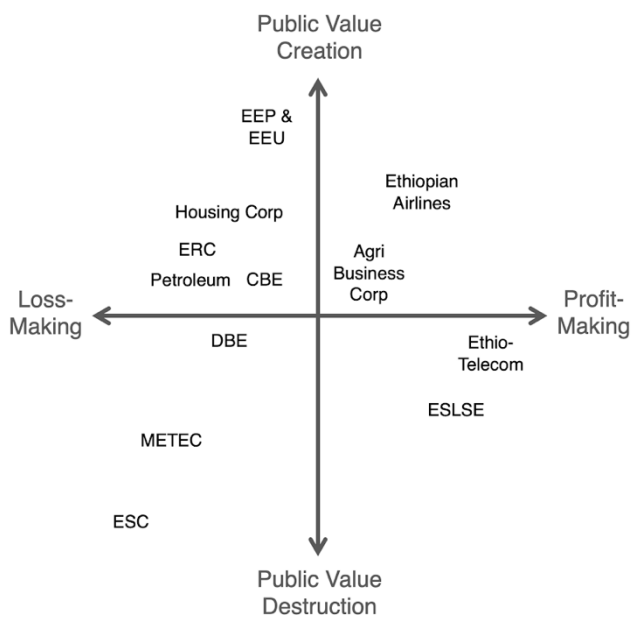
State-owned enterprises (SOEs) are ubiquitous across developed and developing countries alike. Even after a global privatization wave of the 70s to the 2000s, SOEs have increased their weight in the global economy, especially through the presence of SOEs in large, emerging economies. An SOE generates value to society (or "public value") by performing a beneficial role that is not currently fulfilled by the private sector or other segments of society. Public value often comes through the provision of a public good or public service upon which economic activity and/or societal welfare depend. SOEs that deliver public goods and services may be profit-making or loss-making, depending on their commercial orientation, how they are managed, and public policies that structure their abilities to generate revenues. Either scenario may be consistent with generating public value, but an SOEs can also destroy public value even if it is profit-making if those profits come at a larger cost to society. SOEs can also deliver public value without necessarily delivering public goods or services — this includes commercially-oriented entities that maintain state-owned assets and increase their market value. Often, this value comes from the generation of a positive externality, whereby the SOE's activities have positive impacts on the economy beyond their individual financial success.

Occasionally, SOEs can play a critical role for some period, during which time the private sector grows and develops to undertake the activity itself — for example, public banks as foundational organizations in the development of an effective financial system. Ultimately, SOEs generate public value through both direct and indirect contributions to economic value, tax revenue generation, and positive social externalities. However, the moment an SOE does not create public value and is not able to support itself independently, it becomes a burden for both society and public finances. As economies and societies evolve and grow, it is the norm rather than the exception for governments to revisit the roles of their SOEs to ensure that they deliver public value. It is important for governments to take this step and address issues that undermine public value and/or transition out of SOEs that no longer serve a public purpose.

The challenges facing Ethiopia's 40+ SOEs are varied in both their nature and severity. Some fall short of delivering public value and some result in an unsustainable drain on public finances. While many of the problems are isolated, several have important systemic consequences on the country's macroeconomic balances and/or competitiveness that have contributed to a slowdown in economic growth, job creation and poverty reduction. In this context, understanding typologies of problems is especially important. This would be a necessary first step toward identifying optimal policy solutions to address varying SOE problems that have emerged over time. Figure 3.16 provides a

way of classifying SOEs along the dimensions of public value creation and commercial success. The position of the SOEs within the figure are illustrative based on publicly available information but pinpointing their exact position in this typology would require more information.

Figure 3.16: Illustrative Examples of Ethiopian SOEs along Two Key Dimensions



Other SOEs

- Ethiopian Insurance Corp.
- Ethiopian Construction Works Corp.
- Chemical Industries Corp.
- Ethiopian Construction Design & Supervision Works Corp.
- Ethiopian Mineral, Petroleum & Bio-Fuel Corporation
- Ethiopian Trading Business Corp.
- Birhanena Selam Printing Enterprise
- Ethiopian Postal Service Enterprise
- Ethiopian Pulp & Paper S.C.
- National Alcohol and Liquor Factory
- Ghion Hotels Enterprise
- SPA Service Enterprise
- Ethiopian Tourist Trading Enterprise
- Industrial Inputs Development Enterprise
- Ethio-Djibouti Standard Gauge Railway Transport S.C.
- Public Transport Service Enterprise
- Ethiopian Toll Roads Enterprise
- Shebelle Transport S.C.
- Public Service Employees Transport Enterprise
- Adola Gold Mine Enterprise
- Educational Materials Production & Distribution Enterprise
- Ethiopian Petroleum Supply Enterprise
- Ethiopian Standards Agency
- Defense Construction Enterprise
- Defense Construction Design Enterprise
- *…Plus several others*

Source: Own Construction

With reliable financial reporting by SOEs, it would be relatively straightforward to assess most SOEs along the horizontal access in this framework. An exception may be with public banks, whose reported financial data may not capture the quality of their asset portfolio. Having looked at partial financial reporting of many SOEs,[18] we found evidence that 10 SOEs were clearly loss-making. Most of these SOEs were loss-making in most or all years, while some SOEs additionally had either very high debt-to-equity ratios and/or negative equity, suggesting especially high risk. We found evidence, however, that most SOEs are either clearly profit-making or would require a close review to make a clear judgment either way. A key takeaway from this is that it is really a small number of SOEs that are responsible for the countries fiscal challenges.

The vertical access, however, is less straightforward to assess. The basic concept of public value is simple. It is a reflection that everything that a government does should be oriented around the goal of creating value for the public. The value created by public institutions is often harder to quantify than the value created by the private sector, which is reflected (at least in part) by the willingness of consumers to pay for the goods and services that companies produce. Recent

[18] We had information on the following operational indicators: (1) total revenues; (2) average revenue growth; (3) average EBIT growth; (4) average profit margin; (5) average return on equity; and (6) average debt-to-equity ratio.

literature proposes that there are four key dimensions of assessing public value: (1) outcome achievement; (2) trust and legitimacy; (3) service quality delivery; (4) efficiency.[19] A challenge emerges when some SOEs are both loss-making but also play critical roles in expanding public infrastructure and improving public services.

A few SOEs in Ethiopia may be illustrative of key positions along the two dimensions of Figure 3.16. Ethiopian Electric Power (EEP) has a core problem of debt generation but not of public value. Some local media reports have cited CBE's total lending to EEP at around 10% of GDP. EEP's investments, which have a clear case for high public value given Ethiopia's historic energy shortfall, have yet to generate the profits necessary to service the company's very large debt. This presents economic and financial risks to the government. On the other hand, some SOEs may be commercially successful but damaging to the economy through poor services or crowding out of the private sector. Ethiopian Shipping and Logistics Services Enterprise (ESLSE), for example, is consistently profitable and does not carry much debt. However, its monopoly control over freight and maritime transport, dry port management, and other areas has contributed to high costs and poor-quality logistics, a frequent complaint of businesses across the country. Still other SOEs are neither generating clear public value or commercially sustainable. This may be the case for the Metals and Engineering Corporation (METEC) or the Ethiopian Sugar Corporation (ESC), which have faced well documented and severe problems in both dimensions.

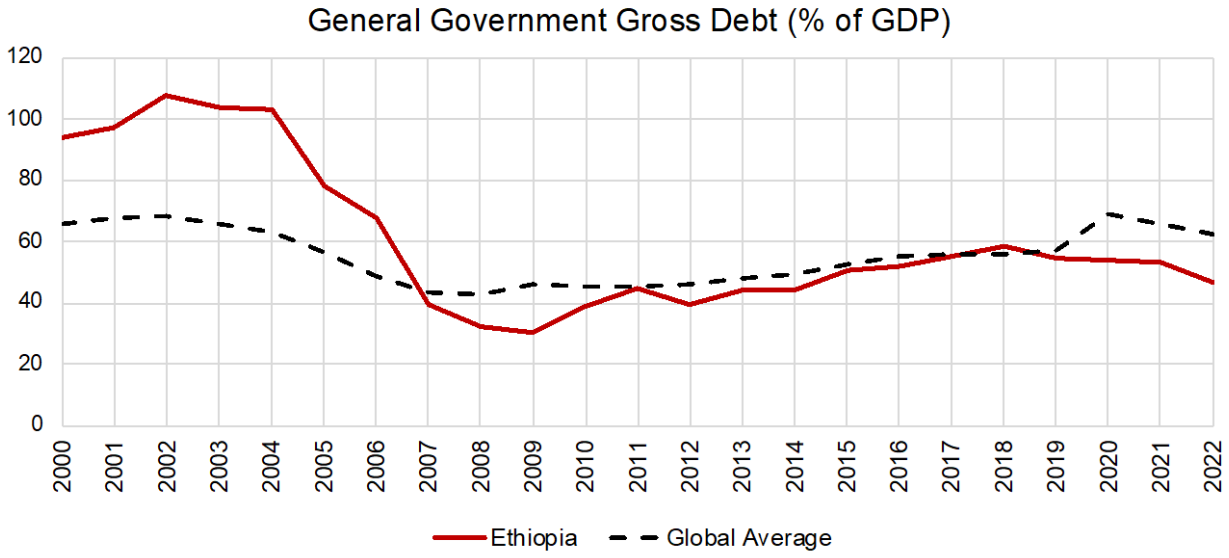
For SOEs that are loss-making in this framework, different strategies are warranted whether they are in the top-left or the bottom-left quadrant. Some SOEs that are in the top-left quadrant of Figure 3.16 may be able to move into the top-right quadrant with appropriate government actions. SOEs that deliver neither public value nor financial value are more difficult cases. Meanwhile, for SOEs that are in the bottom-right quadrant, it may be important to understand the type of public value problem to determine needed government responses, even if the problems of these SOEs are not fiscally critical. International experience suggests a range of. Some literature on SOES problems divides the issues that lead to bad outcomes into two main categories: (i) corporate governance problems and (ii) fiscal governance problems. Corporate governance problems are those that derive from principal-agent problems and result in underperformance of the SOE against its public mission, whereas fiscal governance problems are those that result from a lack of appropriate structures to protect either the SOE or the government from poor fiscal management by the other. A single SOE can certainly face both problems at the same time. Looking at Ethiopia's wide portfolio of SOEs, we would suggest a third category where public enterprises may lack a clear public mission. If an SOE is not designed to deliver public value in its core mandate, this will be a problem regardless of any corporate governance and fiscal governance issues. Several ideas toward tackling these multiple types of SOE problems are discussed at the end of this chapter.

[19] See "Avoiding Theoretical Stagnation: A Systematic Review and Framework for Measuring Public Value" (2017): https://onlinelibrary.wiley.com/doi/10.1111/1467-8500.12251

Debt Sustainability Revisited

As Ethiopia embarked on the GTP public investment push, general government net borrowing widened from close to 0.5% of GDP in 2009 to almost 3% of GDP by 2017 and has been at close to 2% of GDP since (IMF WEO). Total government net borrowing has tracked this closely and has been at about 3% of GDP since 2017. (IMF WEO). For reasons noted earlier on fiscal policy, this is not necessarily a signal of a problem on its own as national governments rarely run balanced budgets for good reasons. In fact, they do not need to do so to remain fiscally sustainable. If the rate of economic growth of the national economy (in real terms) is larger than the rate of interest on existing national debt, the government can run a primary deficit (up to a certain level) and still maintain a constant or declining trajectory of debt-to-GDP (see Box 3.6 for a primer on debt dynamics). For much of the last two decades, Ethiopia has had both high growth and low interest rates on its debt, due to a significant share of concessional loans in its external debt and financial repression keeping interest rates on domestic debt very low. Nevertheless, general government debt did begin to grow after 2009, though to a level that is average by global standards (Figure 3.17). Recall that Ethiopia benefited from debt cancellation in the mid-2000s, which is responsible for the large drop in debt at that time.

Figure 3.17: General Government Gross Debt – Ethiopia and Global Average



Source: IMF WEO

The results of Ethiopia's actions to reduce its total debt accumulation can also be seen in this figure as debt-to-GDP reached its recent peak in 2018 and has been on a declining trajectory since. This is even as most countries borrowed significantly in 2020 in response to COVID-19. A good place to start to understand why Ethiopia reduced its borrowing needs is to look back at the Debt Sustainability Analysis (DSA) assessments by the International Monetary Fund at the time. When GTP II was launched in 2015, Ethiopia did not have any active support program from the IMF in

place, but the IMF did conduct a roughly annual Article IV assessment in Ethiopia as part of its regular country surveillance efforts. One can look at debt sustainability analyses included in each of the IMF Article IV reports on Ethiopia in 2015, 2016 and 2017 to see how debt sustainability concerns evolved over the period where growth slowed down, the foreign exchange constraint tightened, and inflation began to accelerate.

- In 2015, the IMF's DSA started with the sentence, "Ethiopia's external debt remains sustainable, but the risk of external debt destress has increased from "low" to "moderate" due to weak export performance and higher than expected non-concessional borrowing, reflecting faster execution of the government's investment program." It goes on to explain that if the public investment is a time-bound push that generates exports, the risk of debt distress will go along with it.

- In 2016, the IMF's DSA found that "external vulnerabilities have increased" as exports underperformed and as drought required scaled up food imports. By this time, Ethiopia had passed a threshold used by the IMF on debt-to-exports, which is one standard indicator of debt distress used. The general problem was that the public investment push was looking larger than planned — due to cost overruns, oversight issues, and expanded priorities — while the export gains were underrealized.

- By 2017, this dynamic continued to worsen. Now two indicators of external debt distress surpassed thresholds — both the net present value of external debt-to-exports and debt service-to-exports — though not other indicators that look at debt in comparison to GDP or debt payments in comparison to revenues. Debt sustainability concerns were on the margin of external debt destress and the government had already taken some action as advised by the IMF to reduce external borrowing and better manage non-concessional borrowing of SOEs.

Over this period, lenders became increasingly concerned about Ethiopia's external debt position and the Government responded by reducing its new borrowing from external and foreign-denominated sources, as discussed in the previous chapter, and eventually its borrowing overall. Ethiopia's external debt stock as a share of gross national income parallels the overall debt stock in Figure 3.17. This ratio peaked at 33.2% of GDP in 2018 and declined gradually to 28.4% of GDP by 2020. But while Ethiopia reduced its accumulation of debt and external debt, exports continued to struggle. As a result, external debt distress not only remained high as of the IMF's 2019 DSA but may have worsened. The impacts the reduction in external debt accumulation may have had the unfortunate consequence of increasing the foreign exchange shortage — directly and indirectly as discussed in Chapter 2 — and thus worsened the external debt sustainability rather than improved it. This raises an important question of whether there could be better approaches to addressing this problem.

Box 3.6: Primer on Debt Dynamics

The following equation and the relevant narration is adapted from González-Rozada, Neumeyer & Soylu (2022). Consider the following equation for the evolution of debt:

$$\underbrace{f_t}_{1} + \underbrace{t_t}_{2} + \underbrace{b_{t-1}\left(\frac{(1+r_{t-1})}{(1+g_t)(1+\pi_t)} - 1\right)}_{3} + \underbrace{b^*_{t-1}\left(\frac{(1+r^*_{t-1})(1+\epsilon_t)}{(1+g_t)(1+\pi_t)} - 1\right)}_{4} =$$

$$\underbrace{(b_t - b_{t-1})}_{5} + \underbrace{(b^*_t - b^*_{t-1})}_{6} + \underbrace{(d_t - \frac{d_{t-1}}{(1+g_t)(1+\pi_t)})}_{7}$$

where f stands for the primary deficit, b and b* denote nominal domestic foreign currency debt respectively, and d stands for deficit monetization, and t stands for a residual. These terms are shown as a share of GDP. Additionally, g stands for the real growth rate of GDP, π stands for year-on-year inflation, r and r* denote nominal interest rates on domestic and foreign currency debt, and ϵ denotes year-on-year exchange rate devaluation.

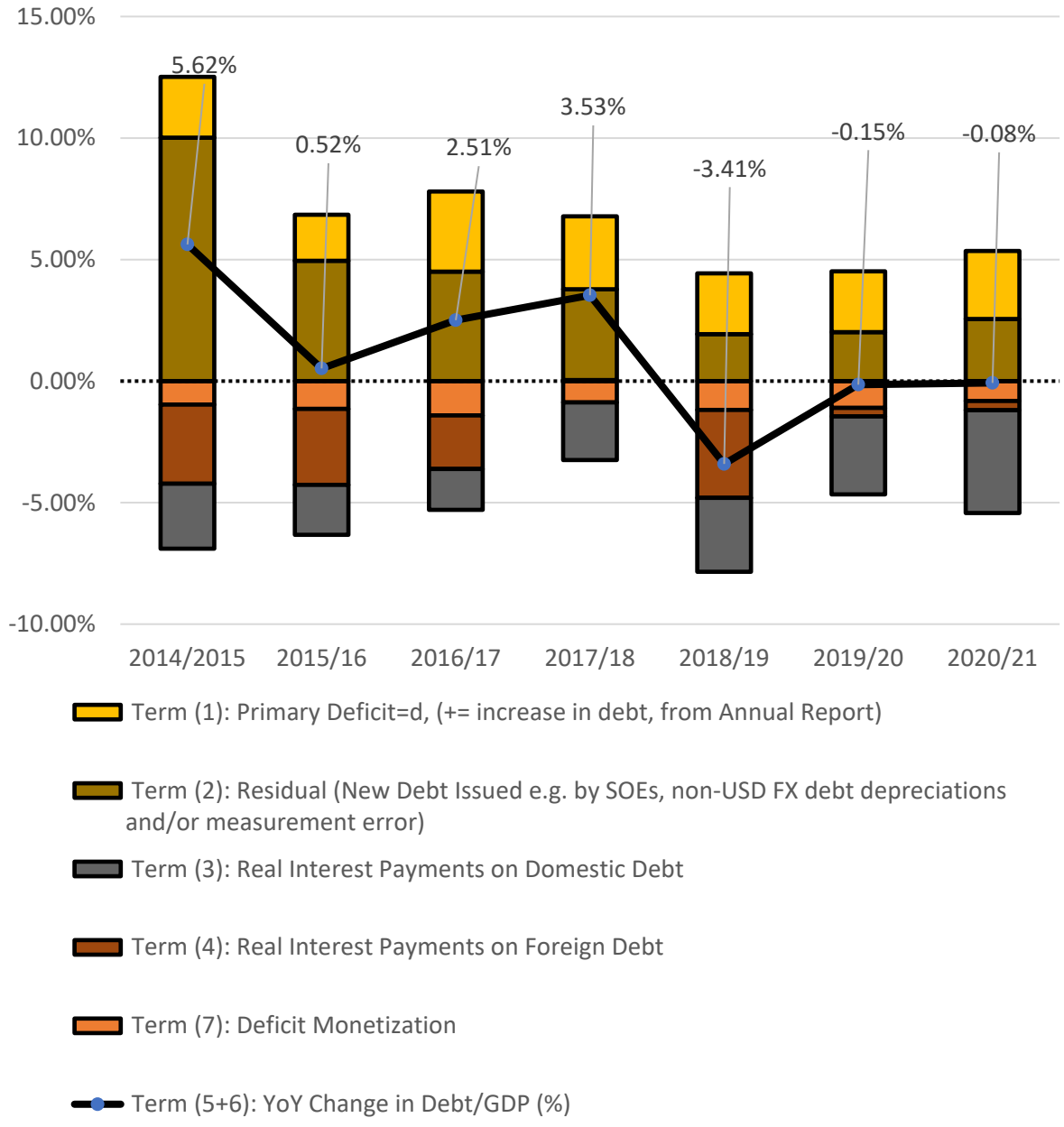
The terms on the left side of the equation together amount to the portions of public spending that need to be paid for above and beyond what government revenues can support. The terms on the right side of the equation represent means of financing this spending, including through increases in domestic debt (5), increases in foreign debt (6), and/or changes in the net domestic assets of the central bank (7), when the relevant terms are measured as a share of nominal GDP.

It follows that the size of the primary deficit and the scale of growth (g) relative to the average interest rate on existing debt (r and r*) are important determinants of the debt sustainability. In addition, all other things equal, high inflation works to lower debt sustainability risks. In any given period, the government inherits a given stock of foreign and domestic debt, while the variables it controls include the primary deficit, money creation, and, to some extent, inflation.

Changes in Ethiopia's debt-to-GDP ratio can be further decomposed, as is shown in Figure 3.18. This exercise decomposes changes in line with Box 3.6. This suggest that the debt trajectory is being kept in check by a combination of deficit monetization and financial repression. Deficit monetization reduces the need for borrowing — term (7) in the exercise — and is also keeping inflation high. High inflation, when combined with low interest rates on domestic debt (in many cases forced low rates through tools of financial repression), results in the important role that term (3) plays in keeping debt-to-GDP on a stable-to-declining path. This is even as the government runs a primary deficit of 2-3% of GDP — term (1) — and additionally takes on debt of SOEs, which contributes the large residual term (2) in this exercise. When terms (1) and (2) are taken together, this indicates that the government overall (inclusive of SOEs) has been running an

average primary deficit above 6.9% from FY2014/15 to FY2020/21. Since FY2018/2019, this combined primary deficit measure has averaged 4.8% and overall debt remains on a sustainable path in terms of debt-to-GDP due to the inflation tax and financial repression. This underscores the importance of tradeoffs when sequencing macroeconomic policy decisions under multiple distortions. If Ethiopia were to reduce deficit monetization and inflation, it would be expected to worsen debt sustainability.

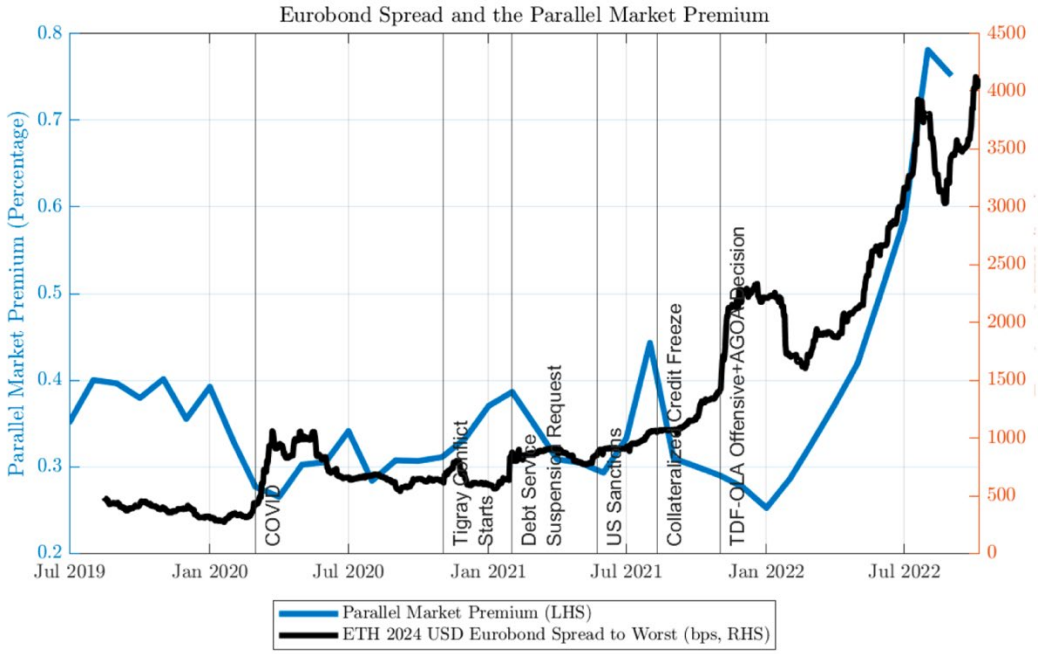
Figure 3.18: Decomposing Recent Changes in the Debt-to-GDP Ratio



Source: Growth Lab analysis using data from IMF and the Debt Management Directorate of the Ministry of Finance in Ethiopia

Ethiopia's recent debt dynamics would not suggest that there would be dramatic changes in market assessment of risk and credit ratings of the Government of Ethiopia. However, dramatic changes have in fact been the norm over the last few years (Figure 3.19). Ethiopian bond yields increased sharply — indicating increased risk assessment by markets — in the first half of 2020 with the emergence of COVID-19. This was a common pattern across countries, but Ethiopian bond yields did not return to pre-COVID levels as they did for many other countries. Instead, Ethiopia has seen international market risk increase with conflict-related events and other factors. In 2021, Ethiopia was one of the first countries to request debt service suspension under a G20 initiative, the "Common Framework Beyond DSSI," that was intended to help vulnerable countries. But rather than receive such support and gain valuable fiscal space, markets increased their risk assessment of Ethiopia, especially as the program implied that this might require negotiations with private creditors. In early 2021, Ethiopia's credit rating was also downgraded by S&P, which appeared to be more related to the G20 request than fundamentals of debt sustainability. In 2022, yields have grown sharply, as has the black-market premium for foreign exchange in Ethiopia thereafter.

Figure 3.19: Ethiopia Bond Yields, Black-Market Premium, and Key Events



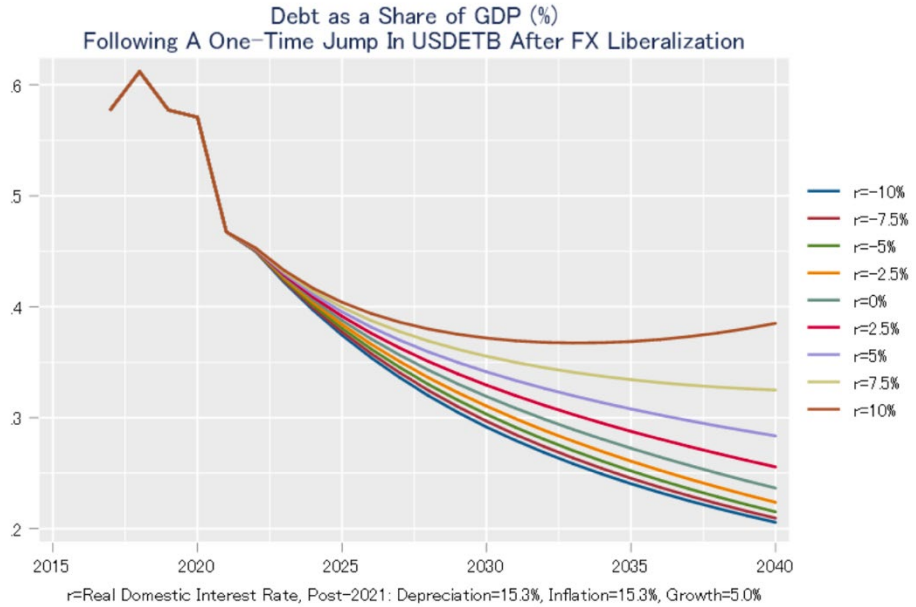
Sources: Capital IQ and Growth Lab collection of black-market rate information reported on various sources including Facebook and Bloomberg

Given the relationships between exports and (external) debt sustainability as well as foreign exchange scarcity and overall macroeconomic risk, it is useful to analyze how changes in exchange rate policy could impact debt sustainability. We conducted several simulations toward this end in 2021. In a baseline simulation, we set a constant deficit at 1.5% of GDP and an inflation rate of 15% (the average of the previous three years) over the years ahead, both of which would be substantial reductions versus what we see today in 2022. In further simulations we explored

implications of a theoretical unification to the black-market exchange rate and an accompanying temporary jump in inflation due to passthrough, and then a constant rate of depreciation aligned at 15% to align with inflation thereafter. Debt that is owed in foreign currency becomes more expensive in these simulations because of the depreciation. In these simulations, debt that reaches maturity is rolled over into loans of the same amount. Before the rollover, the debt has a certain fixed interest rate, and after the rollover we simulate using various interest rates on this debt. Deficit monetization over time is calculated for the purpose of this exercise based on a budget constraint equation and the fiscal deficit that cannot be monetized is equally distributed across different maturities of debt.

Figure 3.20 shows the results of this simulation of debt-to-GDP when the exchange rate unification happens in March 2021. The initial upward jump of the inflation rate after sudden unification decreases the overall debt-to-GDP ratio since while the foreign debt would increase with depreciation, the chunk of domestic debt with the fixed rate would shrink by more in real terms. The simulation suggests that in case of steady growth (at 5%) and steady inflation and depreciation rates (at 15%) debt-to-GDP would follow a downward trajectory. This would only reverse over the longer-term at a high real interest rate on domestic debt of upwards of 10%. We test risk scenarios on top of this that include lower growth rates and a higher depreciation rate relative to the inflation rate, and we find that under some conditions the debt-to-GDP ratio could destabilize. But even under these risk scenarios, debt-to-GDP would not be expected to rise until around 2025, with high inflation helping to offset this for about five years.

Figure 3.20: Simulated Results of Debt-to-GDP after Rapid Exchange Rate Unification



Sources: Growth lab simulations based on IMF and Debt Management Directorate data

In total, we can see that the Government of Ethiopia ultimately responded increasing fiscal challenges by limiting debt accumulation and improving some aspects of its debt sustainability profile. However, in the presence of a persistent total government deficit, this required domestic financing by other means — a combination of deficit monetization, resulting inflation, and financial repression to keep real interest rates on domestic debt low. While this has kept debt sustainable by some measures, Ethiopia is still treated as having high debt distress by the market as well as by the IMF. This is due to a continuing problem of external debt distress that comes less from the levels of external debt and more from the level of exports, as well an international credit market that seems to be penalizing Ethiopia for reasons beyond debt sustainability fundamentals.

Theoretically, the Government of Ethiopia could have responded to the *de facto* external debt limit it had reached around 2015 differently. It could have dramatically cut public investment to a point where the overall fiscal balance was in surplus, after accounting for debt payments. The cost of doing so would have been a sharp collapse in economic growth, poverty alleviation, and gains in wellbeing. Many public inputs that the economy needed to grow would have remained unprovided, including many where significant spending had already been made but projects had years until completion. The government did not take this approach. It did make meaningful adjustments to planned spending and began to develop stronger Ministry of Finance oversight over SOE's borrowing, but the total public sector, inclusive of SOEs, continued to run a deficit and one that was larger than external grants or narrowing use of external loans could cover. Therefore, in the absence of a dramatic improvement in tax revenues — which could only be achieved gradually — the government needed to finance the underfunded portion of the public deficit by these other means, with subsequent problems. Even still, our simulations suggest that the black-market premium could be addressed to soften the binding constraint to growth without harming debt sustainability.

Financial System Tradeoffs – Deepening and Repression

We have referred in this chapter to the practice of financial repression several times without defining what the term means in the Ethiopian context. Financial repression refers to a system where financing is channeled from the private sector to the government via non-market means. This ultimately involves policies that keep the interest rates on government bonds artificially low — in fact, negative in real terms in Ethiopia. This can be done by the government forcing banks or other private actors to buy low-yield government bonds, along with supporting policies to maintain this practice. This includes capital controls that prevent citizens and private actors from moving their money abroad, because without such controls, the forced savings at low or negative returns would be unsustainable as money would exit the system in search of real returns in other jurisdictions. As we have seen, financial repression has been important as a means of financing the overall public sector deficit in a way that does not allow debt to become unsustainable. Efforts to remove financial repression have debt sustainability implications and — in the absence of reductions in financing needs — lead to increased needs for other domestic borrowing.

Until 2019, Ethiopia had a classic example of financial repression. By NBE directive, banks other than the government owned Commercial Bank of Ethiopia and the Development Bank of Ethiopia, were required to buy central bank bills that were equal to 27% of new loans.[20] This so-called "27% rule" was a way of channeling private money to the government because the interest rates on these loans were very negative in real terms. As a result, it was effectively a tax on banks, which they pass on through the financial system. In its design, this mechanism was intended to capitalize the Development Bank of Ethiopia, which itself does not hold deposits, but, since money is fungible, this could be used for other purposes as well. Other specific means of financial repression included GERD bonds, which were bonds issued, again at negative interest rates to civil servants and other Ethiopians, principally to fund the Grand Ethiopian Renaissance Dam.

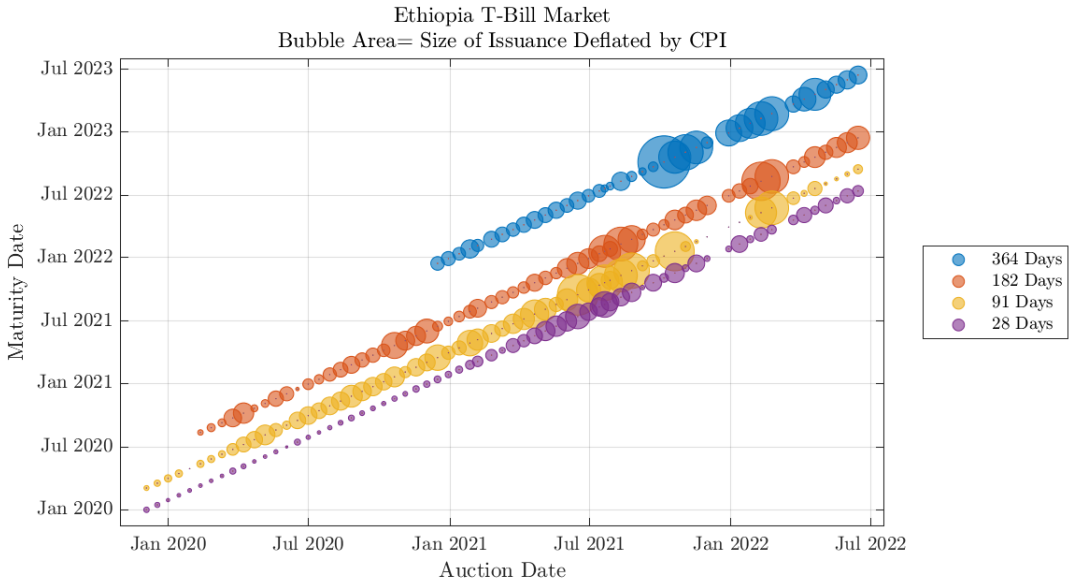
Although the government continues to rely on financial repression, it has also pursued strategies toward financial deepening. This has been an important component of its Homegrown Economic Reform (HGER) Program, which is analyzed at length in Chapter 5. One dimension of financial deepening is expanding the banking system to reach more people. This has been ongoing for some time as Ethiopia's private banking system has expanded both in the number of chartered banks and dramatically in the spread and access to bank branches over the last two decades. Per the latest NBE Annual Report, Ethiopia had 17 private banks as of 2020 (vs. 9 in 2003) and 7,344 bank branches (vs. 358 in 2003). This enormous growth means that Ethiopia by 2020 had one bank branch for roughly every 14,000 people, whereas in 2003 it only had one bank branch for every 186,000 people. The insurance market has also grown substantially, and microfinance has grown as well, though not as rapidly as larger scale banking.

A more recent development with HGER is the expansion of treasury bill issuance, or "T-Bills," through auction at market-determined interest rates. This is viewed as an important initial step toward modernizing the domestic bond market over time. As shown in Figure 3.21, T-Bill issuance has expanded since 2020, initially in very short-term maturities and later including maturities up to one year. The expansion of domestic borrowing instruments, at least in principle, can help finance the government without deficit monetization. This is a positive development in many respects. This expanding market can also reduce the use of explicit financial repression instruments that bond purchases by banks and other members of society at highly negative real interest rates, which has arguably distorted all sorts of asset prices. The overall deepening of the financial system also requires a healthy and deep T-Bill market, since government securities serve as collateral. However, this has only been a partial change so far. Market-determined interest rates on T-Bills have remained highly negative in real terms. They are attracting buyers only because they are more attractive than other options. Interest rates on T-Bills have been generally rising. In the first half of 2021, the average weighted nominal yield rose from around 6.5% to 9.5% and then settled back

[20] https://www.capitalethiopia.com/capital/nbe-repeals-controversial-bond-bill/

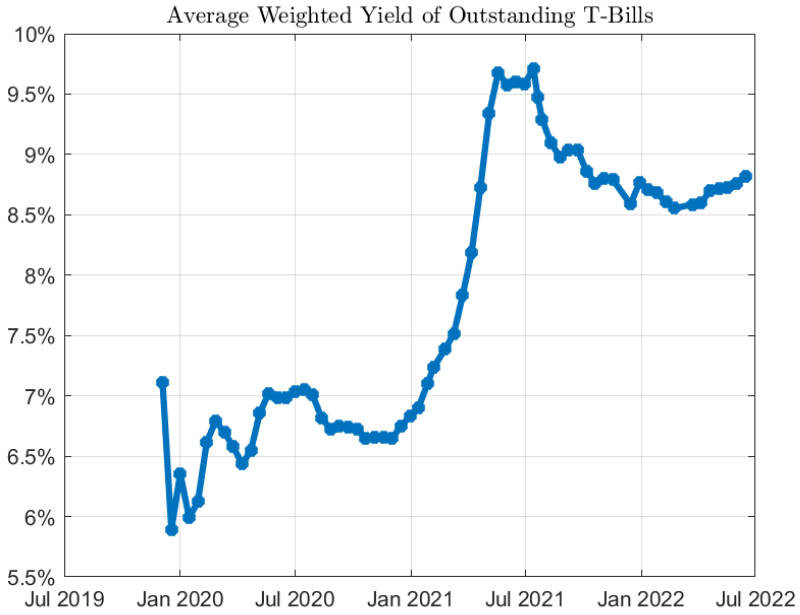
closer to 9% (Figure 3.22), which is far above very low fixed rates of the past but still well below the rate of inflation.

Figure 3.21: Tracking of T-Bill Issuance by Maturity Over Time



Source: NBE

Figure 3.22: Average Yield of Outstanding T-Bills Over Time



Source: NBE

All things equal, larger T-Bill issuance implies that the government pays a higher interest rate to finance the deficit than forced bond purchases. Since T-Bills remain only in short-term maturities, this does not fundamentally change the government's financing position. Today's T-Bills only become tomorrow's financing needs, including the cost of interest. In the absence of major changes in tax revenue mobilization, government must therefore issue larger and larger amounts of T-Bills in the market to rollover bills as they become due. If these do not fully finance the deficit, then the government must still rely on explicit tools of financial repression and on deficit monetization.

In theory, one would expect growth in T-Bills to result in less growth in money supply and less inflation (at least in the short run) since it should imply less deficit monetization. However, the opposite may be true in practice. This is because it appears that recent bond purchases by banks were done by drawing down their reserves, which remained above NBE reserve requirements. This allowed them to increase their lending. This has increased the money multiplier over time. For a period in 2020-2021, unlike in past years, the money multiplier explained more of the growth in money supply than growth in the monetary base. In other words, the two forms of financial deepening — expanding the banking system and issuing T-Bills — taken together can the impact of increasing inflation even though the T-Bill expansion was intended, in part, to reduce the need for an inflation tax. This might be addressed in the short-term by increasing reserve requirements of banks, which was announced in August 2021.

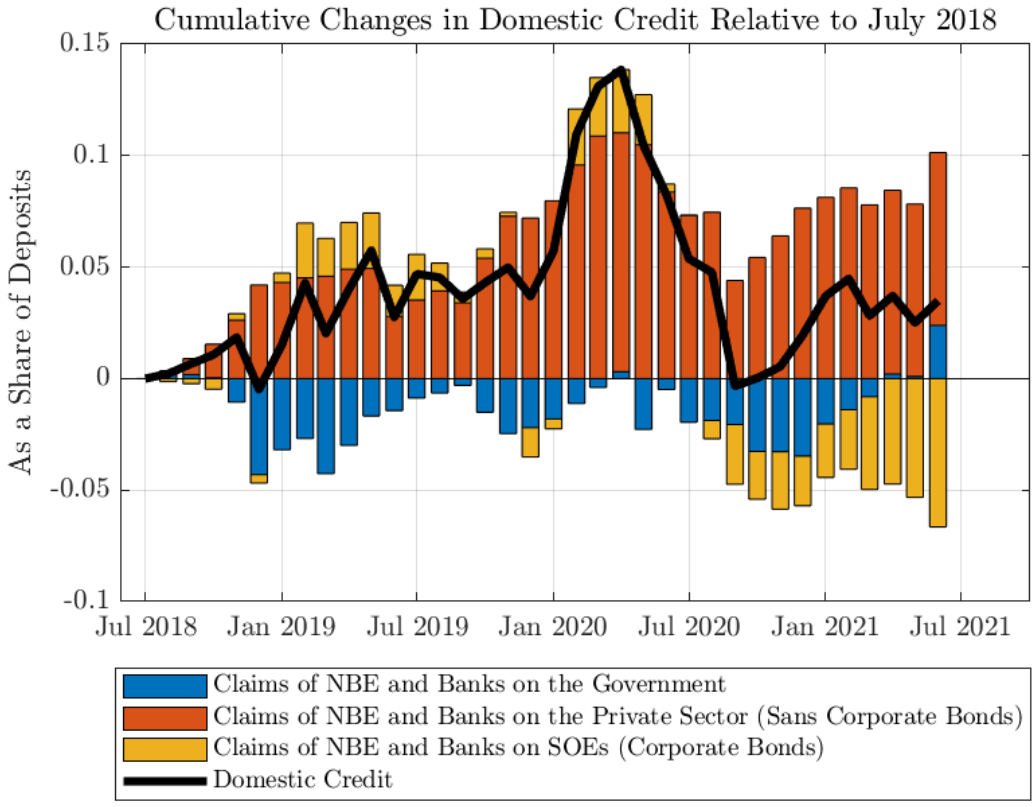
Within the financial system, the state-owned Commercial Bank of Ethiopia continues to play a large role in the functioning of the economy. The CBE serves commercial customers but also plays a key role in being the bank for all SOEs. In doing so, the CBE absorbs the financial risks of SOEs but also serves as an easy conduit for advances from the NBE to backstop SOE finances. It is unclear what the CBE's non-performing loans would look like if it did not benefit from this and other special operations. The CBE is also able to channel foreign exchange more easily than other banks as a public entity, which is also not subject to the surrender requirement that other banks face. Meanwhile, the Development Bank of Ethiopia is smaller in scale but faces many well-documented challenges. One role of DBE is to lend to parts of the private sector that are considered riskier, but it is not clear that this role is needed anymore with the rapid growth of the private banking system. It is likely that banks are now capable of financing these activities better than the public bank. If this role was transferred to private commercial banks, it would also allow for the DBE to transition to play alternative roles that could deliver more public value.

Ethiopia's financial system is clearly in an overall state of tension. On the one hand, the government wants to modernize and deepen the financial system to better serve the needs of society and to allow for domestic borrowing of the government with fewer distortions. At the same time, spending needs continue to require some degree of financial repression. Removing too much financial repression too fast comes with accompanying debt sustainability impacts as well as impacts on inflation by indirectly leading to more deficit monetization. Maintaining financial repression also requires maintaining capital controls. On top of this, the Government of Ethiopia

has been reluctant to allow the entry of foreign banks into Ethiopia, though this would expand the capabilities of the industry, particularly in the realm of mobile banking, which could serve Ethiopia's rural population better as it has in Kenya and elsewhere. Some limitations on foreign banks may be lifted soon, but it is also unclear if foreign banks would enter given capital controls that prevent them from freely moving money out of the country.

Despite significant constraints, there has been a dramatic expansion of the private banking system in Ethiopia, which serves private firms and households, even as state-owned banks also continue to play an outsized role in the system by serving Ethiopia's large portfolio of SOEs. Overall, private banks and financial deepening are winning out in the overall mobilization of credit. Figure 3.23 shows the extent of this fact over recent years. Credit to the private sector (outside of corporate bonds to SOEs) have grown as a share of deposits since 2018. This credit declined for several months at the start of the COID-19 pandemic but then began to grow again. In the period since July 2018, claims on SOEs have declined as a share of deposits, especially since the start of the pandemic. Contrary to what many believe, credit to the private sector outside of SOEs represents a growing majority of credit.

Figure 3.23: Domestic Credit Change Decomposed Over Recent Years



Source: NBE

Financial system modernization ultimately will require not only public borrowing at market-determined interest rates, as the expanding T-Bill market is providing, but more market determination of interest rates within the entirety of the financial system. Currently, the lending rates of banks remain negative in real terms. Given fiscal dominance, the NBE is limited in the realm of monetary policy. Central banks can usually set either the interest rate or monetary aggregates — when one is set the other one follows. Officially, the NBE targets monetary aggregates, however, as our discussion of fiscal dominance shows, money creation is a result of fiscal policy and the NBE does not have complete control over the monetary base. The main lever that remains available to the NBE, in the realm of monetary policy, is therefore management of the money multiplier via reserve requirements. In this dimension, financial system oversight by the NBE has also tended to support financial deepening, which is at odds with addressing the inflation challenge. We can see this in a rising money multiplier over the last decade, with a temporary reduction during the pandemic (Figure 3.24). The rising money multiplier implies a reduction in control of money growth that the NBE has through its control of NDA growth. Growth in the monetary base now translates to a much larger growth in money supply than it did prior to the year 2012.

Figure 3.24: The Money Multiplier Over Time

Source: NBE

Exchange Rate Policy and Monetary Policy Imbalance

Dimensions of exchange rate and monetary policy were discussed previously in this chapter as they relate to the problems of foreign exchange shortages and inflation. There is a fundamental misalignment between the nominal exchange rate and growth in money supply, where depreciation does not keep pace with growth in net domestic assets and overall money supply. This misalignment worsens the mediation of scarce foreign exchange and causes the black-market

premium and the need for highly complicated and inefficient rationing mechanisms of distributing foreign exchange across the economy. Now we can return to this central policy problem with an understanding of fiscal policy issues, debt dynamics, and tensions in the financial system.

We have also now seen the limitations of monetary policy levers in Ethiopia given that interest rate setting policy is limited by the need to maintain financial repression and how targeting of money aggregates is undermined by fiscal dominance. The NBE also exercises some macroprudential authority over the financial system, but reserve requirements on banks have tended to be low such that they do not bind banking decisions. Under these conditions, private firms tend to have much easier access to credit from private banks than they have access to foreign exchange for import purchases. In other words, foreign exchange is much more binding to the growth of the private sector than is access to credit. The NBE is pursuing numerous strategies to improve monetary frameworks and modernize systems — as will be summarized in Chapter 5 — but arguably exercises its most prominent role in the economy at present in how it sets the nominal exchange rate and how it adapts foreign exchange management through its many foreign exchange directives.

There are essentially three components of Ethiopia's foreign exchange regime: (1) the official exchange rate; (2) the system of rules and regulations for foreign exchange allocation and rationing; and (3) capital controls that prevent the free movement of money across borders. The first component of the official exchange rate regime is essential to improve, and sections leading up to this have shown that a better alignment with monetary policy is possible without meaningfully worsening inflation nor undermining debt sustainability further. The second component includes many inefficiencies (see Box 3.7), but these are generally a symptom of the exchange rate misalignment rather than a cause. One exception to this may be the "surrender requirement" which channels foreign exchange away from the private sector and to meet the needs of the public sector. If the foreign exchange rate were to balance — at a higher official exchange rate — most of these directives would no longer be binding. Meanwhile, capital controls are also necessary under the conditions of foreign exchange scarcity. These prevent a massive outflow of foreign exchange out of the country, which would worsen the foreign exchange scarcity and therefore can only be lifted once the foreign exchange market is much closer to balance.

Since it is the official exchange rate that is at the center of the misalignment between exchange rate and monetary policy — and the policy variable for which the NBE has control — it may be useful to define the basics of exchange rate regimes. At the national level, foreign exchange coming in and foreign exchange going out must balance at any given time. This balance happens one of two ways — either automatically or manually.

- Countries with a floating exchange interest rate allow this balance to happen automatically as the exchange rate moves to clear the market. If there is not enough foreign exchange coming in to pay for what is going out, then the price foreign exchange goes up a little and

importers either continue to import or stop based on their willingness to pay — this is depreciation. If the opposite is true, then price of foreign exchange becomes a little cheaper — an appreciation. A floating exchange rate therefore potentially exposes an economy to a lot of risk and volatility, particularly if the foreign exchange that is flowing in is volatile.

- Countries that do not want to face such a risk will move the exchange rate manually through setting an exchange rate versus other currencies. This policy-determined exchange rate may not allow the market to clear. In fact, it certainly will not, at any given point in time. However, it may work well on average. At times when there is more foreign exchange coming into the country than going out, this country will accumulate foreign exchange reserves, and when the reverse is true, it will lose reserves. This exposes the economies to a different type of risk. If reserves begin to run out, then the country must either devalue the currency or restrict its imports, or both.

In practice, exchange rate systems are often neither fully floating or fully pegged and the balance is achieved through a mix of automatic and manual adjustments. Ethiopia has a what is best understood as a "crawling peg" against the U.S. dollar. This is much closer to a fixed exchange rate than a floating rate, only the NBE sets a pace of change in the official exchange rate rather than a fixed value. The NBE continuously sets a crawl rate that is too slow to anchor nominal variables. Monetization requires a certain level of devaluation of the Birr to clear the market for foreign exchange. If the NBE does not devalue at that required rate, reserves fall and/or the black-market premium increases. When reserves do not have space to fall, the impact will be seen exclusively in the black market. Though black-market premium has been reported at upwards of 70-90% at the time of writing, it is possible for the situation to get much worse. If the scarcity gets bad enough, the government could lose the ability to import essential goods, like fuel, and a macroeconomic crisis could spiral as people lose faith completely in the currency.

If it is made a priority to address the misaligned exchange rate, there are two ways to reach a market-clearing exchange rate: a rapid unification or a gradual approach. The former would aim to devalue the Birr to a level that would eliminate the black-market premium, and importantly then have a devaluation rate that is in line with rate of growth of NDA in dollar terms. A gradualist approach, on the other hand, would devalue the Birr at a pace that consistently exceeds the growth of NDA in dollar terms to gradually reduce the black-market premium. Once again, devaluation would have to continue thereafter in line with growth of NDA. Either way, once the black-market premium is eliminated, Ethiopia could judiciously begin to relax capital controls and disassemble the foreign exchange rationing system. For exchange rate unification to be sustained, whether done rapidly or gradually, the NBE would need to be able to project the path of NDA into the future based on close coordination with fiscal plans and adhere to this in setting the exchange rate. As with the removal of one distortion in the presence of others, exchange rate unification entails some risks, and different risks if done rapidly versus gradually, but we can evaluate these carefully based on international experience and Ethiopia's context.

Box 3.7: Overview of Foreign Exchange Allocation and Rationing System

This description of the rationing system is adapted from the policy note "Foreign Exchange Management in Ethiopia: Toward a Market-Clearing Exchange Rate System" (Growth Lab, 2020). Ethiopia's foreign exchange (FX) regime is highly structured and complex. Foreign exchange has been strictly controlled for a long time in Ethiopia. The foundations of today's regime date back to the 1970s, when the Exchange Control Authority (ECA) of the NBE assumed control of all FX in the economy. As time progressed, several key directives were layered onto the system to serve goals at the time. Each of these key directives had an intended motivation, but eventually introduced unintended distortions that required further adjustments to the regime down the line. Since 2015, FX directives have generally aimed to loosen restrictions, which is a key indication that the directives are a symptom rather than a source of the problem.

One critical directive excludes firms from processing requests through the banking system, via Franco Valuta licenses. For import requests that do pass through the domestic commercial banking system, the first directive of note is the surrender requirement, which requires that each bank surrender 30% of their FX inflows to NBE (share increased in 2022). Of the remaining FX that banks mediate, banks must unconditionally grant "on-demand" requests made by export retention accounts FX bureaus, diaspora FX accounts, foreign employees, "invisible payments" (e.g., diplomatic missions, business dividends and profits), and external debt repayments. Requests outside of these go into a "queue". The most direct measurement of the worsening of the FX scarcity is the number and volume of queue requests that go unfulfilled. Anecdotally, some banks end up servicing 90% of their available FX to on-demand requests, leaving only 10% for the queue. Within that allocation, at least half must serve priority requests. As a result, non-priority requests in the queue face rising expectations that they will never be granted.

Unintended consequences of various directives:

Surrender Requirement: This effectively removes a portion of FX supply from the private economy to be allocated by the NBE for imports deemed a public priority. Banks are not able to freely allocate their full inflow of FX in the market. Banks are further instructed on the allocation of the remaining percentage that they retain. This gives the private banking system very few degrees of freedom to service the non-public and non-priority sectors of the economy.

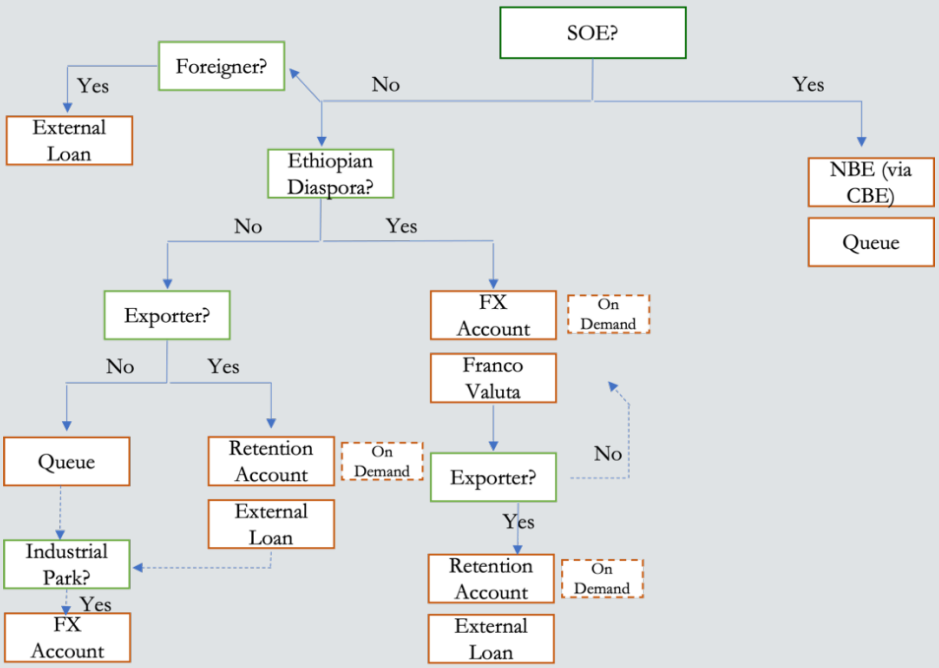
Queue Directive: The design of the queue aims to increase the fairness, predictability, and efficiency of FX allocation, while also guaranteeing FX for essential goods for the economy. Analysis of data on FX allocation from the queue, however, suggests that the system falls short of each goal. Importers describe pursuing workarounds to bypass the queue (often multiple approaches), including manipulating the directives below. These distortionary behaviors lead to a vicious cycle of inefficient allocation, longer wait times for everyone, and uncertainty for businesses and individuals. Even priority items, including medicines, face wait times in accessing FX, as a signal that not enough FX is making it to the queue. NBE discretion to allow requests to jump the queue further contributes to a sense of a preferential regime. Moreover, much of the rationing happens outside of the queue, and is heavily directed to favor exporters, diaspora, businesses in industrial parks, and SOEs. Domestic firms, particularly SMEs, face uncertain, unpredictable access to FX, if accessed at all.

Franco Valuta Licensing: As a "fast pass" through import administration, Franco Valuta offers a privileged bypass to the FX queue. Foreign shareholders of domestic companies can make direct payments for domestic business imports. Furthermore, by tying import duty exemptions to these licenses, the GOE loses out on customs duty revenues. The mechanism incentivizes firms to pursue a license to bypass the FX constraint. It is difficult to trace if Franco Valuta licenses have eased the FX shortage of export-generating businesses or if they have widened a secondary market for imports.

Exporter Retention Account: Despite good intentions, firms are gaming the system. Some firms sell their import access for activities unrelated to exports that may fund non-productive or non-priority imports. Firms sell their FX to the parallel market who do not need all their export earnings or cannot use them in the retention period or simply profit more from selling access to them in the parallel market. For example, some coffee exporters sell their coffee below the world price, willingly taking that loss to access scarce FX to sell through the black market for a profit. A growing signal of attempts to use these accounts to bypass the FX constraint is the rapid rise in export license applications. As waiting times in the queue have extended significantly, firms have sought to bypass the queue, with the exporter retention account presenting, anecdotally, a primary workaround.

Diaspora FX Account: By having non-residents as shareholders or otherwise connected to the business, firms can utilize FX accounts to import. This itself is not a problem if it engages the diaspora through increased remittance or FX inflows. In practice, however, firms can pay black market rates to access dollars that are then funneled through FX accounts to import. FX account holders can similarly charge a fee to traders who otherwise lack access to FX accounts to open a letter of credit and mediate access to imports for the business.

<u>An attempt at mapping the FX rationing system:</u>



Our analysis of these risks built upon recent work done at the IMF based on nine cases of attempted exchange rate unification (Gray, 2021). These cases show that unification can be possible either rapidly or gradually without leading to more inflation, but only in the context of aligned fiscal and monetary policies. We looked more closely at several of these cases (Egypt, Uzbekistan, Angola, and Azerbaijan), where we analyzed the evolution of their monetary supply and breakdown of net foreign assets and net domestic assets, along with key observables of fiscal and monetary policy in their fiscal balance, policy interest rates and money market rates (where available), and changes in the severity of their capital controls. This analysis suggests that gradual unification would be more challenging for Ethiopia given its current fiscal position and limited tools of monetary policy, whereas a rapid unification may be easier to achieve under certain conditions. It would be critical that the rapid unification with the black-market exchange rate be accompanied by a credible fiscal program (for example in a medium-term budget framework) and an exchange rate setting approach that would keep NDA constant in USD value after the initial rapid adjustment.

Our growth diagnostic research shows that addressing the misaligned exchange rate more fundamentally *should be* a policy priority and this macroeconomic diagnostic shows that there are options to do so better. Recent data collection also indicates that the costs of not prioritizing this problem may be increasing. A survey of firms with importing licenses — though not all such firms are able to import in practice — was completed by the Growth Lab in cooperation with the Ethiopian Economists Association (EEA) in early 2022. This survey was conducted to better understand the evolution of the foreign exchange constraint through the experience of formal firms that have been trying to make import purchases. Box 3.8 provides a summary of findings from this survey of approximately 200 firms. The survey results, which capture firm experiences over the past year based on interviews conducted in March and April 2022, indicate that the constraint remains severe, with a large majority of firms indicating that foreign exchange is the main that they are operating below capacity, even in the context of COVID-19 and conflict-related constraints. The survey provides quantifiable evidence on several ways in which firms navigate the foreign exchange system and what types of firms are more able to bypass the constraint at lower overall costs.

The survey also sheds light on how public perceptions influence the challenge of addressing this constraint more forcefully. Though many firms indicate higher willingness to pay for imports, importing firms generally want to see the exchange rate appreciate and get better access to foreign exchange simultaneously. This is even true for firms who report exporting (17% of firms in the survey). These are competing goals. The next and final section of this chapter discusses how a different approach to macroeconomic policy sequencing could work and reiterates several important tradeoffs.

Box 3.8: Findings of an Importer Survey Conducted by the Growth Lab and EEA

A survey was designed jointly by the Growth Lab team and EEA and implemented by EEA in 2022, including a pilot phase and a full survey of approximately 200 firms in March-April 2022. The goal of the importer survey was to understand not only to better understand the scale and the avenues through which firms bypass the foreign exchange (FX) constraint. It was also to help understand potential policy solutions. It was designed as a potential benchmark survey that could be repeated and adapted over time to track the effectiveness of policy actions taken to address the constraint. Firms were selected at random but were limited to the geographical area around Addis Ababa due to logistical uncertainties of conducting a survey during conflict.

Summary of Findings:

- Amongst a sample of firms with a renewed importer license, more than one-third of respondent firms (37%) had not imported in FY2020-21. While the vast majority of importing firms are not exporters, those that are exporting firms had a higher rate of importing.
- Most firms (55%) had requested FX from a bank in the past year. On average, FX requests took 11 months to be processed (in cases where they were processed). Most firms (60%) report being in the queue for FX access for long periods of time.
- Most respondent firms operate well below capacity, with 83% of firms operating below 60% of their total capacity. Those that operated above 60% capacity were mostly firms that were able to import.
- Foreign exchange shortages were the main reason (63% of firms) firms cited for not operating at full capacity (63% of firms). FX shortages far surpass the second and third reasons cited for not operating at full capacity, constraints due to the conflict (13%) and COVID-19 restrictions (11%). Overall, 74% of firms report experiencing challenges in accessing FX.
- FX shortages impacted firms operating at all capacities (low, medium, and high) and firms of all sizes and sectors. Large firms were more comparatively more affected by the conflict. Service sector firms were comparatively more impacted by COVID-19 restrictions.
- The losses accrued to firms in not accessing FX were largest for agricultural firms, micro-sized firms, and for firms that did not import overall. A larger share of manufacturing firms reported importing and showed a greater share of semi-finished goods as imports, as compared to agricultural firms, which primarily imported finished goods.
- The primary means of accessing FX was through “diaspora accounts.” The second highest share of financing was through exporter retention accounts to exporters. The black market also featured in many responses. Large firms relied most on exporter retention accounts while all other firms relied most on diaspora accounts. Micro-sized firms were the most likely to have access to neither of these tools and resort to using the black market.
- In deciding whether to import through the official market or black market, firms do not show an equal distribution across options based on their responses. Firms tend to import either entirely at the official rate or all at the black-market rate, though some firms use both.

- The survey also gleaned new insights on the implicit exchange rate for which firms report what exchange rate they actually paid for their imports. The implicit exchange rate was significantly higher for non-exporting firms, who show a greater willingness to pay a higher exchange rate to access imports. When asked about the maximum rate firms would pay to guarantee access to FX, non-exporting firms were willing to pay significantly higher amounts, as would firms that imported in the past year and those that declared FX access a challenge. When compared to the implied rate they did pay in the past year, a significant share of firms was willing to pay significantly more than the implied rate to guarantee access to FX.
- Responses to questions on exchange rate passthrough at the business level revealed multiple patterns. When there is a change in the exchange rate at official or black-market rates, firms reported they would be more likely to pass that change onto their sales prices when the official exchange rate moved than if the black-market rate moved. However, firms that do react to changes in the black-market rate do so more strongly. The modal price change in response to a 10% depreciation in either rate was 10%.
- Firm perspectives on policy changes to the exchange rate showed significant inconsistencies. The survey asked respondents about their support for faster devaluation, an adjustment to unify with the black-market rate, or alternative exchange rate systems such as a floating exchange rate that would reflect a more market-based exchange rate but would likely point uniquely in the direction of further devaluation. A large majority of respondents (71%) opposed maintaining the current regime. When it comes to alternative exchange rate policies, however, no option received a majority in favor. Firms generally desired to see greater appreciation of the exchange rate but also to see access improve without realizing that these are competing goals given macroeconomic realities.
- If a minority opinion, the largest share of support for policy change was for adjusting the exchange rate for the official rate to match the black-market rate; however, some firms may have desired that the black-market rate move to the official rate rather than the opposite direction as the question was intended.
- Looking ahead to the next six months, half of firms expected to see depreciation of the official rate accelerate. Half also expected to see the black-market rate accelerate. Slightly more respondents (34%) expected to see the black-market depreciation slow than expected to see the official exchange rate appreciation slow (29%).

Rethinking Macroeconomic Policy and Sequencing

This macroeconomic diagnostic started by identifying key macroeconomic problems facing Ethiopia today and macroeconomic policy levers that the Government of Ethiopia can use to address them. The key macroeconomic problem at play in the growth syndrome that Ethiopia faces (see Chapter 2) is the foreign exchange imbalance, which gives rise to the black-market premium and the need for inefficient rationing of scarce foreign exchange. This represents the "outer cycle" of the growth syndrome. Addressing the macroeconomic cause of why this market does not clear is a good first step toward addressing Ethiopia's deeper and longer-term challenge of diversifying exports such that foreign exchange generation can keep pace with the import demand of a rapidly growing economy — the "inner cycle" of the growth syndrome presented in Chapter 2 and the subject of the next chapter.

The cause of the black-market premium is an exchange rate that is misaligned with the growth of money supply. This misalignment could be addressed through a change in exchange rate policy to align with growth in net domestic assets, but this has been a challenging prospect due to very high and volatile inflation — the other key macroeconomic problem that Ethiopian society is facing. A close look at the causes of inflation in Ethiopia allows for a better understanding of why inflation and the black-market premium have tended to move in the same direction (i.e., upward) in Ethiopia as growth has slowed since 2015. Contrary to strong perceptions in Ethiopia, exchange rate passthrough is not the primary cause of inflation. Causation is more in the opposite direction. Monetization of the overall fiscal deficit is the main cause of inflation, and the crawling exchange rate must accelerate to keep pace with the growing money supply if the foreign exchange market is to clear. When this does not happen, the black-market premium for foreign exchange naturally widens. Supply shocks and global price shocks help to explain inflation volatility and spikes in inflation, but they cannot explain the persistence of trend inflation. Supply dynamics help to explain why inflation often shows up in rising food prices before showing up in other parts of the consumption basket including many regulated prices.

Tackling inflation therefore requires tackling monetization of the overall fiscal deficit. Ethiopia has continued to expand the monetary base through advances from the National Bank to the Ministry of Finance and capitalization of SOEs as a key tool for financing the deficit. This is ultimately a fiscal problem brought about by a reduction in the Government of Ethiopia's external borrowing since 2015 — which itself left a gap in foreign exchange supply and undermined export growth. As Ethiopia faced indications of an unsustainable external debt trajectory, it turned to domestic financing sources to finance its overall deficit, including SOEs. Domestic financing through financial repression and the inflation tax have kept overall debt on a declining path, but Ethiopia remains in a problematic external debt position and access to external markets has become much worse following COVID-19 and the conflict.

But there is not a clear fix to the fiscal problem in the short-term. Ethiopia has already pulled back public spending to some degree while continuing to prioritize the completion of more critical

public investments and it is undertaking widespread SOE management reforms and actions to address the backlog of SOE debt. However, tax revenues have declined faster than GDP, as have overall revenues including grants. Some of the tax challenges that Ethiopia faces are structural and suffer from the vicious cycle of stagnating imports and slowing growth. As the ability the economy to import has declined, this has resulted in a loss of revenues from import taxes. As importers have struggled, some exemptions have been granted, which reduced revenues from import taxes further. Likewise, exemptions in the VAT system have grown, which has undermined what was previously a driver of tax growth. Finally, as growth has slowed, so too have direct taxes on businesses and personal income.

Additionally, there are conflicts and tradeoffs within Ethiopia's macroeconomic policy priorities — which are discussed in detail in the Chapter 5 on the Homegrown Economic Reforms Agenda. There are conflicts with simultaneously trying to deepen financial markets and continued use on financial repression. The National Bank and the financial system have succeeded in developing a T-bill market to facilitate government borrowing at market-determined rates and rapidly expanding access to financial services. However, these improvements have indirectly increased inflationary pressure in important ways. Short maturity T-bill issuance has increased the need for monetization as bonds become due with interest and banks may have also expanded money growth backed by these bills. Overall, rapid expansion of the banking system has increased the money multiplier over time, meaning that growth in the monetary base now has higher transmission into growth in overall money supply. There are also larger tradeoffs between continuing to invest so that the economy can grow and worsening an overall deficit that needs to be financed domestically. There are tradeoffs at play removing mechanisms of financial repression when the deficit remains in place because this leads to greater need for monetization.

What is government to do in the face of multiple and interacting macroeconomic distortions? This was a key question that the Growth Lab's research team asked over the last four years. The challenge is that seemingly good macroeconomic reform efforts to address distortions tend to have indirect effects on others. To make matters worse, each shock that Ethiopia has faced has also impacted macroeconomic fundamentals and risks. COVID-19 impacted service exports and the conflict has impacted access to grants and donor support. Drought has increased need for imported food and conflict in Ukraine has increased import prices. In 2019, as the Government of Ethiopia launched its Homegrown Economic Reform (HGER) Agenda, we constructed a matrix of interacting macroeconomic distortions (Figure 3.25) to explore the implications of different sequencing of reform efforts. This matrix looks at six different distortions and what the expected impact of an action to discuss one distortion would be on the others. For example, a fiscal adjustment to rapidly reduce the fiscal deficit (the second row) would reduce the need for several other distortions but would fundamentally slow the completion of critical public investments. Or a reduction in monetization to address excess money supply (the third row) would impact public spending and increase the need for other means of financing the deficit, like financial repression, but it was thought to be an essential step to address the black-market premium at the time.

Figure 3.25: Constructing a Matrix of Macroeconomic Distortions

…*ceteris paribus*, what is the impact on the other distortions?

If you remove this first…	Incompletion of critical public investments	Underfunded total fiscal deficit	Excess money creation	Financial repression to direct credit	RER overvaluation & black-market premium	FX allocation through controls rather than prices
Incompletion of critical public investments	Needed for long-term growth	Increases funding gap	Increases need for it	Increases need for it	Worse now, maybe better later	Increases need for controls
Underfunded total fiscal deficit	Slows completion	Reduces underlying distortion	Reduces need for it	Reduces need for it	Helps adjustment to work	Reduces need for controls
Excess money creation	Slows completion	Increases funding gap	Reduces inflation pressure	Increases need for it	Essential for adjustment to work	No direct impact
Financial repression to direct credit	Slows completion	Increases funding gap	Increases need for it	Increases efficiency of finance	Unclear impact	Unclear impact
RER overvaluation & black-market premium	Faster access to imported imports	Impacts likely to offset	No direct impact	No direct impact	Addresses binding constraint	Removes need for controls
FX allocation through controls rather than prices	Might harm completion	Increases funding gap	Might increase need	No direct impact	Makes easier to address	Eases binding constraint & price shocks

Source: Growth Lab construction

With this tool in hand, we analyzed the implicit sequencing priorities reflected in government reform actions in 2019 and embedded within its reform program with the IMF. This sequencing is reflected in Figure 3.26 by re-organizing the rows of the matrix. This allows one to look at the columns to see if the sequencing would enable or worsen challenges in addressing other distortions. If removing financial repression is made the priority — as seemed to be the case in 2019 with the removal of the 27% rule and the nature of which reforms were prioritized — this would present immediate challenges for addressing inflation and reducing the underfunded fiscal deficit. With actions to clear the foreign exchange market less prioritized and less clear, there was a strong likelihood that the binding constraint to growth would go unaddressed and even weaken. This is effectively what happened, but with a multitude of shocks increasing the challenges further down the matrix significantly as well.

Was a different sequencing macroeconomic reforms possible that would better achieve goals in the context of interacting distortions? At the time, we suggested sequencing in line with Figure 3.27, which would prioritize stronger actions on reducing monetization and better aligning exchange rate policy. This would have been expected to better address inflation and the black-market premium. This approach would have recognized a need for continued financial repression, or even greater use of financial repression. This approach would have emphasized a credible fiscal plan over the medium-term. However, in retrospect, it may not have been possible to put forth a credible fiscal plan without stronger actions toward a fiscal adjustment. This approach would have also benefited from a large initial infusion of foreign exchange — not only from the IMF, which was only meant to support foreign exchange reserves — but also through additional donor aid and the envisioned proceeds of privatization efforts. These proceeds did not occur in practice.

Figure 3.26: Implied Initial Government Sequencing of Reforms under HGER

If you remove this first… / Bold on this first:	…*ceteris paribus*, what is the impact on the other distortions? Incompletion of critical public investments	Underfunded total fiscal deficit	Excess money creation	Financial repression to direct credit	RER overvaluation & black-market premium	FX allocation through controls rather than prices
(1) **Remove financial repression to direct credit**	Slows completion	Increases funding gap	Increases need for it	**Increases efficiency of finance**	Unclear impact	Unclear impact
Followed by these:						
(2) **Stop excess money creation**	Slows completion	Increases funding gap	**Reduces inflation pressure**	Increases need for it	Essential for adjustment to work	No direct impact
(3) **Aggressive fiscal consolidation**	Slows completion	**Reduces underlying distortion**	Reduces need for it	Reduces need for it	Helps adjustment to work	Reduces need for controls
(4) **Remove forex controls**	Might harm completion	Increases funding gap	Might increase need	No direct impact	Makes easier to address	**Eases binding constraint & price shocks**
(5) **Address RER overvaluation & black market**	Faster access to imported imports	Impacts likely to offset	No direct impact	No direct impact	**Addresses binding constraint**	Removes need for controls

Source: Growth Lab construction

Figure 3.27: A Proposed Alternative Sequencing of Macroeconomic Reforms

If you remove this first… / Bold on this first:	…*ceteris paribus*, what is the impact on the other distortions? Incompletion of critical public investments	Underfunded total fiscal deficit	Excess money creation	Financial repression to direct credit	RER overvaluation & black-market premium	FX allocation through controls rather than prices
(1) **Stop excess money creation**	Slows completion	Increases funding gap	**Reduces inflation pressure**	Increases need for it	Essential for adjustment to work	No direct impact
(2) **Address RER overvaluation & black market**	Faster access to imported imports	Impacts likely to offset	No direct impact	No direct impact	**Addresses binding constraint**	Removes need for controls
Followed by these:						
(3) **Remove forex controls**	Might harm completion	Increases funding gap	Might increase need	No direct impact	Makes easier to address	**Eases binding constraint & price shocks**
(4) **Aggressive fiscal consolidation**	Slows completion	**Reduces underlying distortion**	Reduces need for it	Reduces need for it	Helps adjustment to work	Reduces need for controls
(5) **Remove financial repression to direct credit**	Slows completion	Increases funding gap	**Reduces inflation pressure**	Increases need for it	Essential for adjustment to work	No direct impact

Source: Growth Lab construction

Early HGER efforts prioritized reform areas where there was alignment of political supportability and administrative feasibility. Specifically, the government acted quickly on moving to market-driven sources of deficit financing, introducing T-bills and to remove financial repression before addressing other macroeconomic goals, for example by eliminating the 27% rule that required bank to purchase NBE bonds equal to 27% of their assets. This latter reform was able to achieve the direct effect it desired: it allowed banks to manage liquidity more freely and allocate resources

more efficiently. All things equal, these efforts increased the need for monetization and increased monetary transmission, which both contributed to higher inflation. Despite positive strides to rein in public sector deficit by reducing SOE spending and efforts to improve tax mobilization, the underfunded portion of the deficit still requires high rates of monetization that outpaces even the accelerated crawl of the official exchange rate. Exchange rate alignment was less of a priority, with no clear path announced to a market-clearing rate. This was made additionally true in practice as high inflation was perceived to be constraint to exchange rate policy adjustment. The resulting foreign exchange imbalance left the government in a position where it had to continue to rely on foreign exchange directives to channel scarce foreign exchange to where it thought it could have the greatest value, rather than letting the market determine this.

In 2021, after the Growth Lab conducted a midterm review of HGER, we took an updated look at macroeconomic sequencing challenges and developed a new tool to capture the large range of macroeconomic policy levers that government can use — across foreign exchange, fiscal, monetary, and financial policy dimensions — as well as the role of donor/external support. Figure 3.28 shows *status quo* policies across all these dimensions and how well this set of policies is achieving envisioned goals. Some of these goals may face tradeoffs as shown, while not exceeding administrative capacity and maintaining political support are considered essential to success. As discussed in this chapter, the current approach keeps debt sustainable overall, does not overwhelm administrative capacities, and allows for moderate growth rates and progress in financial deepening. Yet, inflation and foreign exchange scarcity are persistent problems.

Figure 3.28: Status Quo Macroeconomic Policy Approach and Outcomes

Foreign Exchange	Exchange rate regime	20+% crawl, no clear path to unification
	FX controls and rationing mechanisms	Keep FX controls (changes on margins to FX directives)
Fiscal	On-budget spending	On-budget spending contained
	Tax policy and administration	Low tax collection goals in real terms
	SOE management	Reform focus to control spending; LAMC creation
	Internal cost-benefit screening of projects	Low relative importance given to fiscal considerations
Monetary	Deficit monetization	High fiscal dominance, NBE direct advances
	Negative real interest rates on bonds	Maintain as key component of financial repression
	Bank reserve requirements	Officially stable with excess reserves fluctuating
	Other monetary policy (i.e., money and credit creation)	Goal to move to inflation targeting, path unclear
Financial	27%-rule on banks & other financial repression	27% rule removed
	T-bills and other bond markets	Expanding issuance,
	Developing other equity and financial markets	N/A
	Foreign capital controls	Must remain in place
Donor/ External Support	External borrowing at market rates	No new foreign-denominated debt at market rates
	Concessional borrowing and direct aid	Limited access to concessional borrowing and aid
	Debt forgiveness and/or restructuring	Focus on debt suspension mechanisms
	Investment (e.g., IFC or bilateral)	Little-to-no use

Achievement of Goals

GDP and job growth	High fiscal push but declining returns in growth and jobs
Keep debt sustainable	Deficit is monetized by inflation and financial repression, which keeps debt affordable
Low and stable inflation	**High inflation persists and may be poised to increase**
Address FX scarcity	**High black-market premium persists**
Modernize financial system	Clear momentum, but will remain incomplete given BMP and financial repression
Administrative capacity	Does not overwhelm capacity
Public supportability	Public support under pressure with high inflation

← Tradeoffs →

Essential

Source: Growth Lab construction

With knowledge of all the tradeoffs discussed in this chapter, we can once again ask if a better approach to sequencing is possible. In practice, sequencing does not mean just doing some reforms

and not others. It means making choices across all these policy levers that amount to stronger reform actions in some areas and weaker actions in others. Figures 3.29 through Figure 3.33 explore several possible scenarios and captures changes versus the status quo approach in bold text. Critically, each of these scenarios involves a push for greater concessional lending and grants from the donor community. Without such support, any path to improved macroeconomic sequencing may be infeasible.

Figure 3.29 captures a scenario that centers on a sharp fiscal adjustment via expanding tax revenues, along with complementary monetary, financial, and foreign exchange policy changes that would be consistent with goals to reduce inflation and clear the foreign exchange market. This scenario could result in several better outcomes than the *status quo* but with some tradeoffs. It would address inflation more than the black-market premium. Since revenue improvements are uncertain, it might entail debt sustainability risks. A key problem with this scenario, however, is that it appears administratively infeasible to reverse problems in tax revenues quickly. At best, addressing the challenges in the tax system that have emerged would take time.

Figure 3.29: Scenario with a Sharp Fiscal Adjustment via Revenues

Foreign Exchange	Exchange rate regime	**Gradual unification aided through lower NDA growth**
	FX controls and rationing mechanisms	Keep FX controls, **address after unification**
Fiscal	On-budget spending	On-budget spending contained
	Tax policy and administration	**Greatly increase tax collection goals and resources**
	SOE management	Reform focus to control spending; LAMC creation
	Internal cost-benefit screening of projects	**Strengthen process for approving public investment**
Monetary	Deficit monetization	**Reduced quickly in line with fiscal adjustment**
	Negative real interest rates on bonds	**Remove relatively quickly as fiscal improves**
	Bank reserve requirements	**M2 managed instead with open market operations**
	Other monetary policy (i.e., money and credit creation)	**Quicker path to inflation targeting**
Financial	27%-rule on banks & other financial repression	27% rule removed
	T-bills and other bond markets	**Faster expansion**
	Developing other equity and financial markets	N/A
	Foreign capital controls	Must remain in place until exchange rate unification
Donor/ External Support	External borrowing at market rates	No new foreign-denominated debt at market rates
	Concessional borrowing and direct aid	**Greater push in line with HGER adaptation**
	Debt forgiveness and/or restructuring	Focus on debt suspension mechanisms
	Investment (e.g., IFC or bilateral)	Little-to-no use

Achievement of Goals

GDP and job growth	Status quo aided somewhat by improving FX allocation
Keep debt sustainable	Debt is sustainable with lower need for inflation or financial repression, but with risks if revenues do not materialize
Low and stable inflation	Clear path to lower inflation
Address FX scarcity	Gradual improvement in FX allocation over time
Modernize financial system	Faster path lifting financial repression
Administrative capacity	**Requires substantial new capacity to develop quickly to mobilize tax revenue**
Public supportability	Public support uncertain, even potential for large pushback

← Tradeoffs →

Essential

Source: Growth Lab construction

Figure 3.30 instead outlines a scenario of a sharp fiscal adjustment via spending, again with complementary adjustments in other policy dimensions. This is more administratively feasible but would require cuts to spending priorities, which would negatively affect growth and might undermine public supportability. This scenario would again be expected to have a greater positive impact on the inflation problem than the black-market premium. However, its impacts on debt sustainability would be more clearly positive, so long as spending reductions are not reversed.

Figure 3.30: Scenario with a Sharp Fiscal Adjustment via Spending

Foreign Exchange	Exchange rate regime	**Gradual unification aided through lower NDA growth**
	FX controls and rationing mechanisms	Keep FX controls, **address after unification**
Fiscal	On-budget spending	**Large reductions in public spending, incl. investment**
	Tax policy and administration	**Increase tax collection goals in real terms**
	SOE management	**Impose harsher caps on SOE spending**
	Internal cost-benefit screening of projects	**Strengthen process for approving public investment**
Monetary	Deficit monetization	**Reduced dramatically in line with lower spending**
	Negative real interest rates on bonds	**Remove relatively quickly as fiscal improves**
	Bank reserve requirements	**M2 managed instead with open market operations**
	Other monetary policy (i.e., money and credit creation)	**Quicker path to inflation targeting**
Financial	27%-rule on banks & other financial repression	27% rule removed
	T-bills and other bond markets	**Faster expansion**
	Developing other equity and financial markets	N/A
	Foreign capital controls	Must remain in place until exchange rate unification
Donor/ External Support	External borrowing at market rates	No new foreign-denominated debt at market rates
	Concessional borrowing and direct aid	**Greater push in line with HGER adaptation**
	Debt forgiveness and/or restructuring	Focus on debt suspension mechanisms
	Investment (e.g., IFC or bilateral)	Little-to-no use

Achievement of Goals

GDP and job growth	**Negative fiscal impulse will slow growth in the short-term, but improve long-term outlook**
Keep debt sustainable	Debt is sustainable with lower need for inflation or financial repression
Low and stable inflation	Clear path to lower inflation
Address FX scarcity	Gradual improvement in FX allocation over time
Modernize financial system	Faster path lifting financial repression
Administrative capacity	New capacities needed to manage spending cuts
Public supportability	**Spending cuts will have public supportability challenges**

← Tradeoffs →

Essential

Source: Growth Lab construction

Figure 3.31 outlines a scenario that centers on a rapid unification of the exchange rate followed by NDA targeting as discussed earlier in this chapter. This scenario could also include increased fiscal reform ambition through revenues and, again, other complementary monetary and financial policy changes. This scenario would allow for a major improvement in foreign exchange allocation, which would also improve growth. It would come with some political supportability challenges and given only gradual fiscal adjustment, along with some exchange rate passthrough in the short-term would only help to address inflation in the longer-term.

Figure 3.31: Scenario with a Sharp Adjustment to Exchange Rate Policy

Foreign Exchange	Exchange rate regime	**Unify exchange rate, then target NDA in USD terms**
	FX controls and rationing mechanisms	**Gradually lift surrender and other rationing controls**
Fiscal	On-budget spending	On-budget spending contained
	Tax policy and administration	**Increase tax collection goals in real terms**
	SOE management	Reform focus to control spending; LAMC creation
	Internal cost-benefit screening of projects	**Strengthen process for approving public investment**
Monetary	Deficit monetization	**Fiscal dominance in short-term, reduced gradually**
	Negative real interest rates on bonds	**Remove gradually**
	Bank reserve requirements	**M2 managed instead with open market operations**
	Other monetary policy (i.e., money and credit creation)	**Inflation targeting after fiscal dominance addressed**
Financial	27%-rule on banks & other financial repression	**Reinstate form of 27% rule if there is fiscal need**
	T-bills and other bond markets	Expanding issuance
	Developing other equity and financial markets	N/A
	Foreign capital controls	**Remove gradually**
Donor/ External Support	External borrowing at market rates	No new foreign-denominated debt at market rates
	Concessional borrowing and direct aid	**Greater push in line with HGER adaptation**
	Debt forgiveness and/or restructuring	Focus on debt suspension mechanisms
	Investment (e.g., IFC or bilateral)	Little-to-no use

Achievement of Goals

GDP and job growth	Growth push expected from improved FX allocation
Keep debt sustainable	Deficit is monetized by inflation and financial repression in short-term, but more taxation over time
Low and stable inflation	**Pathway to lower inflation over time but not in short-term**
Address FX scarcity	Big improvement in FX allocation in short-term
Modernize financial system	Gradual development, but incomplete until fiscal balance
Administrative capacity	Does not overwhelm capacity
Public supportability	Risks associated with short-run inflation and increased cost of government imports

← Tradeoffs →

Essential

Source: Growth Lab construction

Finally, Figure 3.32 reflects a scenario of more gradual exchange rate unification together with gradually increased fiscal adjustment via both revenues and spending. This scenario represents a middle ground of sorts versus the others above. It might be the most effective at moving toward all goals at once but would not be expected to fully address either the foreign exchange imbalance or inflation in the short run. Still, could be a pareto improvement versus the *status quo* without overwhelming administrative capacity or undermining political support.

Figure 3.32: Scenario with a Gradual Adjustment to Exchange Rate Policy and Fiscal Adjustment

Foreign Exchange	Exchange rate regime	**Gradual unification, devaluation & lower NDA growth**
	FX controls and rationing mechanisms	Keep FX controls, **address after unification**
Fiscal	On-budget spending	**More reductions in public spending**
	Tax policy and administration	**Increase tax collection goals in real terms**
	SOE management	**Impose somewhat harsher caps on SOE spending**
	Internal cost-benefit screening of projects	**Strengthen process for approving public investment**
Monetary	Deficit monetization	**Fiscal dominance in short-term, reduced gradually**
	Negative real interest rates on bonds	**Remove gradually**
	Bank reserve requirements	**M2 managed instead with open market operations**
	Other monetary policy (i.e., money and credit creation)	**Inflation targeting after fiscal dominance addressed**
Financial	27%-rule on banks & other financial repression	**Reinstate form of 27% rule if there is fiscal need**
	T-bills and other bond markets	Expanding issuance
	Developing other equity and financial markets	N/A
	Foreign capital controls	Must remain in place until exchange rate unification
Donor/ External Support	External borrowing at market rates	No new foreign-denominated debt at market rates
	Concessional borrowing and direct aid	**Greater push in line with HGER adaptation**
	Debt forgiveness and/or restructuring	Focus on debt suspension mechanisms
	Investment (e.g., IFC or bilateral)	Little-to-no use

Achievement of Goals

GDP and job growth	Status quo aided somewhat by improving FX allocation
Keep debt sustainable	Deficit is monetized by inflation and financial repression in short-term, but more taxation over time
Low and stable inflation	Gradual lowering of inflation pressure
Address FX scarcity	Gradual improvement in FX allocation
Modernize financial system	Gradual development, but incomplete until fiscal balance
Administrative capacity	Does not overwhelm capacity
Public supportability	Will require strong communication to public

← Tradeoffs →

Essential

Source: Growth Lab construction

To fully address inflation, Ethiopia will need to reduce monetization, and this will ultimately require more fiscal adjustment. But since expanding tax revenues happens slowly at best, and expenditures serve important national development needs, the government faces real tradeoffs between heavier use of monetization or financial repression in the short and medium-term. A higher amount of financial repression would help to achieve lower inflation, but this comes at some cost to efficient financial markets and lower private sector productivity. If the government chooses to eliminate or reduce financial repression, it will then have to either pay higher interest rates or face higher inflation, or both. In a sense, inflation is a regressive tax on all holders of the local currency, while financial repression taxes the financial system, and indirectly impacts asset prices and everyone who uses the banking system. In the absence of much larger external support, there may not be a path to rapidly bringing down inflation, but improvements can clearly be made through a combination of more ambitious fiscal adjustment and relatively more financial repression and less monetization.

Meanwhile, addressing the black-market premium and improving foreign exchange allocation is possible — though more difficult — even under conditions of high inflation. Achieving this requires only a change in exchange rate policy setting that reduces the U.S. value of net domestic

assets. International experience suggests that a rapid unification of the exchange rate followed by a dynamic exchange approach that targets a constant USD value of NDA would be most effective. However, in the context of very high inflation and lack of public support a more gradual approach to unification may be more strategic. This would still amount to a change from the current rate of crawl of the exchange rate and a willingness to depreciate faster so long as monetization of the deficit continues. Donor support in the form of foreign exchange swaps and grants and concessional aid denominated in foreign currency would also support an effective exchange rate adjustment with fewer risks.

Any combination of resequencing of macroeconomic reform efforts necessitates high-frequency and high-quality monitoring of macroeconomic variables. Improvements in macroeconomic surveillance and targeted surveying, as utilized in the Growth Lab's work in Ethiopia, are important for evaluating if policy actions are having their intended impacts in real time, such that policies and targets can be adjusted as needed. Macroeconomic policies also must be transparently communicated to the public to manage expectations and avoid undue uncertainty. Currently, NBE's communication of its policy happens via the announcement of the daily exchange rate, new regulations that are announced on an *ad hoc* basis, and comments made by policymakers to the media. There have even been instances where immediate policy changes in banking regulations are communicated by text message. The current tendency for surprise policy announcements and lack of clarity at times induces volatility in markets and may influence expectations of continued increases in the black-market rate. Accordingly, changes in the communication must be an essential part of macroeconomic policy resequencing moving forward.

Finally, it is worth reiterating that at the time of writing, there is no clear path to addressing key macroeconomic problems in the short-term without increased fiscal support (grants, concessional lending, and potentially debt relief to enable external borrowing). The current year has been one of multiple shocks. But due to the conflict, donors have withheld fiscal support, which worsens fiscal and foreign exchange challenges. If an end to the conflict can be achieved, this could open new pathways for donor support and allow for more effective macroeconomic reforms.

IV. Diversification Challenge

This chapter dives into the central challenge for sustainable, long-term growth in Ethiopia — accelerating the growth of the country's exports. Export growth at the scale needed to sustain rapid economic growth will require not only expanding export volumes of many of the goods and services that Ethiopia already sells abroad, but also — and critically — accelerating the diversification of what Ethiopia exports.

The starting point for understanding this challenge, and ultimately for informing strategy, is to use the information available in historical export patterns not only in Ethiopia, but also across countries that have achieved export-led growth in the past. This chapter starts by utilizing this information through tools of "Economic Complexity," which allow us to see emergent properties from the history of trade. Economic Complexity tools will allow us to see clearly what diversification opportunities align most closely with the productive capabilities expressed by the Ethiopian economy today while also creating strong pathways for faster export growth, the addition of new productive capabilities, and future diversification. This perspective, together with an understanding of what has been working and what has not been working in Ethiopia's export diversification process, will allow us to see what opportunities are out there to respond to the diversification challenge.

The lenses of complexity and various measures of feasibility imply that Ethiopia's current composition of exports will neither be able to support future growth in the short-term nor diversification in the long-term. Without a different approach, it risks being stuck in a low-complexity trap. Responding to the diversification challenge requires not only identifying "what" products and industries might be promising pathways but also "how" various stakeholders in Ethiopia can enable the emergence of these opportunities. The "how" is especially important in the context of Ethiopia, where the trap of low complexity makes diversification efforts even harder. Attracting FDI for new products and industries will be critical for Ethiopia to escape this trap and push diversification.

This chapter first explores the questions of what products and industries might be desirable and feasible in Ethiopia. It begins with potential export areas identified by complexity analysis and then layers on considerations of feasibility relating to market access as well as Ethiopia's remoteness and land-locked geography. Much of this chapter is devoted to the discussion of how to go about the work of diversification. We will look at economic complexity in spatial terms across Ethiopia to understand where across the country new export opportunities would be most likely to thrive. This chapter includes two brief case studies of places within Ethiopia that could be strategic for different diversification opportunities. This discussion informs place-specific strategies for enabling export diversification. A central purpose of this chapter is to summarize tools that could and should be better incorporated into the Government of Ethiopia's export strategy in practice.

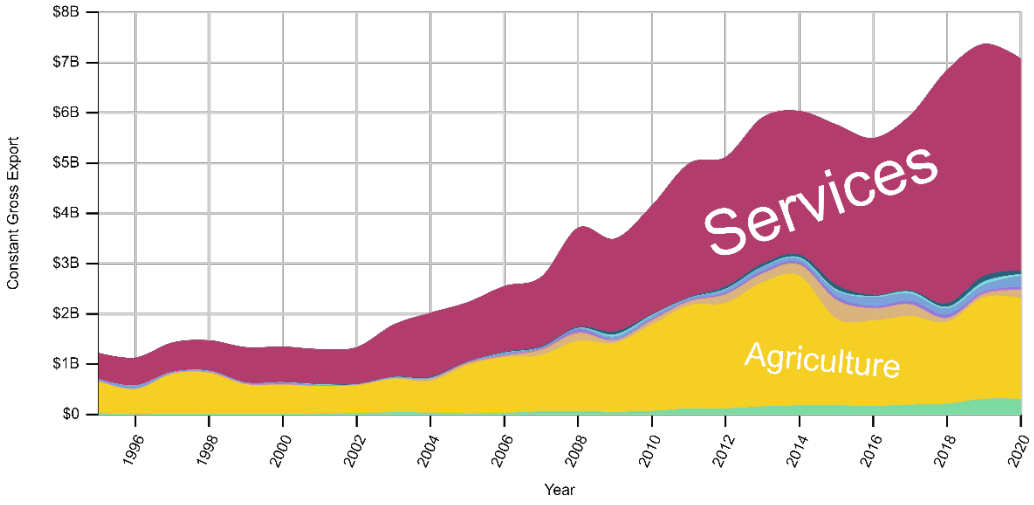
Ethiopia's Export Performance

The Ethiopian economy lacks the foreign exchange it needs to grow in a sustainable way. Fixing macroeconomic imbalances and policies is an important part of making the foreign exchange constraint less destructive. The fundamental challenge is that Ethiopia does not produce and sell enough things that the rest of the world wants to buy. Changing this is the only way to sustainably solve a persistent lack of foreign exchange for a large country like Ethiopia over the medium to long-term. In other words, Ethiopia needs to export more to the rest of the world to generate the foreign exchange that the previous sections have shown are critical to sustaining long-term growth.

Figure 4.1 shows that exports in Ethiopia grew rapidly between 2000 and 2014 from a low base before slowing down after 2013/2014. However, even by 2014, after such rapid growth, Ethiopia was only exporting $66 per capita of goods and services to the rest of the world. Such low levels of exports are insufficient to finance Ethiopia's need for foreign exchange nor support much higher incomes. Chapter 2 describes the collapse in imports after 2014 and how this led to an overall growth slowdown. In the figures below, we see that around this time, export growth slowed down and even turned negative. The stagnation and decline of exports were worst for commodity exports, while services, especially transport through Ethiopian Airlines, fared much better.

Exports as a percentage of GDP fell after 2015 and overall GDP growth remained positive (though lower) through to the present day. This implies that during the stagnation and decline of exports, the non-tradeable sector of the economy was still expanding, which would require imports. The macroeconomic imbalances detailed in the Chapter 3 are deeply intertwined with the mismatch between the requirement for imports from the rest of the economy while exports that could finance them were declining.

Figure 4.1: Ethiopia's Non-Oil Exports by Broad Sector

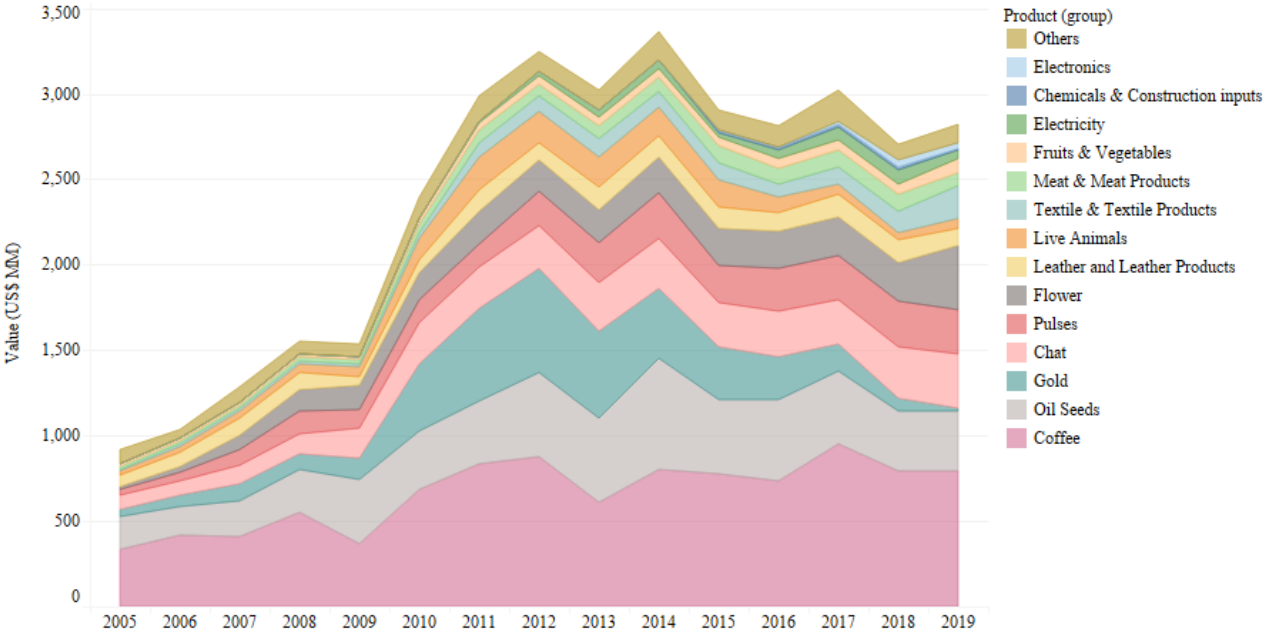


Source: Atlas of Economic Complexity

The slowdown in commodity exports between 2013/2014 and 2020 occurred despite ambitious targets set by the government in its Growth and Transformation Plan (GTP II). This plan aimed for much larger growth in agricultural and manufacturing exports to lead structural transformation. GTP II envisioned stronger growth both in existing products, like coffee, as well as newer ones like garments and chemical products. Across the board, Ethiopia's actual export performance fell short of these targets. By 2019, prior to the onset of the pandemic, coffee exports were only 43% of official targets, other agricultural goods only 60% of targets, and garments, chemicals, and leather less than 25% of targets.

Ethiopia's decline in exports was led by a few sectors and products while others performed much better, even during the period of overall export decline (Figure 4.2). In fact, much of Ethiopia's rise, as well as its fall, in exports in absolute terms were led by a few sectors. Decomposing overall growth in exports since 2011 shows that overall stagnation was the result of stagnating coffee exports alongside a large decline in gold and live animal exports with a roughly equivalent increase in cut flowers, chemicals, chat, oilseeds, and garment exports. To explain the performance of each of these sectors we need to look at country, global, and sector-specific factors. Figure 4.3 provides a summary of these factors based on work that the Growth Lab did alongside the Government of Ethiopia. Coffee suffered a large global decline in prices, while gold and live animals were subject to increased smuggling and price arbitrage in unofficial markets. Meanwhile, successes in garments, electronics, and cut flowers were due to investment, including FDI, and the benefits of free-trade agreements like the Everything But Arms (EBA) and the African Growth and Opportunity Act (AGOA).

Figure 4.2: Goods Export Performance 2005-2019, by Product



Source: NBE

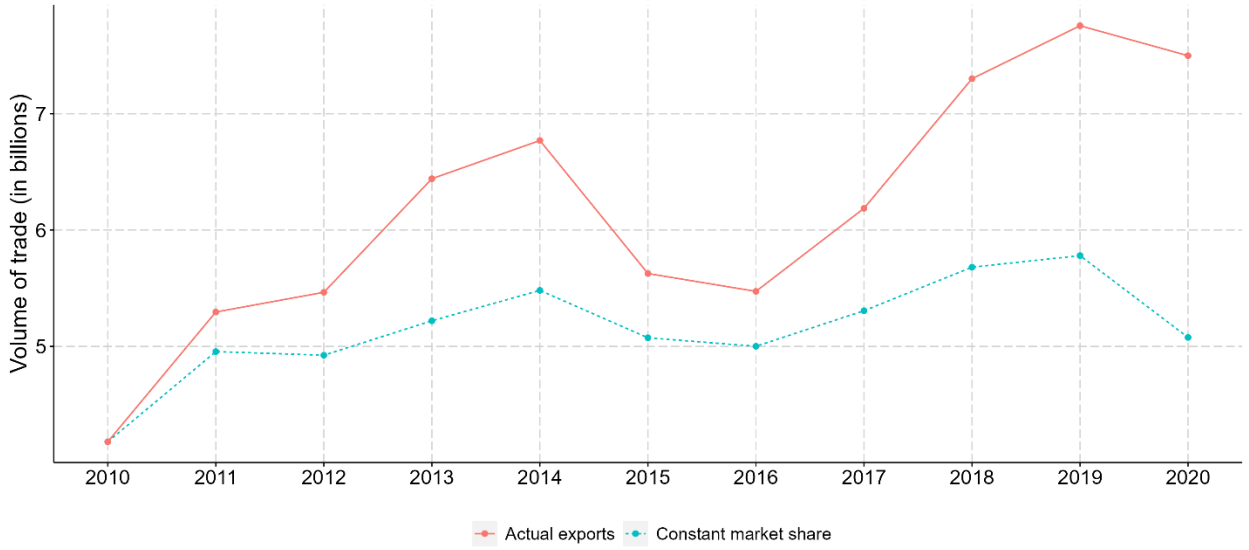
Figure 4.3: Changes in Export Value 2015-2019, Plausible Causes

Good	Evolution	Plausible Cause
Textile and Textile Products	High Growth	Expanding sector driven by new investments
Fruits and Vegetables	High Growth	Important expansion of area harvested for export crops
Cut Flowers	Initial Stagnation then High Growth	Many sectoral issues (workforce development, some failed investments) but the industry appears to be overcoming them in last two years
Chat	Moderate Growth	Strong increase in area harvested but moderate decrease in unit prices
Pulses	Moderate Growth	Strong increase in crop yields but declining terms of trade
Coffee	Stagnation	Increase in area harvested but declining terms of trade
Oil Seeds	Stagnation	Increase in quantities inversely related to decrease in unit prices, not clear if it's because Ethiopia a price-maker in sesame
Meat and Meat Products	Stagnation	Not clear; possible sectoral issues related to quality of inputs
Leather and Leather Products	Stagnation	Not clear; possible sectoral issues related to quality of inputs
Gold	Rapid Decline	Smuggling practices
Live Animals	Rapid Decline	Smuggling practices
Electricity	New Product	Expansion of electricity supply and transmission enabled power exports
Electronics	New Product	New investments in manufacturing
Chemical and Construction Inputs	New Product	New investments in manufacturing

Source: Own analysis

One question about Ethiopia's export performance might be how much of the performance has been due to global factors and Ethiopia's specific specialization of exports. To examine this, Figure 4.4 plots Ethiopia's actual exports versus a counterfactual where we keep Ethiopia's market share for every good and service constant at its 2010 level. This allows us to see what Ethiopia's exports would have been if it kept the same specialization and exports were only affected by global demand factors. We can see that from 2010 to 2014, Ethiopia outperformed demand for its 2010 basket of exports. This is likely due to increases in market share of existing exports as well as new exports during this period. The period between 2014 and 2020 saw more volatile performance, with a period of underperformance followed by recovery and then growth but at a slower rate. During this period, the counterfactual export basket would have grown at a much slower rate. This points to the fact that Ethiopia does not have much room to expand exports with existing exports and will need to focus on expanding to new products as well.

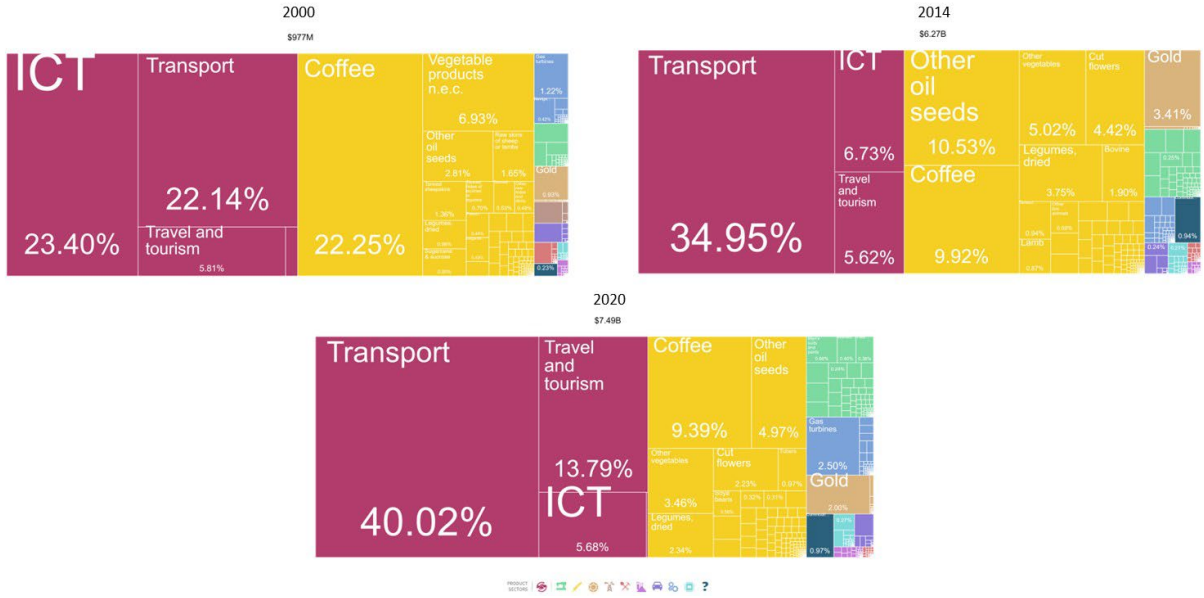
Figure 4.4: Ethiopia's Exports vs. Counterfactual at Constant Global Market Share



Source: Own analysis using Atlas of Economic Complexity

The lack of diversification is because Ethiopia's exports are largely concentrated in services and agriculture. Even at their peak in 2014, exports *within* these broader sectors were further concentrated in only a few products/services. This remains true today as well. Two exports, namely transport (driven by air services of Ethiopian Airlines) and coffee, make up more than half of Ethiopia's total exports. The remaining exports are mostly concentrated in other services and other agricultural products with a small number of exports in garments. This concentration of exports in only a few products and services makes Ethiopian exports vulnerable to shocks — either from markets or from domestic causes — and also limits future export diversification opportunities, as we will explore in detail in this chapter. Between 2014 and 2020, some export areas like garments, cut flowers, and gas turbines have seen growth, but nevertheless Ethiopia's traditional export basket remains most prominent (Figure 4.5).

Figure 4.5: Composition of Ethiopia's Exports in 2000, 2014, and 2020



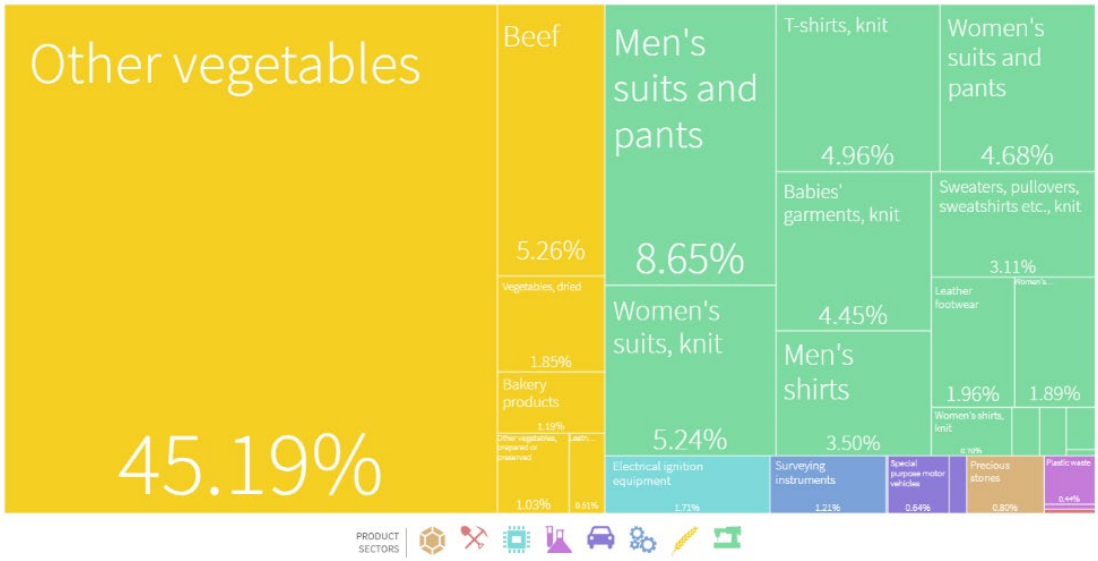
Source: Atlas of Economic Complexity

Aside from poor performance in its existing exports, Ethiopia had mixed success in increasing exports on the extensive margin. During the growth acceleration, Ethiopia added several new products, but nearly all of these were concentrated in garments and agriculture. Figure 4.6 shows the new products that Ethiopia added to its export mix between 2005 and 2020, sized by their share Comparing these new products to the tree-map in the previous figure, new products made up a small portion of overall exports. Figure 4.7 shows that in the subsequent years of 2015 to 2019, Ethiopia saw the emergence of some other new products in garments and electronics, as well as electricity itself, even as overall exports were declining.

As we will discuss later in the chapter, these successes amidst an overall export struggle can be traced to policy instruments related to trade (through AGOA), FDI, and industrial parks. Unfortunately, the overall levels of these new products remain small, and successes have been limited to only a few sectors. In total, the Atlas of Economic Complexity shows that Ethiopia added 29 new products with RCA>1 over 2005-2020, which is a comparatively large number, but that in total these currently amount to just 5 USD per capita.

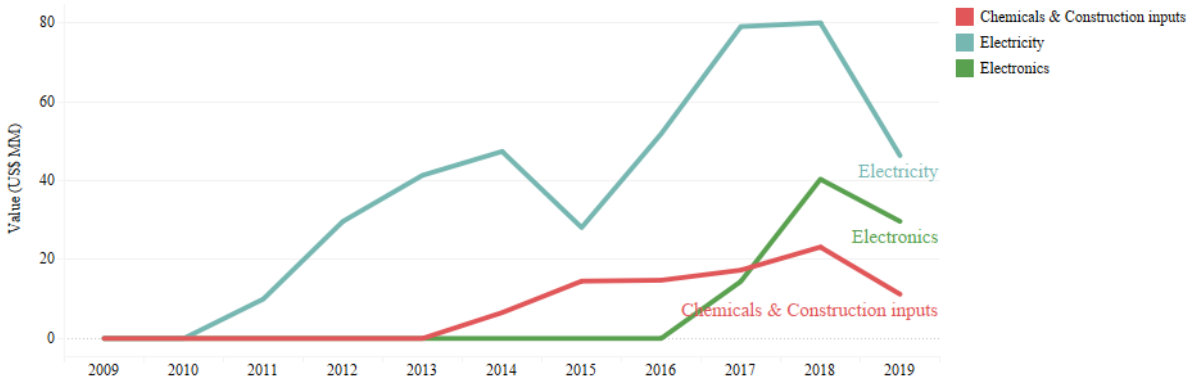
Ethiopia's stagnating export performance in the 2010s is both a cause and consequence of declining growth and unsustainable macroeconomic dynamics. There are many country, global, and sector-specific reasons for why existing exports have seen stagnation and decline. But why did Ethiopia fail to diversify into more products that could have been the basis for greater export growth? Are there key reasons that make this a difficult task for Ethiopia in the future? To understand this question, we can use a concept of economic complexity, which is the focus of the next section.

Figure 4.6: Ethiopia's New Products Added Between 2005 and 2020



Source: Atlas of Economic Complexity

Figure 4.7: New Exports



Source: NBE

Diversification and Economic Complexity

When considering export diversification as a worthy goal, key questions for policymakers are what should a country aim to produce and what is the role of government to help? Because diversification is difficult and government resources are limited, a natural (though perhaps unsatisfactory) answer is that a country should focus on the things that give it the most benefit and which are easiest to do. Since these two considerations will not line up in practice, there is an essential tradeoff at play when it comes to diversification strategy. One might think about benefits in terms of products that are likely to increase foreign exchange generation, boost income levels, and add capabilities that will spur on further diversification. We might think about what products

are easy or feasible in terms of what is it possible to make given the specific context of a country. The lens of economic complexity is a powerful way of looking more rigorously at what it means for a product to provide benefits and what is feasible based on a country's existing productive capabilities.

Complex systems are things that by their very nature are impossible to predict and plan in detail, but which do have emergent properties that can often be predicted and utilized. Economic systems are highly complex, but certain patterns of the growth of economies and the relatedness of industries emerge with sufficient data. Economic Complexity is a field of study — with a set of tools — that help to understand growth in productivity as the process of economies expanding what they collectively know how to do.[21] This idea of "knowhow" is central to understanding why some economies develop the ability to produce a wide range of products and services competitively while others do not, even when technologies can easily move across borders. Further, the knowhow that is needed to produce complex goods and services competitively is not held in isolated individuals but rather across networks of individuals, usually organized into firms. This collective knowhow cannot be stored in any individual person, and sometimes any individual firm, and so productive activity requires that people and firms each specialize in different things so that the economy is able to produce many different things. Production processes will require varying degrees of different individuals and firms with different knowhow to operate. Thus, production also requires that the economy be able to coordinate the complementary knowhow in those different individuals and firms to work together.

In the language of Economic Complexity, we call each of the separate instances of tacit knowhow required for a production process a *capability* and call products that require many capabilities *complex.* For example, we can differentiate between the rubber and machines required to make a tire versus the knowhow of operating and maintaining such machines or the knowledge of how to best procure the right, high quality rubber for the product. The rubber and machines are inputs and could just as well be imported, but the knowhow is tacit and required where production occurs. These capabilities are harder to acquire because they require trained and experienced individuals. Moreover, there are certain capabilities that the public sector tends to provide, such as key infrastructure and regulatory environments. To continue the example, competitive tire exports are not possible if a country does not have sufficient electricity to power the machines or transportation infrastructure to export the product. Some products and services do not require very many capabilities, such as subsistence agriculture. Others will require many capabilities across multiple firms and many individuals, as well as from the public sector. An economy is more complex the larger its span of capabilities and the larger the diversity of more complex things it can make. More

[21] César A. Hidalgo and Ricardo Hausmann, "The Building Blocks of Economic Complexity," *Proceedings of the National Academy of Sciences* 106, no. 26 (June 30, 2009): 10570, https://doi.org/10.1073/pnas.0900943106.; Ricardo Hausmann et al., *The Atlas of Economic Complexity: Mapping Paths to Prosperity* (Cambridge, Mass.: Center for International Development, Harvard University : Harvard Kennedy School : Macro Connections, MIT : Massachusetts Institute of Technology, 2011).

simply, a country is more complex if it tends to make more complex products and products are more complex if few but more complex countries have the ability to make them.

We can use international trade data to empirically measure the complexity of countries and products. The Economic Complexity Index (ECI) is an aggregate measure of productive capabilities of countries, and the Product Complexity Index (PCI) is an aggregate measure that reflects the capabilities required for products. Box 4.1 gives some details behind the logic for these two measures. There is a symmetry between these two measures that matches the intuition of complexity. In general, ECI will be the average of the PCI of all products a country produces with a revealed comparative advantage (RCA), and PCI will be the average ECI of all the countries that produce that product. These concepts and measures are useful because empirical analysis shows that ECI is both highly correlated to GDP per capita and highly predictive of future growth, when controlling for GDP per capita.

Box 4.1: Measuring Complexity of Countries and Products: *Economic Complexity Index (ECI) and Product Complexity Index (PCI)*

In the Atlas of Economic Complexity, we have used international trade data to measure the complexity of countries and products. These measures are called the Economic Complexity Index (ECI) and Product Complexity Index (PCI) respectively. At the core of these calculations is the idea of Revealed Comparative Advantage (RCA), which is measured as:

$$RCA_{cp} = \frac{X_{cp}/\Sigma_c X_{cp}}{\Sigma_p X_{cp}/\Sigma_c \Sigma_p X_{cp}}$$

where Xcp are the exports of country c of product p. An RCA above 1 means that the country has a revealed comparative advantage in that product. In other words, it exports more of the product than the global average. We can use the RCA to define two other values:

Diversity – The number of products a country has an RCA of 1 or greater

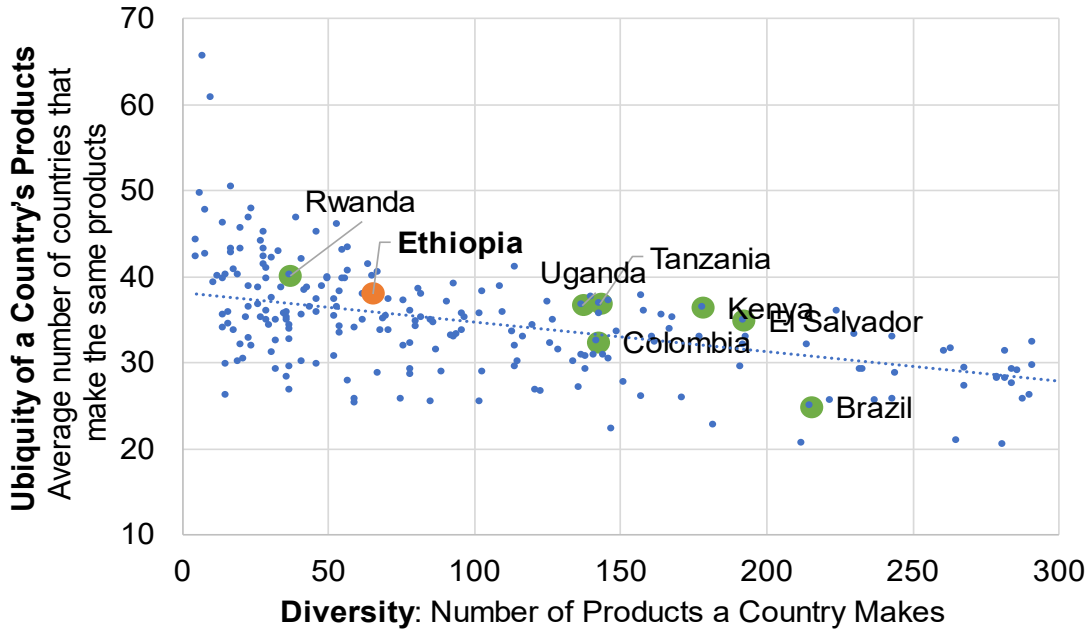
Ubiquity – The number of countries that have an RCA of 1 or greater for a specific product

Diversity is a measure of how many different things an economy makes, and ubiquity is measure of how many countries make a specific product. The idea behind our measures of complexity is that capabilities will manifest themselves in the diversity of countries and ubiquity of products. Using trade data, we can show that there is a strong negative relationship between a country's diversity and the average ubiquity of the products it produces.

Countries that have a more complete set of all possible capabilities can make more things (high diversity) but also are the only ones that are able to the things that are harder to make and thus rarer (low average ubiquity). A product, however, may have low ubiquity because it requires not more a capability but some rare natural resource. But in this case, we can use information contained about the diversity of the countries that produce said product to update our idea of product complexity. Similarly, a country might have a higher diversity because it makes many low complexity products. In this case we can use information contained about the ubiquity of the products it produces to update our notion of complexity.

Box 4.1 Cont.

Diversity vs. Average Ubiquity 2017



Source: Atlas of Economic Complexity

The Economic Complexity Index (ECI) and Product Complexity Index (PCI) use this reflective relationship between diversity of countries and ubiquity of products to create an index of complexity for countries and products respectively. More technically, we start with diversity of countries and ubiquity of products. Then we move to the average ubiquity of countries and average diversity of products. We continue to update the measures for countries and products until they converge to a value which is ECI and PCI.

Figure 4.8 shows the relationship between a country's ECI and its GDP per capita. As the theory of economic complexity would predict, poorer countries tend to have a lower ECI and richer countries tend to have a higher ECI. But ECI is also predictive of future growth. Countries with a level of income lower than predicted by their ECI tend to grow faster in subsequent years, while those with a level of income higher than predicted by their ECI tend to grow slower.[22] We can interpret this as meaning that countries tend to reach the level of income that can be supported by the underlying complexity or capabilities for production that they have.

[22] Hausmann et al., *The Atlas of Economic Complexity*.

Figure 4.8: ECI and GDP Per Capita, 2019

Source: Atlas of Economic Complexity, World Bank World Development Indicators

Form Figure 4.8, we can see that Ethiopia is a relatively low-complexity and low-income country. It is below the line of best fit which means that it does have some room to grow with the existing productive capabilities that it has that are already expressed within its exports. However, it is closer to the line of best fit than many other countries. As a result, the Atlas of Economic Complexity projected that Ethiopia's average growth between 2017 and 2027 would be closer to about 4.33% rather than the much higher rates it achieved earlier, and lower than that projected for other peers like Uganda.[23] The same exercise based on 2020 global trade data finds that Ethiopia's projected growth would be 5.33% for the next 10 years.

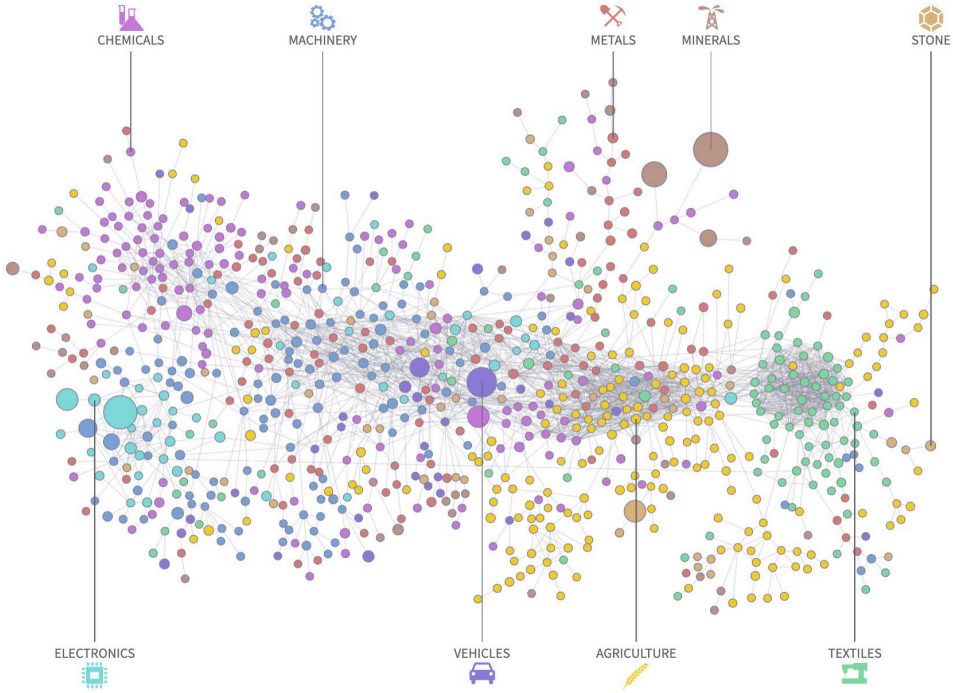
The complexity lens has a clear implication for the question of what products can most benefit a country. Notwithstanding priorities that a country might have for job creation, foreign exchange generation or other priorities, all else equal a country will benefit from diversifying into products that are more complex (high PCI) as these will tend to support rising income levels and expand the capability set of the country, thus making further diversification easier. A different set of complexity metrics can also help us more rigorously define what products are easier or more feasible for a country to produce. Countries tend not to diversify into products randomly. Instead, countries tend to diversify through a progression of expanding capabilities, diversifying into products that require similar capabilities to those that they already have. We can again use international trade data to create an empirical measure how similar and thus how close in capabilities two products are. We call this measure *proximity* of products. And using network visualization tools, we can visualize the proximity of all products in what we call the *Product Space*. Box 4.2 provides detail on how to calculate proximity and describes the Product Space.

[23] Harvard Growth Lab, "The Atlas of Economic Complexity," 2022, https://atlas.cid.harvard.edu/.

Box 4.2: Introducing the Product Space

Trade data also allow us to see how a country's productive capabilities could evolve over time by defining a measure of similarity between two products. For example, two products are similar (likely to use many of the same capabilities) if they are often produced by the same country. For example, countries that produce men's shirts often also produce women's shirts. The *proximity* between men's shirts and women's shirts is high. Meanwhile, we countries that produce men's shirts are not necessarily very likely to also produce airplanes, such that the proximity between these products is low. After calculating the proximity between all pairs of products, relationships can be seen in a network visualization called the *Product Space*. The figure below shows a visualization of the Product Space where each node is a product, and nodes are sized by their value global trade. Each edge is a connection to a *nearby* (i.e., proximate product). The nodes are colored by broad groupings of products by industry.

The Product Space



Source: Atlas of Economic Complexity

It is important to note that proximity does not necessarily have to do with being on the same value chain or input-output relationships. In fact, there are many examples of raw materials being far away from downstream products in this capability space. This is because the knowhow for extracting raw materials is rarely similar to the knowhow required for making something further down the value chain. For example, cocoa and chocolate bars are not proximate to one another in capabilities. In other words, countries that produce cocoa are usually not the ones that make chocolate bars.

The Product Space has several interesting characteristics. First, it reveals many clusters of similar products. There is a tightly clustered set of garment products, where capabilities are highly related. Across the space, there are clusters of electronic products and chemical products and these far away in the capability space from garments as well as most agriculture and food products. If we were to look at PCI of products across the space, we would see that in general the right-hand side of the Product Space tends to be less complex than the left-hand side. The Product Space also shows that there are many products on the periphery that are not near to very many other products. This is true for oil and several other mineral products and commodities that make up a large share of world trade but are low in product complexity and similarity to other products. Meanwhile, there is a denser core of products that are close to one another and well connected to many parts of the Product Space. Several types of machinery products lie in this core.

By looking at a country's position in the Product Space we can better understand its diversification opportunities. Countries are more likely to diversify into products that are close to the existing products a country already produces with a revealed comparative advantage.[24] We can identify these products through a measure that captures how far a potential new product is to all the products that a country currently produces. This measure is called *distance*. Less distant products will tend to be more feasible for a country because they are most related to the capabilities that the economy already has. In the next sections, we will use this measure of distance together with other measures of complexity to analyze Ethiopia's diversification challenge and identify opportunities.

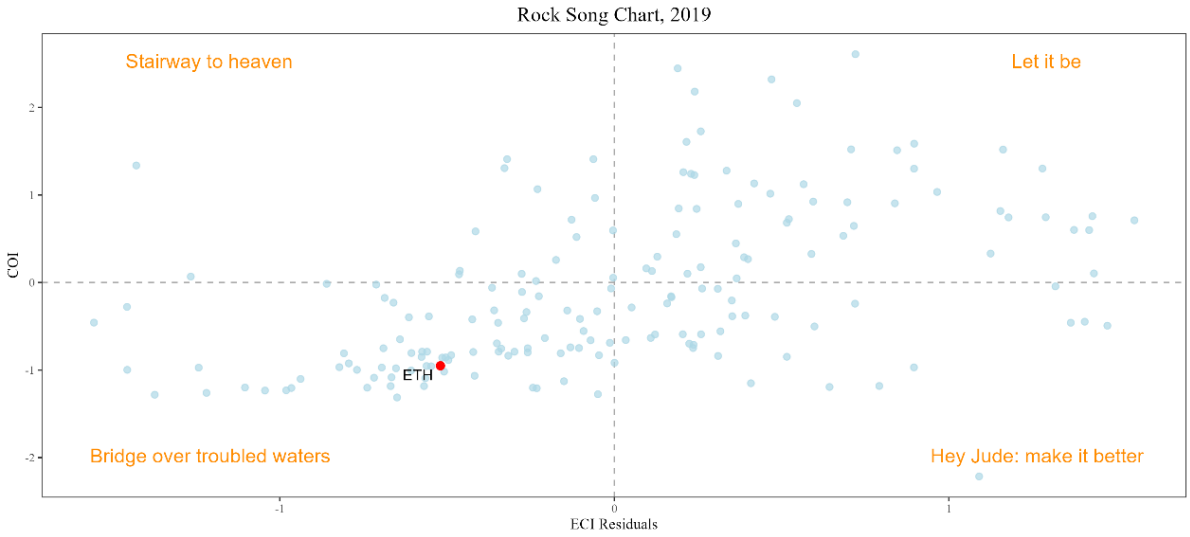
Ethiopia's Diversification Challenge

Countries will have different positions in the Product Space and thus different diversification opportunities and challenges. Figure 4.9 combines complexity relative to income with position in the Product Space. The x-axis is a measure of complexity after controlling for natural resource rents and income per capita. It is a measure reflective of the extent to which countries can grow given their existing complexities. This can also be thought of as a measure of growth potential along the extensive margin. The y-axis, meanwhile, measures whether countries can easily grow at the extensive margin. Specifically, it uses a measure called Complexity Outlook Index (COI). COI is a measure of the average complexity of products that a country does not produce weighted by the inverse of their distance. In other words, it is a measure of the extent to which a country has easy-to-reach opportunities for increasing complexity through diversifying into nearby products.

There are four main typologies of countries captured in Figure 4.9. First are countries with relatively high complexity and low COI. These are mostly developed countries that are at the technological frontier of production. Having already exhausted most of the opportunities in the Product Space, countries in this quadrant tend to need to focus on innovation and competitiveness policies to create new products and industries for future growth and redefine what is possible. Germany and Japan are two examples of countries in this quadrant.

[24] Hausmann et al., *The Atlas of Economic Complexity*.

Figure 4.9: Diversification Strategy Profiles, 2019



Source: Atlas of Economic Complexity

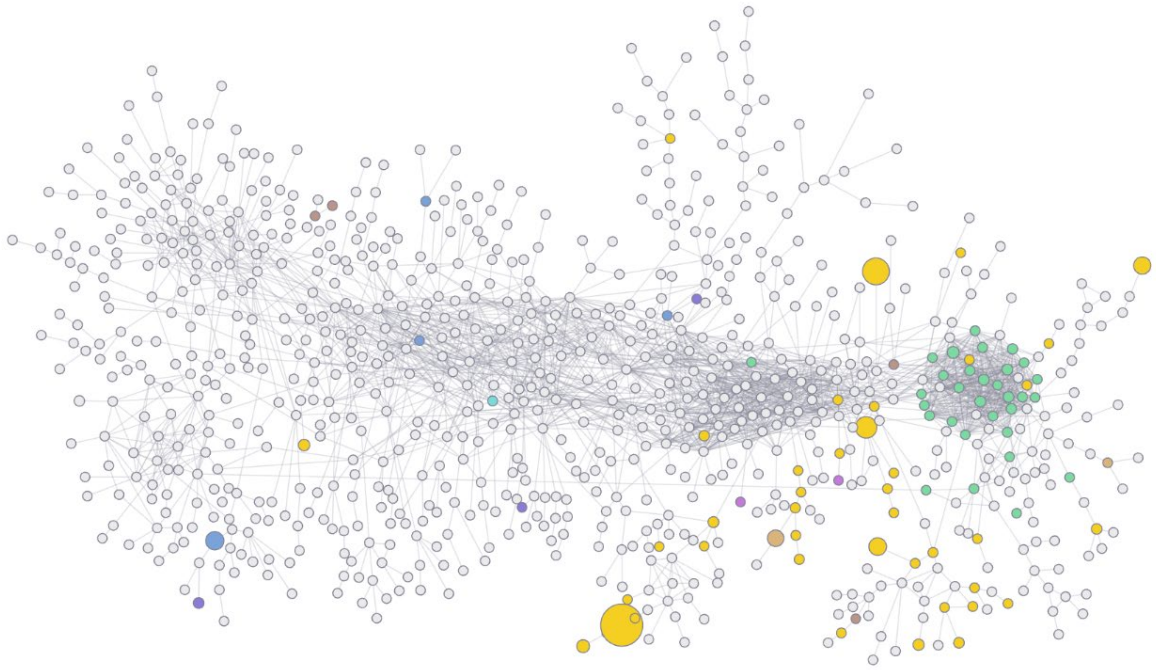
Developing countries, however, are not on or near the technological frontier. Figure 4.9 allows us to group countries that are not on the frontier into three rough categories. Some countries, like China and India, have relatively high complexity and high COI. These countries should be able to take a light touch toward diversification strategy because their economies are already producing many high-complexity products and have many capabilities that should make the discovery and growth of new products and industries easy as well. These countries should be able to grow substantially unless there are constraints preventing them from doing so. A few countries are defined by lower ECI, after controlling for GDP and natural resources, but have relatively high COI. These countries will struggle to grow based on their current exports, but their capabilities should allow for easier transitions to new and higher complexity exports. In other words, they are well positioned in the Product Space. These countries, which include Argentina and Greece, may be able to succeed with parsimonious industrial policy that allow them to make small jumps to nearby opportunities in the Product Space. However, they may also be facing important constraints that have prevented that diversification from happening already, such that overcoming those constraints would be expected to lead to significant gains in diversification.

Lastly, there are countries in with relatively low complexity and low COI. This is the group that Ethiopia falls squarely within. These countries lack strong growth opportunities within their existing export baskets and have capability sets that are distant from more valuable parts of the Product Space. In order to accelerate diversification and long-term growth potential, these countries will need to strategize around longer jumps (or "strategic bets") to areas of the Product Space that are more complex while also more gradually diversifying around existing capabilities. This is clearly the most difficult quadrant for a country to find itself in. It is also where most least developed countries find themselves. This position implies that there are many coordination

challenges to overcome for new comparative advantages to emerge. Some of these will be related to a narrow base of knowhow and others may be related to gaps in public goods and services that firms need to be competitive in export markets. For any diversification strategy, it is therefore important to understand where the knowhow can come from for a particular economic activity as well as public inputs may be necessary for its viability.

To begin to identify specific opportunities that are more and less strategic for Ethiopia, we can analyze Ethiopia's position in the Product Space (Figure 4.10). We can see that Ethiopia's current exports (with an RCA greater than or equal to one) are concentrated in the textiles cluster, where many products have emerged over the recent past, and many scattered agricultural products that tend to be in the periphery of the Product Space. In this figure, nodes are sized by the value of Ethiopia's exports. The largest node is coffee, and the next largest nodes include other oil seeds (i.e., sesame seeds), other vegetables, dried legumes, and cut flowers. The least peripherally located of these products is other vegetables, which Ethiopia overwhelmingly to Somalia. Ethiopia lacks a presence — aside from a few isolated products in the highly-connected core of the Product Space or in higher-value clusters.

Figure 4.10: Ethiopia in the Product Space, 2020

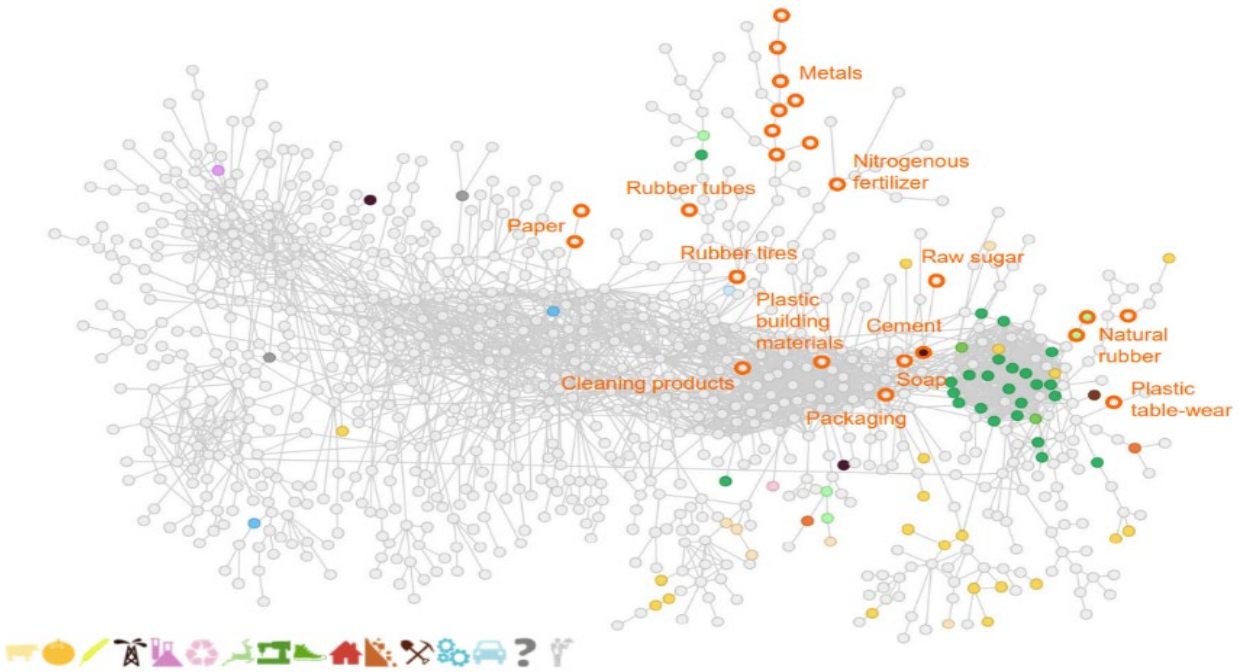


Note: Nodes sized by value of Ethiopian exports.
Source: Atlas of Economic Complexity

Ethiopia faces a difficult position in the Product Space, but it is also much improved in comparison to two decades ago. In the early 2000s, Ethiopia was very near rock bottom in global rankings of economic complexity with an ECI that ranked around 120th out of 132 nations. Over the last decade, Ethiopia has improved to crack the top 100, which is a real achievement. Ethiopia's

position in the Product Space was far emptier in 2000, without any presence in the garment sector. Yet, it is important to ask if Ethiopia could have grown its exports more and would have been in a better position for diversification today if it had followed a different diversification strategy. Our analysis suggests that Ethiopia's strategies at the industry-level during the GTP era were misguided in important ways. Figure 4.11 overlays products that were targeted in GTP I on top of Ethiopia's position in the Product Space in 2016. Since GTP I was launched in 2010, this figure shows that most of these opportunities were not captured as exports with a revealed comparative advantage by 2016. Additionally, the exercise shows that many of the targeted products were far from Ethiopia's existing capabilities, on the periphery of the Product Space, or both. Many, like metals for example, were questionable from both the perspective of feasibility and potential benefits.

Figure 4.11: Ethiopia in the Product Space in 2016 and GTP I Priority Products



Source: Atlas of Economic Complexity; Growth Lab analysis of GTP I

GTP I did not necessarily target these products as exports, but that in itself was likely a weakness in the strategy that it targeted domestic production when foreign exchange generation was already a defining challenge. If Ethiopia were instead able to expand production of exports that reach the much larger global market, the foreign exchange constraint would not have tightened so much and some of the macroeconomic problems discussed in Chapter 3 may have been avoided. Looking ahead, Ethiopia needs to continue to diversity of its exports but in fundamentally new ways. One aspect of this is in identifying better strategy.

Diversification will not be an easy task for Ethiopia. With limited resources, and an unfavorable position in the Product Space, Ethiopia will need to be intentional on *what* products and sectors it aims for and *how* it strategically goes about increasing those exports. Its position in the Product

Space means that Ethiopia could be stuck in a "low-complexity trap" where it needs to produce more complex things to be closer to producing other more complex things. Part of this trap relates to knowhow, since it is nearly impossible to gain new capabilities if there are no firms present with related capabilities. Take for example the business of watchmaking. To make watches, you need watchmakers, but how are people going to learn to be watchmakers if there is no one else making watches to learn from? This type of "chicken and egg" problem is ubiquitous in low-complexity environments.

But thankfully, there are a few mechanisms that can be very helpful in overcoming knowhow constraints. The most important of these, at least in the short-term, is foreign direct investment. FDI essentially allows a company with knowhow that was developed in another place to transplant that knowhow into Ethiopia and quickly overcome this problem when conditions are right. FDI has indeed been an important reason behind the diversification that has taken hold in Ethiopia. Figure 4.12 visualizes internationally announced FDI projects in Ethiopia and other developing countries for comparison over the period 2009-2018, by industry or sector and source country. Ethiopia has received significant FDI in garments and textiles that is above most other countries shown here and on par with what India has received. Ethiopia has also received FDI on a more limited scale in several other categories, but virtually no FDI in a few categories that are prominent in other developing countries. In years prior to those covered in this figure, FDI in the cut flower industry was also essential to its emergence.

FDI will continue to play a critical role in Ethiopia's diversification, but strategies must be more targeted and sophisticated moving forward if the country is to accelerate export growth as needed to sustain high rates of overall growth. Ethiopia will need to intentional and strategic about *what* sectors it tries to attract and *how* it does so. International research has shown that such an approach to investment promotion does succeed in promoting diversification which other positive spillovers in the rest of the economy.[25] On the question of *what* FDI to target, Ethiopia can better leverage information on what industries are more feasible and what industries are likely to provide greater economic benefits. A starting point for this is in utilizing the complexity variables of distance, product complexity (PCI), and complexity opportunity gain (COG) to avoid the mistakes of GTP I. However, we could imagine other objectives like job creation being another important lens to consider and factor in. On the question of *how* to effectively promote FDI, there are missing public goods and constraints that firms will face. Ethiopia will have to focus on its strategic advantages while also working to overcome the constraints that prevent companies from seeing Ethiopia as a viable investment destination.

[25] Javorcik, Beata S. and Harding, Trofinn. *Roll Out the Red Carpet and They Will Come: Investment Promotion and FDI Inflows.* The Economic Journal. Vol. 121:557. December, 2011.

Figure 4.12: Announced FDI Projects in Ethiopia and Comparator Countries, 2009-2018

Source: fDi Markets. Each node represents a firm and is sized by the number of projects by the firm.

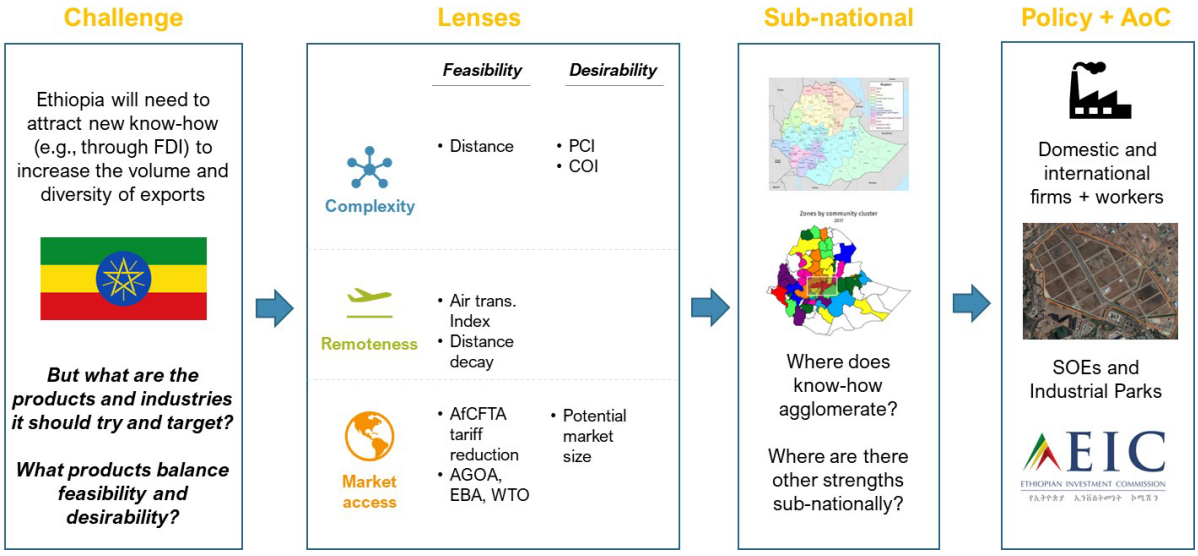
Starting in the next section, we develop a framework for targeted diversification in Ethiopia that builds on existing capabilities and strategic advantages while being aware of key disadvantages that Ethiopia faces. Figure 4.13 provides an overview of what this framework includes. When it comes to feasibility of potential products, product distance is often the most important. But because so much is far from Ethiopia in the Product Space, it is important to bring in other indicators of feasibility as well. It is also the case that markets tend to be physically distant from Ethiopia, which is land-locked with problematic travel times and costs to ports and large geographic distances, including to many growing African markets. In a word, Ethiopia has a challenge of remoteness, both for the country as a whole and for many parts of the country. Thus, we will integrate three additional perspectives to look at feasibility in addition to product distance at a national level.

The first is to explore potential opportunities that could benefit from the advantage of Ethiopian Airlines, since the presence of a globally connected and well-managed air carrier can help to overcome the disadvantage of remoteness. We explore this by utilizing data on which products are more likely to be transported by air. The presence of a globally connected and well-managed airline in Ethiopian Airlines. Second, we explore opportunities that could arise on both the intensive and extensive margins through market access advantages that could arise from free-trade agreements, including the recently ratified African Continental Free Trade Area (AfCFTA) as well as other trade relationships. Third, we explore productive capabilities and other strategic advantages and disadvantages at a subnational level. This allows us to begin to match where opportunities that

stand out through complexity analysis could be viable within the country. Productive capabilities vary widely within the country as do infrastructure assets such as connectivity to ports and the international airport in Addis Ababa. Ultimately when targeting diversification, through both FDI and domestic means, it is not enough to identify what products may be opportunities, since the obvious next question becomes where in the country are they viable.

After identifying what might be strategic opportunities for diversification, and to some extent where, we will explore how Ethiopia can coordinate "agents of change" to capture these opportunities. These agents of change include foreign investors through FDI, foreign workers, domestic producers including SOEs, and government trade and investment agencies (e.g., EIC, MOTRI, local bodies, industrial parks). Each of these groups has key roles to play in the diversification process, and thus strategies should target these groups, including by mapping them to strategic opportunities.

Figure 4.13: Framework for Targeted Diversification



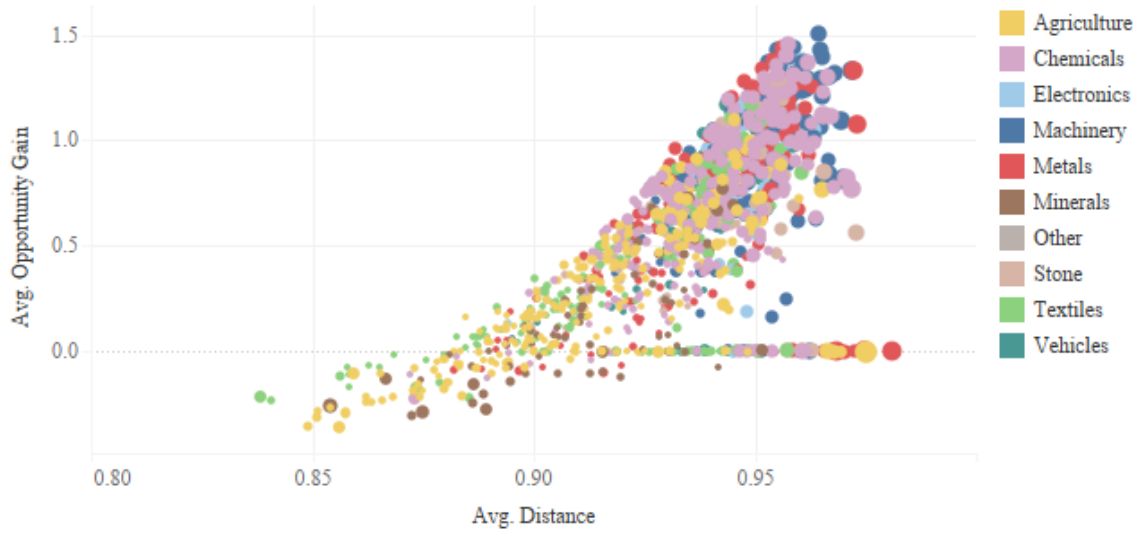
Source: Own construction

Complexity Lens on What Ethiopia Could Produce

The complexity lens introduces key a trade-off when targeting potential diversification opportunities. Informed strategies should aim to capitalize on products and industries that are closer to what the country already knows how to do but also target economic activities that are higher in complexity and introduce more productive knowhow. But when a country has a profile like Ethiopia's in the Product Space, these two considerations rarely align as more complex and better-connected products tend to be further from current capabilities. Figure 4.14 shows a graph for Ethiopia where distance to new products from Ethiopia's existing capabilities is on the x-axis and complexity opportunity gain (COG) is on the y-axis. Notice that there is a positive relationship between distance and COG. This reflects the trade-off mentioned above. Nearer products add less

complexity and knowhow, while products that could have much greater benefits and open more of are further away from Ethiopia's existing capabilities.

Figure 4.14: Distance and Opportunity Gain, Ethiopia (HS92 4-Digit, 2017)



Source: Atlas of Economic Complexity

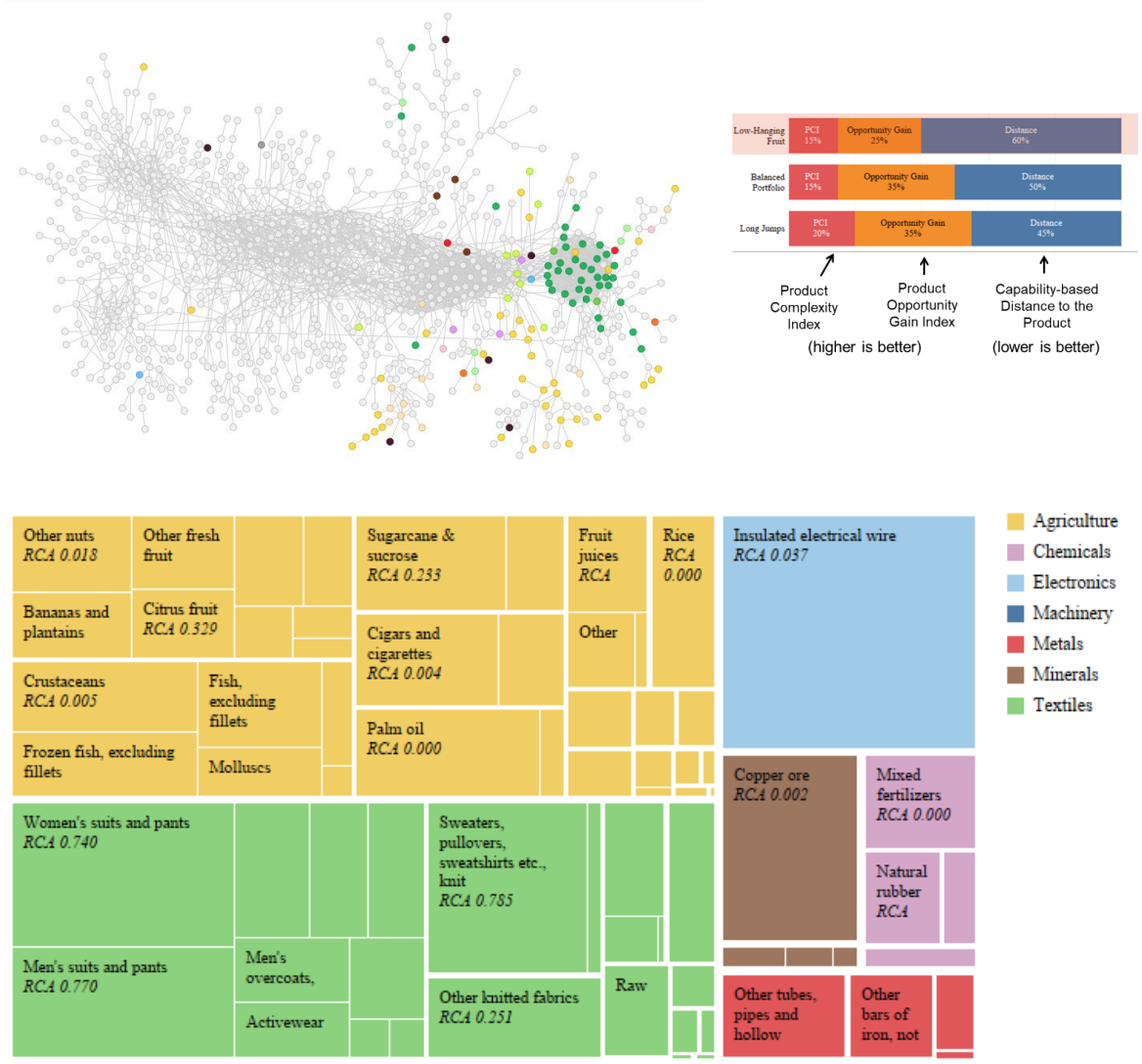
We can think of strategic approaches falling on a spectrum between two extremes. When much more consideration is given to distance to existing capabilities, we can think of this as a strategy that is focused on the *adjacent possible*. This is akin to a low risk, low reward approach. The other end of the spectrum, where much more consideration is given to the attractiveness of the product or industry than how far it is from current capabilities, focuses instead more on making *strategic bets*. This is a high risk, high reward approach. No matter where on this spectrum, a strategy falls it makes sense to target products and industries that lie high on the y-axis for a given value on the x-axis in Figure 4.14. In other words, for a given distance, we might as well target opportunities with higher complexity and/or complexity opportunity gain. On the graph, one could imagine a curve that rests on the top of the distribution. Just looking at the graph, a strategy focused on the adjacent possible would include many textiles or garment products. A strategy focused on strategic bets may include many chemical products.

Like with any strategy, it makes sense to avoid both extremes and instead balance considerations of risk and reward. Ethiopia will need to take a portfolio approach to diversification because it has a critical problem of low exports and low export growth. The adjacent possible are potential quick wins that could provide important jobs and some growth today. But Ethiopia should also be thinking about its future growth and make some investments towards strategic bets that could be more transformational. To balance this this, we create a ranking based on a weighted average of three dimensions: distance (or actually the inverse of distance because lower is better), PCI, and COG. The logic is that we ideally want to diversify into products that are relatively close, but

which offer us some complexity gains today as well as opening more of the Product Space tomorrow.

Below, we show the results of three different weights set across the three complexity variables based on trade data. Thus, this analysis is restricted to goods rather than services. The first set of results, where a higher weight is put on distance, represents a "low hanging fruit" strategy that focuses more on the adjacent possible (Figure 4.15). The next set of results are for a "long jumps" strategy where lower wight is put on distance (Figure 4.16). The final set of results represent a "balanced portfolio" with weights set in between the other two strategies (Figure 4.17). While this exercise is not meant to provide exact guidance on what products are most strategic, it can help give a sense for the types of products that fit under these various strategies and reveal important themes of diversification opportunities.

Figure 4.15. Results of a "Low Hanging Fruit" Targeting Approach for Ethiopia

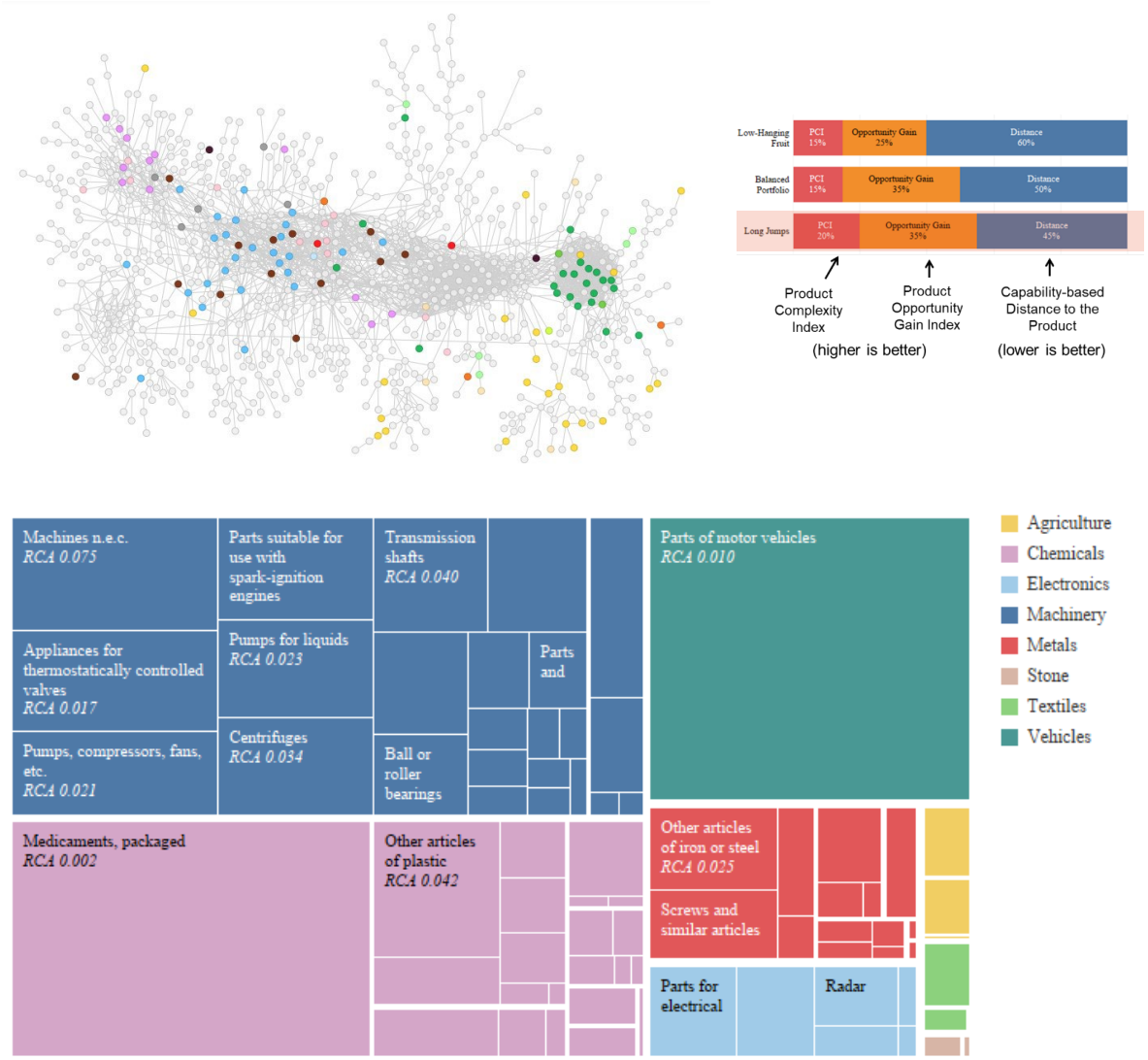


Source: Growth Lab analysis based on Atlas of Economic Complexity

Figure 4.15 shows the first set of results, including what Ethiopia's position in the in the Product Space would look like if it added these products as well as a tree map where resulting products are sized by global market size. Products labeled on the tree map are also provided with their current RCA. This "low hanging fruit" approach would include a focus on agriculture products, some agro-processing, and garments, much like what has been leading diversification in the recent past. Some products, especially in garments, already have RCAs significantly above zero, suggesting that Ethiopia may already be on a path to establish comparative advantages in these products and that there are existing firms in Ethiopia. This approach also includes one electrical product — insulated electrical wire — that has a large global market and is much more related to the garment cluster in the Product Space than it is to most electronics, as well as a few basic chemical products and metal products. Copper ore and a few other minerals appear here, but these would depend on the availability of this mineral resource in Ethiopia. This would be a very conservative strategy overall. Such a strategy might involve working with agriculture and agro-processing companies to expand to new crops and products that are close to what they are already doing. It might involve expansion of existing industrial parks in garments and increasing the types of garment companies that operate in them, or strategies that would allow garment companies to expand more easily outside of industrial parks. This might be easier to implement and accomplish, but it would offer fewer gains over the long run than strategies that target longer jumps, as shown next.

A "long jumps" strategy, as reflected in Figure 4.16 would have a very different profile as it seeks to get higher complexity and opportunity gains even at the risk of seeking out products that might be a bit further from existing capabilities. This strategy would attempt to reach in the more complex and connected core of the Product Space and into new industries and move into the high-value chemicals cluster. This strategy would involve targeting new exports in sectors like machinery, electronics, pharmaceuticals, and motor vehicle parts as well as more several metal products. Current RCAs across these diversification opportunities tend to be very low. Thus, such a strategy would require a more deliberate effort in attracting foreign companies that produce these more complex products and working to build the conditions needed for them to invest in Ethiopia. Agencies like the Ethiopian Investment Commission (EIC) would need to place a more complex role in facilitating deals and finding ways of overcoming bottlenecks specific to new industries and firms. It might also involve thinking through how to bring in new knowledge and expertise from other This would be a much more ambitious approach with each product, industry or firm pursued having a lower chance of success. A few successes, though, might be profoundly important for Ethiopia's export growth. Looking back in time, countries that have been highly successful in diversification and achieved export-led growth — such as Vietnam — experienced changes in their export baskets akin to this, often brought on through unique advantages for FDI industries. So, diversification opportunities like these may be lower likelihood, but they are not impossible.

Figure 4.16: Results of a "Long Jumps" Targeting Approach for Ethiopia

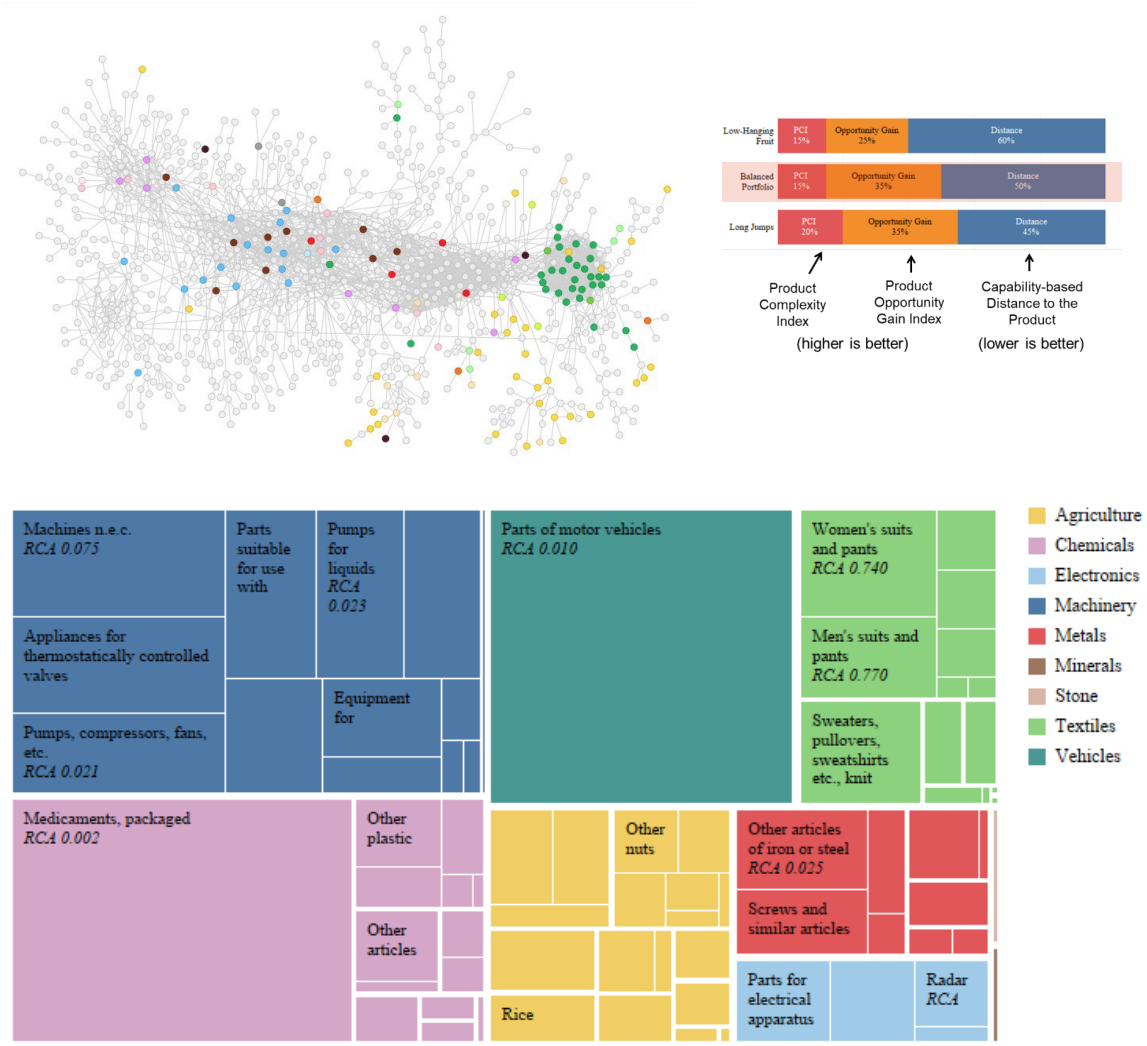


Source: Growth Lab analysis based on Atlas of Economic Complexity

Finally, a balanced portfolio strategy would split the difference in weighting between the other two strategies. Figure 4.17 shows these results. Not surprisingly, this results in a mix of opportunities from the other two strategies. This approach would target products across manufacturing, pharmaceuticals and chemicals, parts of motor vehicles, agriculture products, garments, metals, and electronics. Such an approach could involve actions that target existing businesses for some sectors and focus on FDI for other sectors. Such an approach is not necessarily easier, but it allows for hedging one's bets, balancing the need for quicker wins with the need for longer-term diversification prospects. This approach could be seen as more difficult if it falls on a single institution of government to manage across priorities. But Ethiopia, like most other countries, has different institutions from EIC to the Agricultural Transformation Agency (ATA)

and others that could divide responsibilities and enable more resources to be put toward export diversification in total.

Figure 4.17: Results of a "Balanced Portfolio" Targeting Approach for Ethiopia



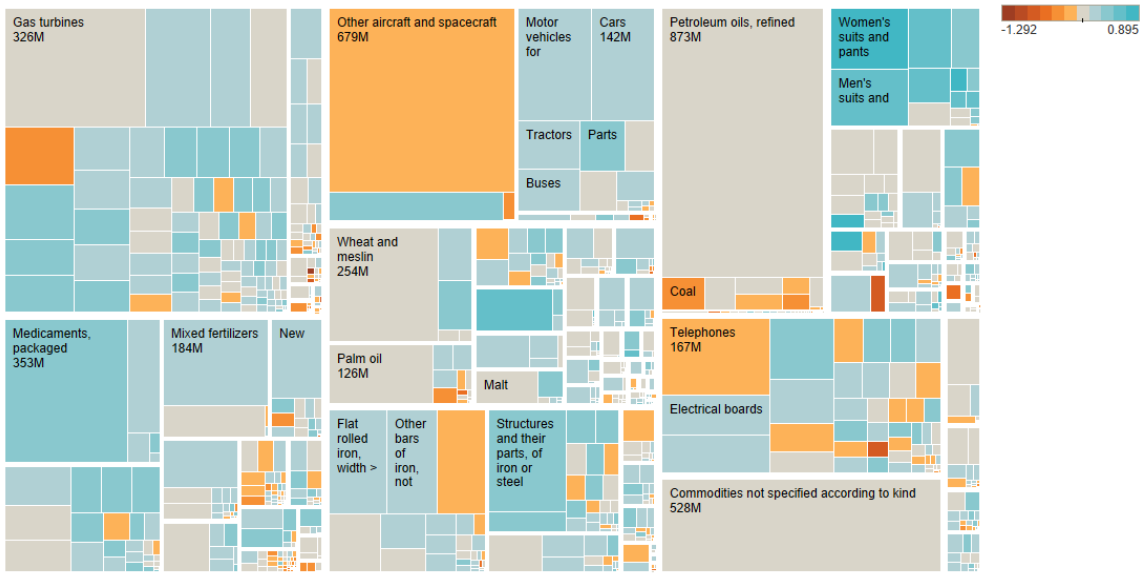
Source: Growth Lab analysis based on Atlas of Economic Complexity

While there is some overlap in these strategic approaches and the sectors identified by GTP I, there is less emphasis here on sectors like mining which are both distant and offer little complexity benefit. In addition, GTP strategies did not contain many, if any, products that are in the core and to the left in the Product Space. Targeted products may have been equally risky and hard to capture but with lower overall benefits. Since GTP I and GTP II, Ethiopia has changed track to incorporate new product areas for its overall diversification strategy. Export strategies and industrial policy approaches under development by the Government of Ethiopia, reviewed by the Growth Lab as part of its project in Ethiopia, apply this complexity logic in their targeting approaches.

One priority that often gets discussed in diversification conversations in Ethiopia, as in many developing countries, is that of import substitution. The basic idea is that your imports are ready market for your own domestic producers to try to target. With some amount of protection or other support, domestic producers could gain productivity through learning by doing to capture the domestic market. In the context, of Ethiopia where foreign exchange is such a binding constraint, the argument goes that import substitution could help alleviate some of the need for foreign exchange in the first place. Import substitution could make sense in certain cases, but the challenge with it is that for countries like Ethiopia where there is not a large, affluent middle class, the domestic market is small — much smaller than the global markets that can be served by exports. And more importantly, there is no guarantee that the things you import will align with distance or goals on complexity.

Figure 4.18 shows an approach that could be useful for identifying which products are more likely to achieve success in import substitution. The tree map shows Ethiopia's goods imports (rather than its exports as shown earlier) and colors the different products in Ethiopia's import basket by their overall score in the balanced portfolio diversification strategy. Blue means that the import item in question is a good fit with that strategy, while grey, orange, and red indicate that it is not a good fit (i.e., the product does not do a good job of balancing distance, complexity and opportunity gain). Some Ethiopia's largest imports are not good diversification bets (e.g., wheat, gas turbines, aircraft, and refined oil). But many other products, including some with a large domestic market like packaged medicaments, might be a better fit. Within these categories there are a range of considerations to be made, including which medicaments could be produced in Ethiopia among those imported and how policy could enable success. Some approaches to import substitution, like high tariff protection, can have negative impacts on prices and downstream production.

Figure 4.18: Ethiopia's Imports Colored by Balanced Portfolio Score, 2016-2018 Average



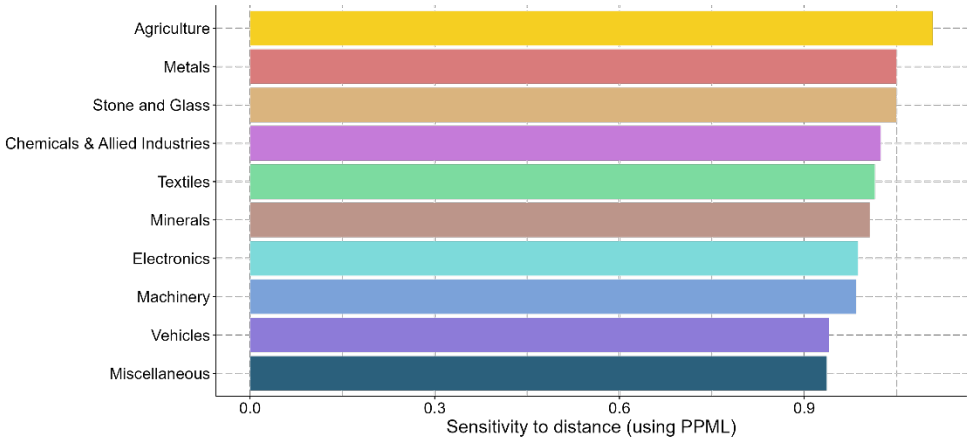
Source: Atlas of Economic Complexity

Remoteness Considerations

Many countries around the world find themselves in the unfavorable part of the Product Space where nearby opportunities for more complex and strategic products are few and far between. This alone would make diversification difficult in Ethiopia. However, Ethiopia also faces another challenge that makes the diversification even more difficult. Namely, Ethiopia suffers from remoteness, both from a global perspective and in its domestic economic geography. In a global sense, Ethiopia is landlocked without direct access to a port. This means that moving goods outside of the country by shipping is expensive in cost and time. The Port of Djibouti dominates imports and exports of the country, whereas only a small percentage enter the country from Port Berbera in Somalia and Port Sudan. Meanwhile, Ethiopia's immediate neighbors tend to have low purchasing power and road and rail networks across the larger region are lacking. Additionally, areas within Ethiopia are mostly sparsely populated with difficult terrain, long transport times and high transport costs. This makes the movement of goods, services, and people expensive within the country. Consequently, an industrial park in a remote part of the country, even if it were efficient, would face the challenge of bringing critical inputs in and moving finished goods out.

One strategy for dealing with Ethiopia's remoteness would be to focus on products and industries that are less sensitive to travel over long distances, and therefore more likely to be resilient to trade times and costs. We can use a gravity model to look at which products are able to better survive longer distance travel. [26] By looking at patterns of existing trade, we can see which products seem to be less effected by distance between countries when it comes to trade flows. These products and industries could be strategic for Ethiopia to focus on if it hopes to move things by land or sea. Figure 4.19 shows the results of this analysis at the sector level (i.e., averages across products).

Figure 4.19: Sensitivity to Distance by Sector

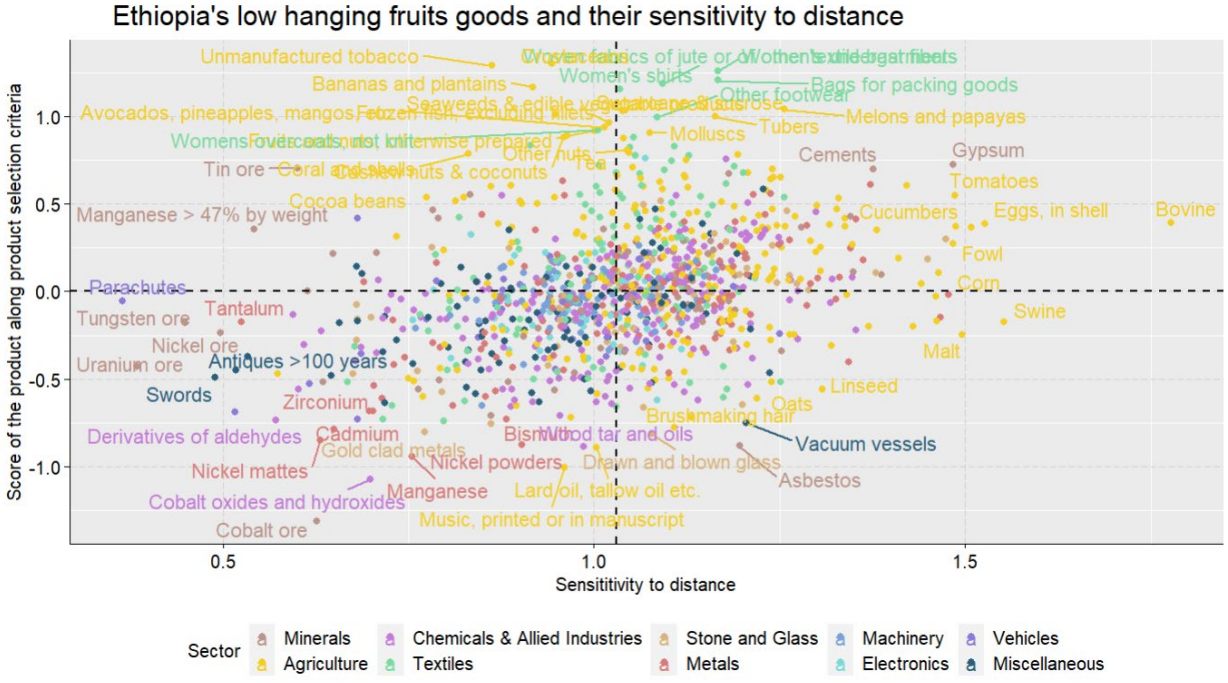


Source: Growth Lab calculations using UN Comtrade data

[26] Growth Lab calculations using UN Comtrade data

Agricultural products are most sensitive to geographical distance, on average. This makes sense when one thinks about shelf life of many food products. Meanwhile, stone and glass are least sensitive to distance to average. This is perhaps surprising but is the driven by high value and precious stones. In the Figure 4.20 below, we look at this sensitivity at a more disaggregated level and alongside the complexity lens discussed earlier. The vertical axis is the "low hanging fruit" by product and the horizontal axis depicts the sensitivity of products to the distances they can travel. The products are colored by the broad product category.

Figure 4.20: Products by Complexity Analysis Score and Sensitivity to Distance

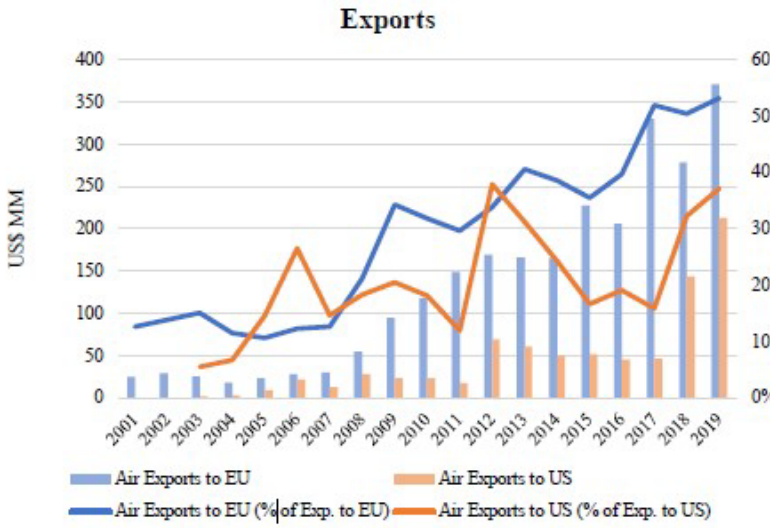


Source: Growth Lab calculations using UN Comtrade data

There are a few observations that stand out in this figure. First, there is a positive correlation between distance sensitivity and the "low-hanging fruit" score. This means that the products that are especially close by and strategic for Ethiopia from a diversification standpoint seem to be more sensitive to geographical distance. This is one way that diversification in Ethiopia might be especially frustrated by Ethiopia's geography. Second, restricting to the products with a "low-hanging fruit" score of more than zero, there are many products that are sensitive to distance but also many that are not as sensitive to distance. As we will discuss in a later section, this difference is something to consider when thinking about where some strategic products might be best positioned to succeed geographically within Ethiopia. Those with better port access might have an easier time developing those products more sensitive to distance while other regions might find those products with a lower sensitivity to distance more feasible.

Another way that countries can overcome their remoteness is through air-transport. Air transport has the benefit that it depends much less little about borders on the ground, ruggedness, and even to a certain extent long distances. People and goods can travel anywhere in the world within a day or two at most via air. Air transport has become increasingly important for Ethiopia. Ethiopian Airlines (EAL) is the largest airlines on the African continent and can connect Ethiopia to the rest of the world despite Ethiopia being landlocked. The commercial success of EAL has allowed the country to increasingly leverage its freight capabilities to promote its exports and to reduce costs for its imports.[27] A significant portion of Ethiopian exports and imports, especially to markets like the E.U. and U.S. travel via air. Figure 4.21 below shows that roughly 50% of Ethiopia's exports to the E.U. and 40% of its exports to the U.S. were via air as of 2019.

Figure 4.21: Ethiopia's Air Trade to the E.U. and U.S., 2001 -2019



Source: US Census Bureau

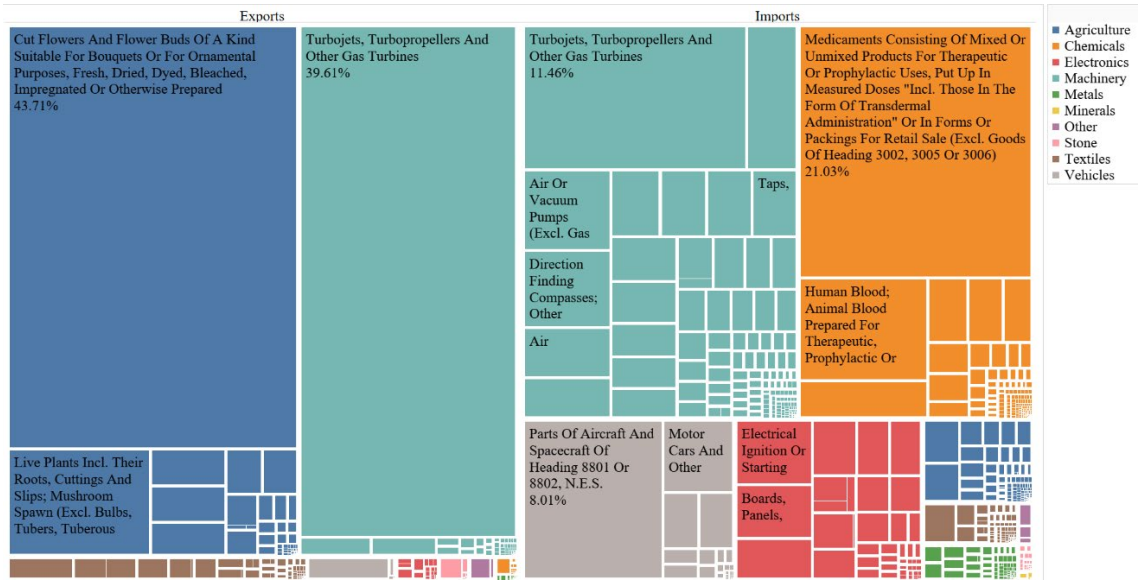
Figure 4.22 breaks down air trade with the E.U. and U.S. by product. Ethiopia's exports by air to the E.U. are highly concentrated in cut flower and live plants, which has been a success story for the country. The other large category for this year of data appears to be a component of aircrafts themselves, likely resulting from the selling of equipment from Ethiopian Airlines to another airline. Cut flowers are especially amenable to air travel, and in fact highly reliant on the availability of air travel. Because they are highly perishable, but also much higher margin, they will be exported by air from producing countries to large markets like the E.U. and U.S. In Ethiopia, cut flowers emerged as a significant export in 2006 after government support and local entrepreneurship helped bring in foreign investment from Dutch and Israeli firms. Ethiopia was able to massively increase exports of cut flowers to the Netherlands, capturing more than 10% of the Dutch import market for cut flowers within a few years, though not growing much beyond this market share and not diversifying very much to other markets over time. This would not have been

[27] Goldstein (2021)

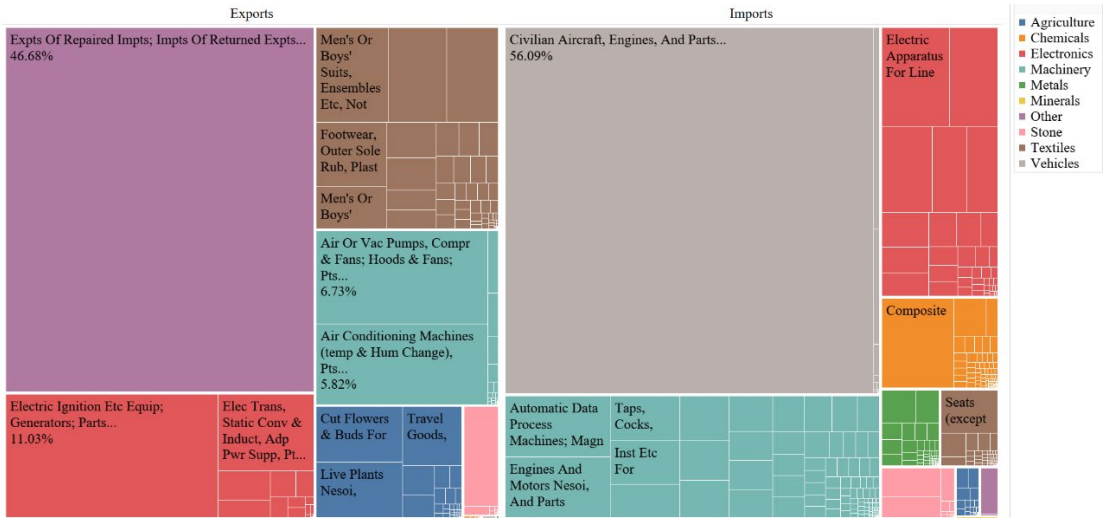
possible without the development of competitive air transport out of Ethiopia. Meanwhile, Ethiopia's exports by air to the U.S. market are more varied. Apart from re-exported products, air transport is important for some garment and electronics exports to the United States. Exports by air from Ethiopia to the U.S. include a few products that represent very recent new exports for Ethiopia in promising parts of the Product Space. These include air conditioners; pumps, compressors, and fans; and electrical ignition equipment. These products illustrate that when combined with special trade access, which will be discussed later in this chapter, air connectivity has an important ability to help Ethiopia overcome diversification challenges.

Figure 4.22: Ethiopia's Air Trade with the E.U. and U.S. 2017-2019

European Union



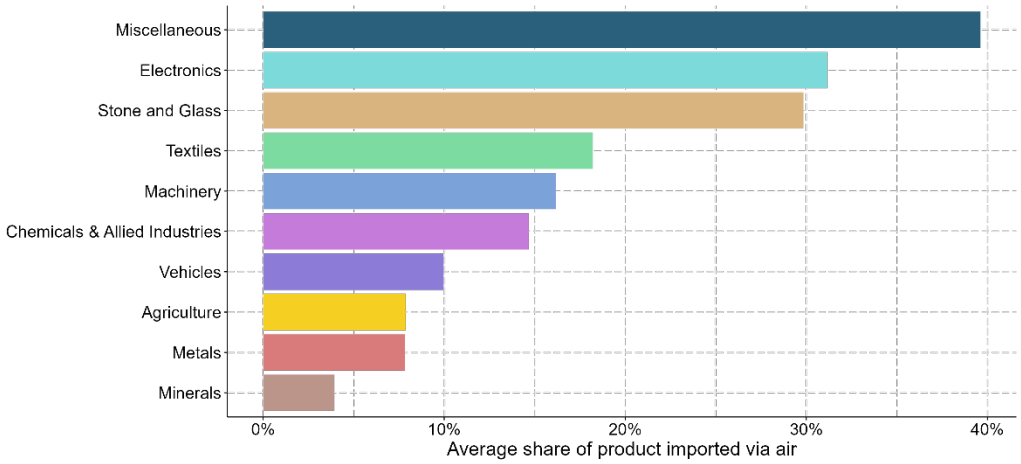
United States



Source: US Census Bureau. Each observation is an HS4 Industry

The experience of cut flowers to the E.U. and more diversified exports to the U.S. suggests that amenability to air transport is an important consideration for export diversification strategies for Ethiopia. Therefore, we look beyond the products that Ethiopia currently exports by air and use data from the U.S. Bureau of Customs and Eurostat to understand what products tended to be imported by air by the United States and Europe overall. By dividing the share of a product imported into the United States or Europe via air (from any country) by the total imports of that product by all mode of transportation, we calculate a measure of the air transport intensity of products. Our analysis reveals that at the sectoral level, electronics, stone and glass, and textiles represent the top three product sectors with a high average share of products imported via air (excluding the category of miscellaneous products). Given that our shares are calculated using the total value of imports we can understand why electronics and stone and glass dominate — products in these categories tend to have a high value per weight.

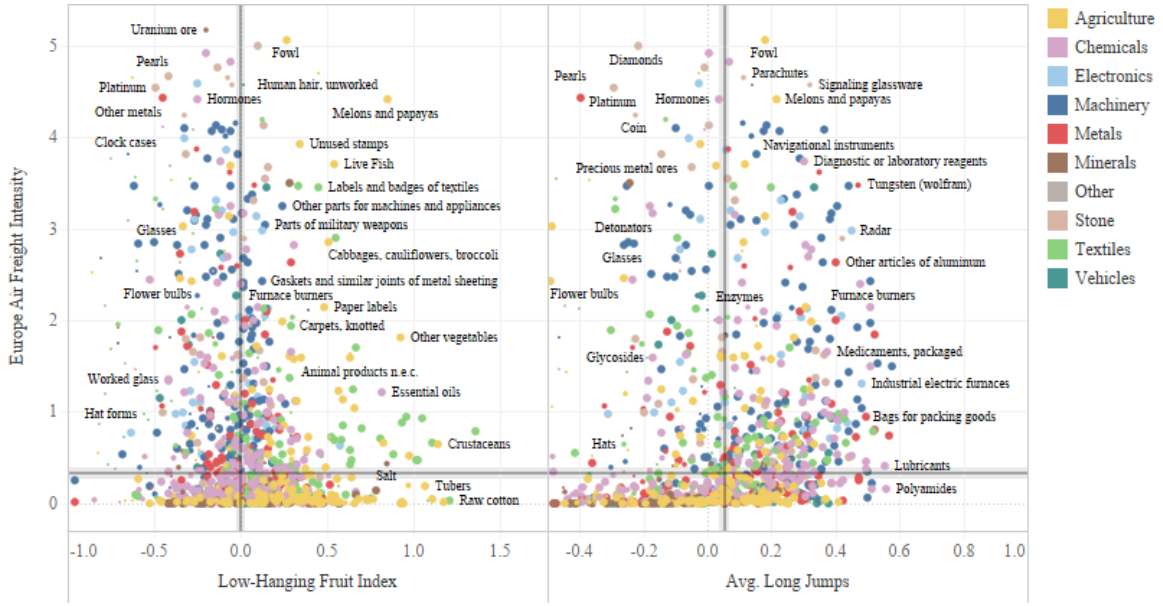
Figure 4.23: Air Transport Intensity of Imports to the United States by Sector



Source: Own calculations using U.S. Customs data

In comparison to Figure 4.19, we can see that differences are starker here at the sector level for air transport intensity than they were for sensitivity to distance. This implies that Ethiopia's remoteness is an important disadvantage across most exports while access to Ethiopian Airlines is a special advantage for a narrower selection of products. Layering on our indices for "low hanging fruit" and "long jumps,", Figure 4.24 looks at what products in both strategies could be most amenable to air transport (using the E.U. data to construct the air index). For the low hanging fruit strategy, most of these products are in certain agricultural products like cabbages, melons, and live fish, as well as some textile products, including labels and badges as well as carpets. For long jumps, there is a larger array of potential products across generally higher-value export products in a range of categories. This pattern reveals that Ethiopia's current export basket is not well positioned to take advantage of the asset of Ethiopian Airlines and very good air connectivity.

Figure 4.24: Potential Products by Targeting Approach and Air Transport Intensity



Source: Goldstein (2021)

Air transport is already an important mode of transport for Ethiopian exports. However, the analysis above suggests that it is underutilized. One that is particularly interesting product, though there are many others, is packaged medicaments. Though it is a longer jump for Ethiopia, its amenability to air transport, high rate of imports into Ethiopia (see Figure 4.18), past FDI announcements (see Figure 4.12), and the recent experience with the COVID-19 pandemic might make for important opportunities for strategic investment promotion by Ethiopia. Ethiopia has in fact been developing a public industrial park, Kilinto, with access to the airport that is targeted for pharmaceutical companies. Yet despite the inauguration of this industrial park in 2019 and announced interest by several global companies, satellite imagery shows that this park remains overwhelmingly empty and underdeveloped as of writing in late 2022.

Opportunities from Trade Agreements

To sell abroad, Ethiopian firms and foreign firms alike need access to foreign markets. Thus, tariff and other trade barriers can be a significant obstacle for increasing exports. But equally true, preferential access to certain markets can be something that gives Ethiopian goods and services an advantage over competitors. The economic histories of many countries have been impacted significantly preferential access to certain markets and the increase in investment that has followed gaining market access.[28]

Free trade agreements and other preferential trade arrangements are an important component of any strategy for Ethiopia to sell more to other countries. Here we discuss three sets of trade

[28] See examples of China and WTO access, Bangladesh in the Multi-Fibre Agreement, and Mexico with NAFTA

preferences and their relevance for Ethiopia's diversification pathways: (1) World Trade Organization (WTO) most favored nation (MFN) status; (2) American Growth and Opportunity Act (AGOA) and E.U. Everything But Arms (EBA) special market access; and (3) the new African Continental Free Trade Area (AfCFTA) and existing regional economic communities (RECs).

WTO Membership

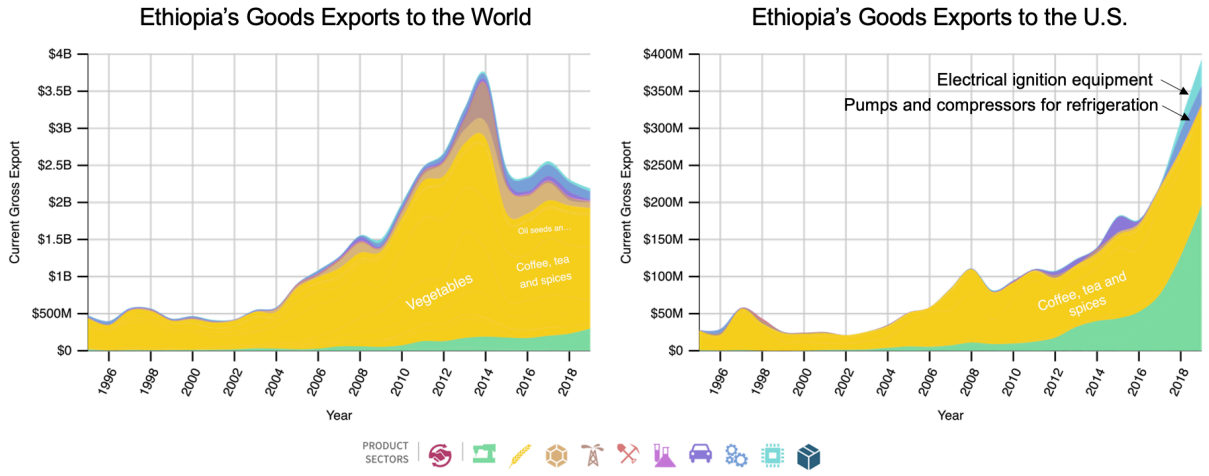
Ethiopia is currently not a member of the WTO, though it has stated intentions and begin the process to join. As a result, it does not benefit from the MFN status that member countries receive from one another. One consequence of this is that Ethiopian goods, on average, face higher tariffs in world markets than other countries. Talks to join the WTO for Ethiopia have been ongoing for several years, but have effectively stalled in their progress, especially with the onset of the current conflict. WTO MFN status not only provides lower tariffs for Ethiopian goods and services in external markets, but it also serves to provide certainty to investors who would invest in Ethiopia to produce new products and industries for exports. In the case of China, research has shown that the impact of China's accession to the WTO were less from tariff rates to the U.S. or other markets but about policy certainty.[29] China had MFN rates to the U.S. market before its joining of the WTO, but this access had to be approved each year, creating uncertainty for investors that were thinking about their projects in China from a long-term perspective. By joining WTO in the early 2000s, China could provide investors in the with much greater certainty that they would continue to have market access at least at MFN rates without other political considerations putting this at risk. Unlike bilateral trade arrangements, WTO access is harder to unliterally remove.

AGOA and EBA

As a low-income country, Ethiopia has historically benefited from access to preferential market access to the U.S. via AGOA for the USA and to the E.U. via EBA. Under each of these arrangements, Ethiopia has had duty-free access for many products. While overall exports have disappointed in the last five to ten years, both AGOA and EBA had allowed Ethiopia to diversify to new products and have supported growth in existing exports. Several industries in Ethiopia have benefited from these programs. The growth of cut flowers and horticulture as an export industry was supported by EBA and Dutch FDI. However, EBA is otherwise under-utilized for Ethiopian exports.[30] Prior to Ethiopia being delisted from AGOA at the start of 2022 amidst the conflict, the agreement had helped spur exports in textiles and garments and was even showing some promise in electronics and machinery, as discussed earlier. Partially as a result of the agreement, the United States had become the largest destination for goods exports from Ethiopia (20.7% of exports), surpassing China in 2017 and reaching $471 million in 2019. Exports to the U.S. while AGOA was active continued to grow at 22.5% per year since 2014, which is a striking difference from Ethiopia's overall export stagnation (Figure 4.25).

[29] Rosen, Daniel H. "China and the World Trade Organization: An Economic Balance Sheet." PIIE. March 2, 2016. https://www.piie.com/publications/policy-briefs/china-and-world-tradeorganization-economic-balance-sheet

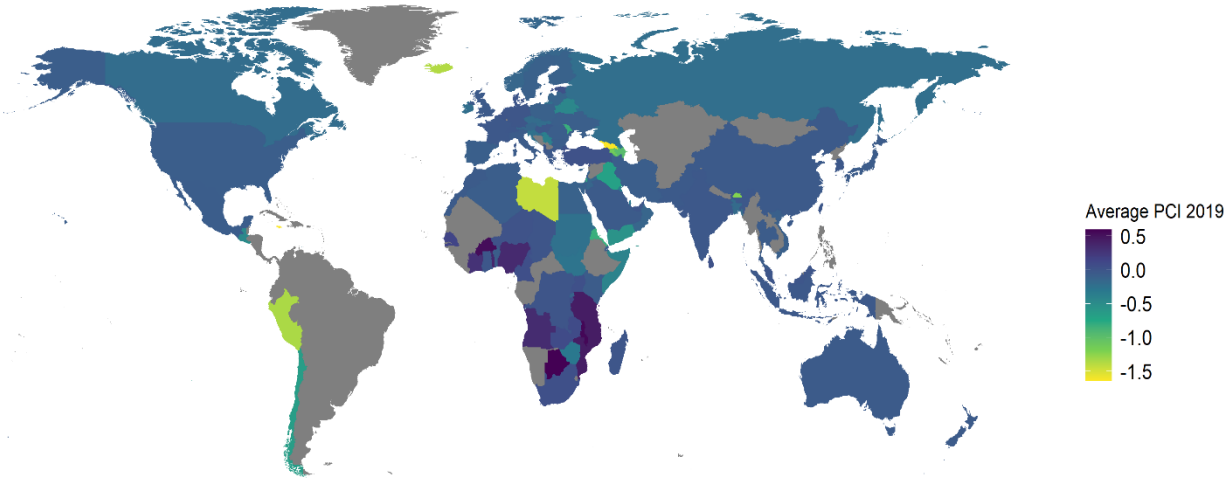
Figure 4.25: Ethiopia's Exports to the World (left) in Comparison to the U.S. (right), 1995-2019



Source: Atlas of Economic Complexity

With AGOA, the growth of textiles and garment had been a large success. The agreement and trade diplomacy associated with it, brought the American clothing giant PVH to Ethiopia, as well as others to the industrial park located in Hawassa that has been a hub of garment production since 2017. Ethiopia has seen rapid growth in garment exports to the U.S. even as its garment exports to the rest of the world stagnated. By 2019, this represented 25 different garment products. With the more recent introduction of new growth in electronics and machinery, the export basket of Ethiopia to the U.S. became much more diversified and complex than its overall export basket. This partially reflected in Figure 4.26 which shows the complexity of Ethiopia's exports to each destination country. Ethiopia's exports to the US are relatively more complex that Ethiopia's exports overall.

Figure 4.26: Complexity of Ethiopia's Exports by Destination



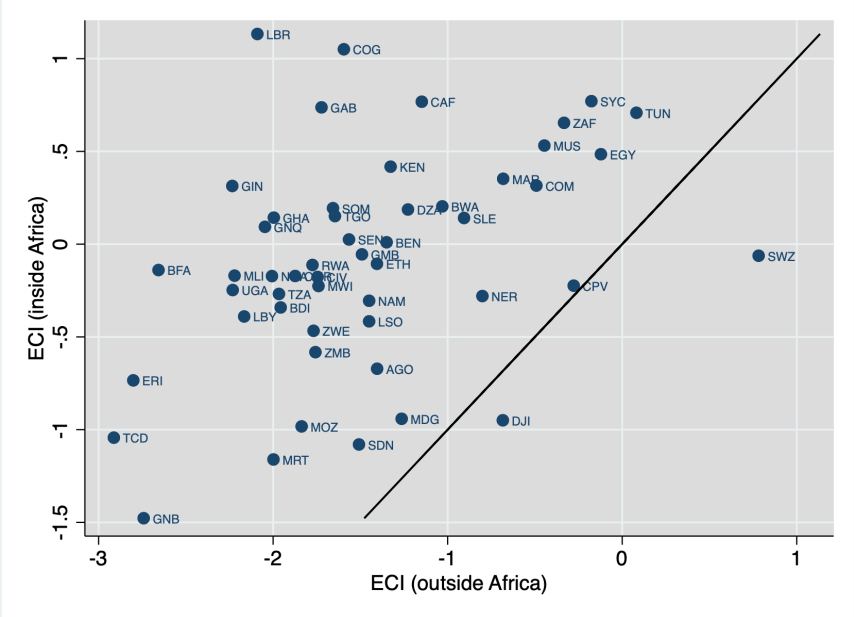
Source: UN Comtrade; Atlas of Economic Complexity

Thus, AGOA did more than simply allow Ethiopia to expand exports of traditional goods like coffee or primary products in minerals. Instead, it allowed Ethiopia to develop capabilities in manufacturing that could be the basis of further industrialization and diversification. The impacts of the loss of AGOA at the start of 2022 due to delisting are not yet clear. One immediate result of the change was the closure of many plants and the exit of PVH. But the full consequences of this action for Ethiopia are still yet to be seen. There is no doubt that it will undermine what was a bright spot in Ethiopia's diversification efforts.

AfCFTA and Regional Integration

Trade on the African continent represents another potential opportunity for Ethiopia to expand both existing and new exports. Ethiopia's exports that remain within the African continent is very small, but it could be important for diversification. This is because countries tend to export there most complex products to their least complex trading partners, especially nearby partners. For example, Ethiopia's exports to the rest of Africa are more diverse (96 products with a revealed comparative advantage) and more complex than its exports to the rest of the world (80 products). We can see this in the Figure 4.27, where the x-axis shows the ECI (i.e., average PCI) of each African country's exports outside of Africa and the y-axis plots the same but for exports to the African market. The graph also includes a 45-degree line to capture the pattern that nearly every African country has a more complex export basket to the African market than to the rest of the world, often much more complex. Thus, development of trade with African trading partners may be a good way of expanding the exports of more complex products or those that require longer jumps, even if the overall market for products in Africa is smaller is smaller than that of the rest of the world.

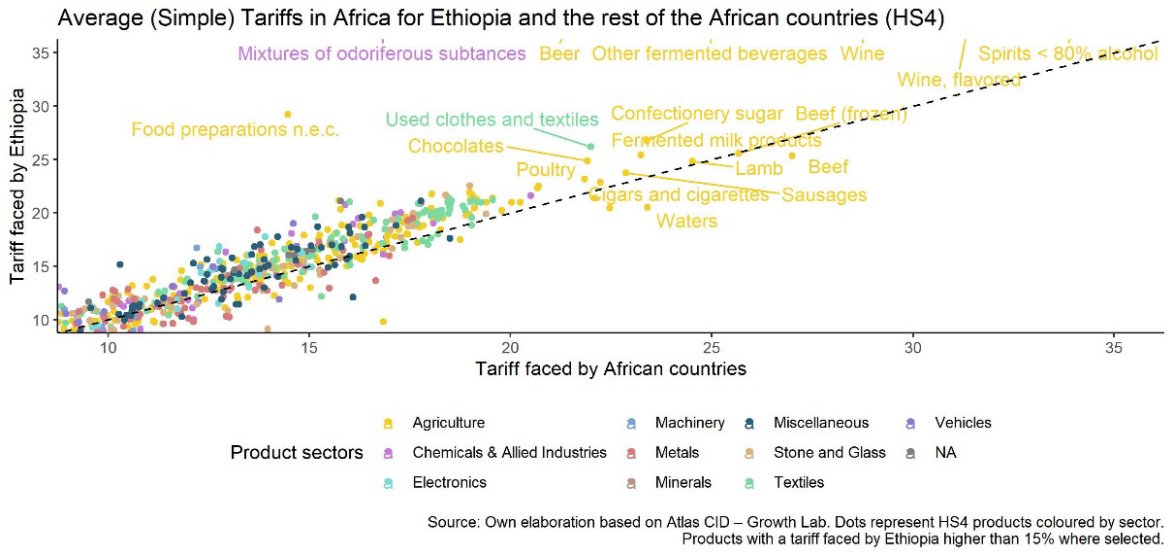
Figure 4.27. ECI Exports Inside and Outside of Africa by African Countries



Source: Own calculations using Atlas of Economic Complexity

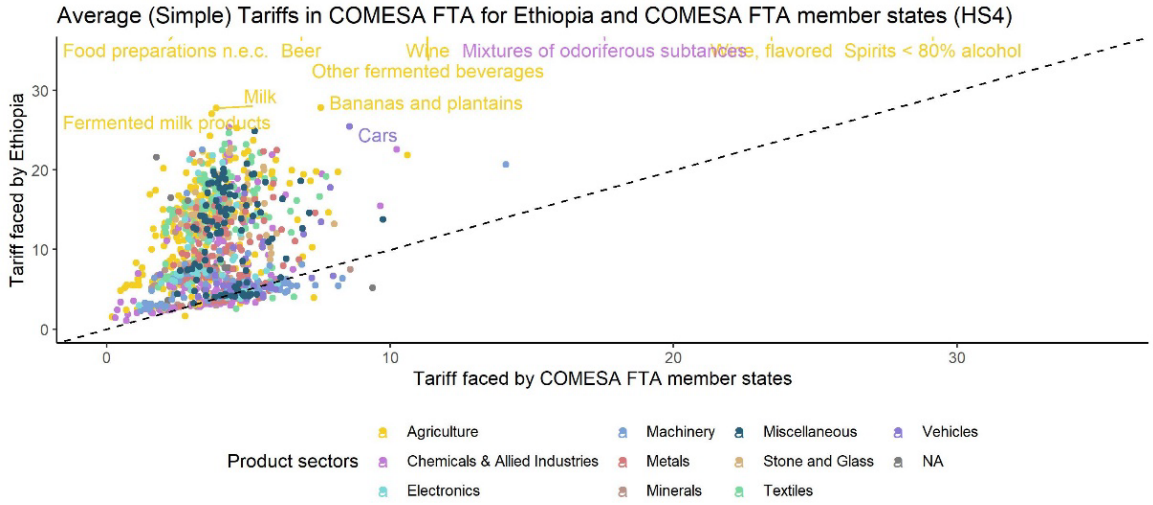
To increase trade with other African nations, Ethiopia could enter more existing regional trade agreements. As it stands, Ethiopian products face higher tariffs, on average, in other African nations than other countries on the continent face. Figure 4.28 shows the average tariff faced by Ethiopian firms across African countries by product versus the average tariff faced by all other African countries not including Ethiopia when exporting other African nations. Most products lie above the 45-degree line, and this is especially prevalent for products that face relatively higher levels of tariff protection (i.e., higher on the x-axis). One reason for this is that though Ethiopia is part of an existing regional economic bloc, namely the Common Market for Eastern and Southern Africa (COMESA), it is not part of the COMESA FTA. As a result, while the other members of COMESA face lower tariffs with one another, Ethiopia faces much higher ones (Figure 4.29).

Figure 4.28: Tariffs Faced by Ethiopia in Africa vs. Rest of Africa in Africa



Source: Own elaboration based on Atlas CID – Growth Lab. Dots represent HS4 products coloured by sector. Products with a tariff faced by Ethiopia higher than 15% where selected.

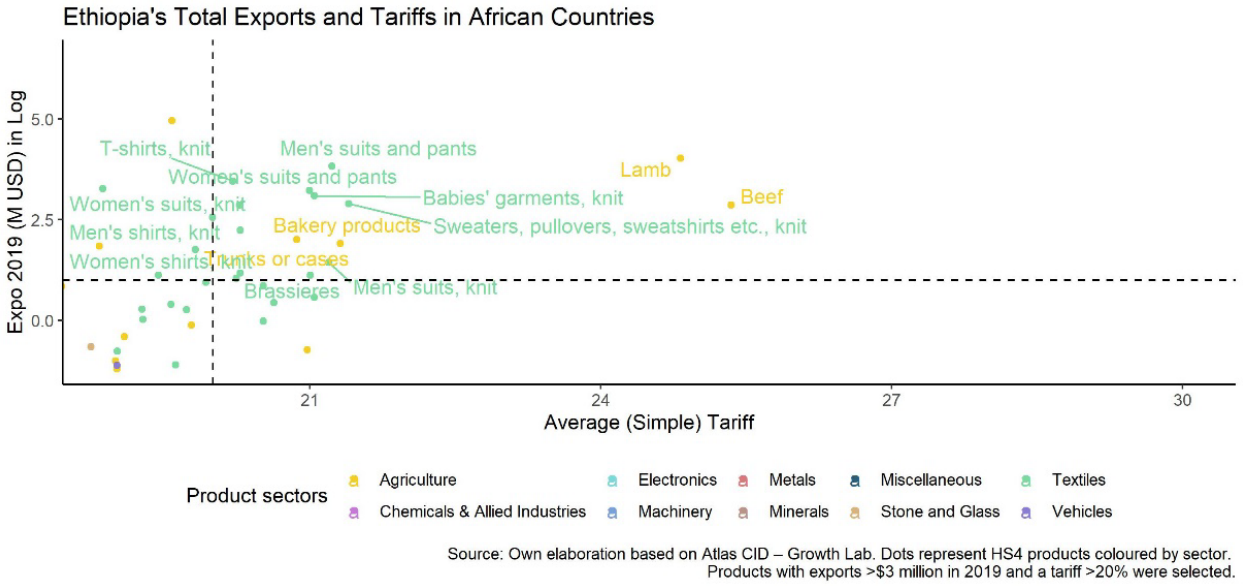
Figure 4.29: Tariffs Faced by Ethiopia in COMESA Countries vs. other COMESA Countries



Source: Own elaboration based on Atlas CID – Growth Lab. Dots represent HS4 products coloured by sector.

Thus, tariff reductions could be especially impactful for expanding exports in Ethiopia to other countries in Africa. Toward that end, Ethiopia's participation in the African Continental Free Trade Area (AfCFTA) could bring with it additional opportunities to expand exports as tariffs faced by Ethiopian products are reduced with the agreement. Likely more important, though more difficult to measure, are non-tariff barriers that are targeted to be reduced through AfCFTA. As an exercise to assess potential export opportunities with tariff reductions (an exercise that could be extended with non-tariff barriers), we can look at those products that face especially high tariffs and that would benefit most from reductions. We can look at opportunities at the intensive margin (i.e., products that Ethiopia already exports that could expand) by looking at those products that face high tariffs in Africa and which Ethiopia already exports elsewhere. Figure 4.30 does exactly this by showing products where Ethiopian firms face an average tariff of at least 20% across Africa and in which Ethiopia already exports more than USD 3 million globally. Many garment products as well as lamb and beef emerge as potential beneficiaries of tariff reductions for exports to the African market. In the case of beef, almost all of Ethiopia's exports are to the Gulf Countries though transport access to the African market should be easier.

Figure 4.30: Product Opportunities with AfCFTA along the Intensive Margin

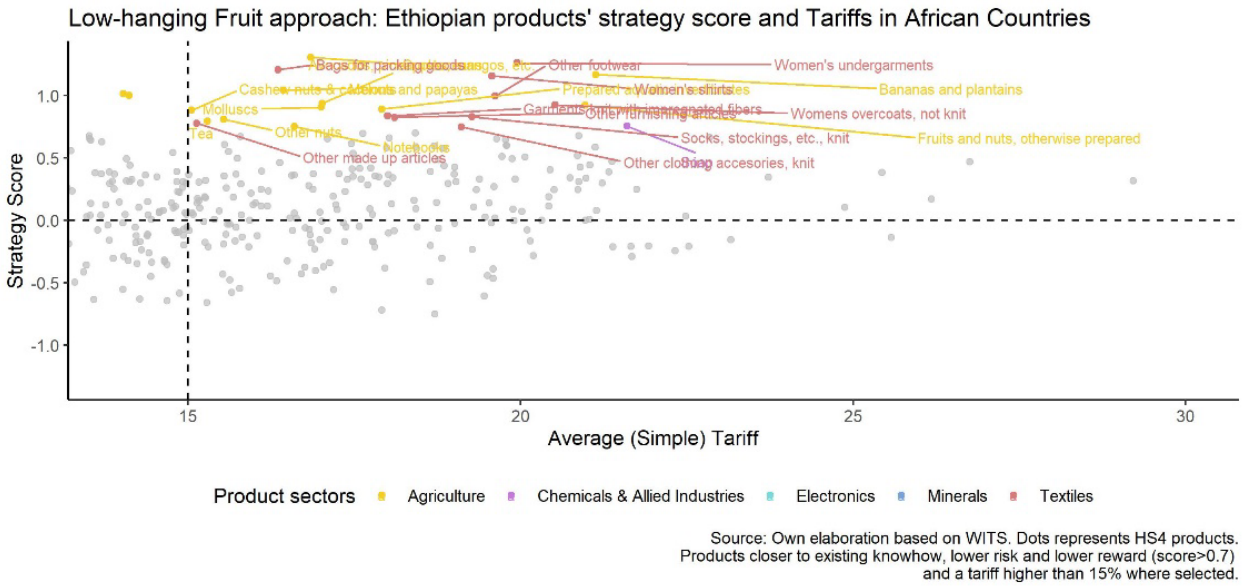


Source: Own elaboration based on Atlas CID – Growth Lab. Dots represent HS4 products coloured by sector. Products with exports >$3 million in 2019 and a tariff >20% were selected.

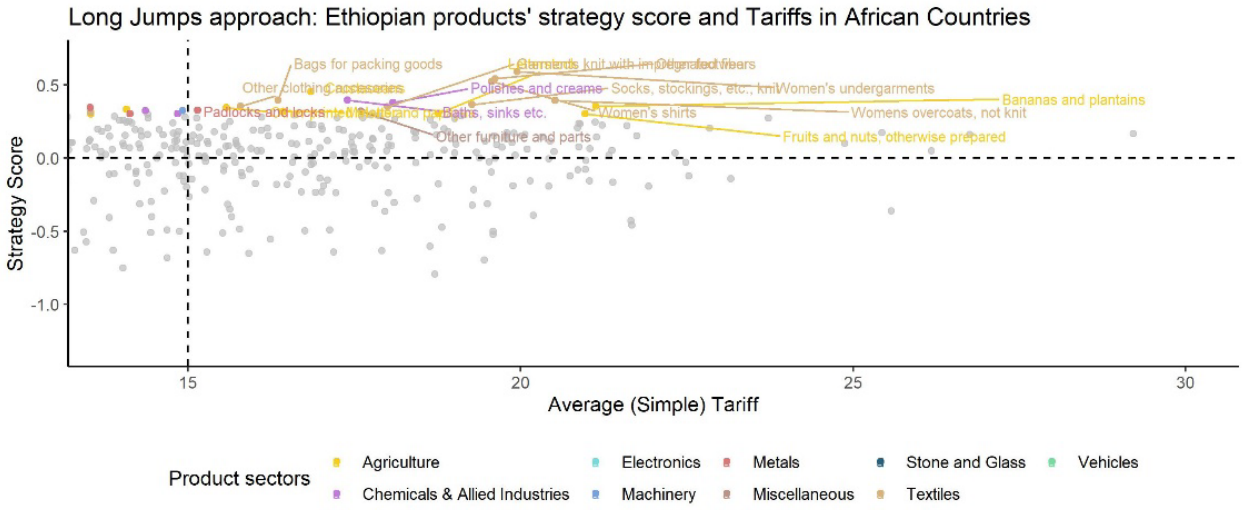
On the extensive margin (i.e., products that Ethiopia does not yet export significantly but could diversify into) we can similarly look at products that face a tariff of 20% or higher across Africa but this time use "low hanging fruit" and "long jumps" strategy scores on the y-axis (Figure 4.31). Both cases identify opportunities in garments and agricultural products, while the "long jumps" exercise also highlights products such as polishes and creams, baths and sinks, and furniture and parts. These are different products but in many of the sectors that emerge on the intensive margin above. This is because many African countries place high tariffs on textiles, garments, and agricultural products on each other. As details of the AfCFTA are being finalized, Ethiopia may

be set to benefit from improved market access in Africa, not only through tariff reductions but also through other changes that could be explored in a similar way to this analysis.

Figure 4.31: Product Opportunities with AfCFTA at the Extensive Margin



Source: Own elaboration based on WITS. Dots represents HS4 products. Products closer to existing knowhow, lower risk and lower reward (score>0.7) and a tariff higher than 15% where selected.



Source: Own elaboration based on WITS. Dots represents HS4 products. Products that are further from existing knowhow, higher risk and a higher reward (score>0.3) and face a tariff higher than 15% where selected

Sub-National Diversification

The earlier sections of this chapter looked at the diversification challenge and opportunity largely using the tools of complexity at a national level for Ethiopia. There are a lot of benefits to this approach. It allows us to compare Ethiopia to the growth experiences of other countries and also look beyond what Ethiopia currently produces to what might be possible in the future. This is

important because for export capacity to grow in the long-term, change must occur on the extensive margin of producing new things and not only expanding volumes of what Ethiopia already exports.

However, to operationalize the national level analysis, we ultimately need to complement it with subnational information. After all, when a global company considers investing in Ethiopia, it is not investing in the country as a whole, it is instead looking for a specific place within Ethiopia where it can have confidence that it can operate its business successfully. In their site selection process, company strategists will be considering not only national factors but also a wide range of local factors. For example, how well does the local infrastructure meet the company's needs for inputs and how connected is the location to key markets? Is the local labor force a good fit for the type of employees the business will need? Is there a physical location — whether a plot of land for greenfield investment or office space — that is suitable and available? How much does the land access cost and how long will it take to secure it? If the company invests in this location, will the operation be subject to localized risks of flooding or other natural disasters?

These and many other site-specific questions are local in nature, not national. The ability to answer these questions becomes a bit easier if there are already similar companies operating in a general location. This gives the new entrant information and confidence that it can succeed. But the questions are harder to answer if the company would be the first of its type to operate out of the place. If the company represents an industry that is new to Ethiopia, then by definition it has no examples to look to. This makes it especially important that national and local investment promotion entities are able to coordinate with such companies and help them find the specific places in Ethiopia where they could thrive.

Within Ethiopia there is a lot of heterogeneity between places. Some areas are more industrialized, others more rural. Some places rely on specific cash crops like coffee, while others are closer to industrial parks making more complex products for exports. Over the long-term and more recently, different regions have diversified into different tradeable industries. Understanding differences is especially important in a place like Ethiopia that is made up of many different regions, languages, and ethnic groups. Ideally national diversification strategies facilitate local diversification opportunities that look different in different places. Thankfully, many of the tools of economic complexity can be extended (with some modifications) to understand productive capabilities of regions within Ethiopia. The exercise of looking at complexity and diversification at a subnational level can help us to understand differences between different places — in particular, it can help us to infer different capability sets and how they map to different diversification opportunities. It can therefore help inform place-based diversification strategies within a country when operationalizing a national level diversification strategy.

On the international level, we use international trade data to measure the complexity of countries and products based on what they export. Similarly, at the national level we can understand the complexity of different parts of Ethiopia based on what they produce. Due to data limitations, we

focus on manufacturing. Even though this is a small share of national production, manufacturing capabilities might also be informative of broader productive capabilities. We used data from the 2017 Large and Medium Manufacturing Survey (LMMS) provided by the Central Statistical Agency of Ethiopia for this purpose. Despite its name, the dataset is a census of all large and medium scale manufacturing firms allowing us to analyze the manufacturing sector as a whole. Large and medium firms are defined as those that employ more than 10 employees and use power-driven machinery. The 2017 LMMS data consisted of approximately 2,600 observations at the establishment level, which is defined as the whole of the premises under the same ownership or management at a particular address. Differences in data collection methodology across the survey years prevented us from constructing a panel dataset, but we performed our analysis on multiple years of the survey to ensure broad patterns hold true across the years. In the absence of panel data, we chose to focus on the most recent year of the LMMS data provided to us, while using satellite imagery data to explore how locations may have changed since 2017.

Our subnational complexity analysis used the regional variation of the nearly 70 administrative zones in Ethiopia. The LMMS data allows us to explore patterns across 90 industries, which are classified according to the International Standard Industry Classification (ISIC) at the 4-digit level. We analyzed the presence of various industries across zones according to the total production of firms — although we also explore the number of firms, number of employees, value addition, and a range of other variables captured by LMMS. Diversity in this analysis therefore reflects the number of industries in which a zone has a revealed comparative advantage (RCA) of one or greater. Similarly, ubiquity here is the number of zones that have an RCA of one or greater for a given industry. If many zones have an RCA greater than one, then that industry is highly ubiquitous.

Just as we can create a product space that visualizes the associations between products, we can also create a location space by measuring the proximity between pairs of locations based on the similarity of their industry structure. In our exercise for Ethiopia, we created a Zone Space, shown in Figure 4.32. The two-dimensional mapping of this network connects every zone to its two most similar zones in terms of industry composition. We then ran a community clustering algorithm to identify groups or clusters within this network that are most similar to each other. The colors in the figure represent what the community clustering algorithm identified as zones that are similar. This gives us a visual way to begin to see zone similarity in productive capabilities for manufacturing within Ethiopia. We exclude from this analysis any zones with low data coverage.

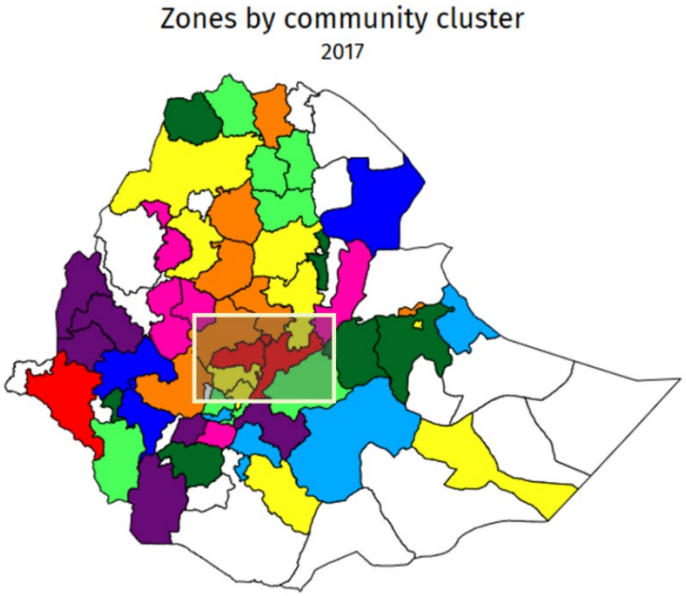
The Zone Space reveals many interesting patterns. One section of the Zone Space that we identify to be of particular importance is a cluster of zones identified in red in Figure 4.32. This red group of zones include many of the zones in and around Addis Ababa. Furthermore, in the Zone Space, these zones are somewhat separated from the other zones, meaning that they are quite different from the other zones in Ethiopia. We projected the clustered communities onto a map of Ethiopia using the same colors to see if the network of proximities had geographical patterns embedded in

them (Figure 4.33). In many cases, the clusters do appear geographically connected as well as similar in their industry composition. This is the case for most of the red cluster as shown.

Figure 4.32: Zone Space of Ethiopia using 2017 LMMS Data

Source: Own calculations using LMMS

Figure 4.33: Map of Ethiopia colored by Community Cluster

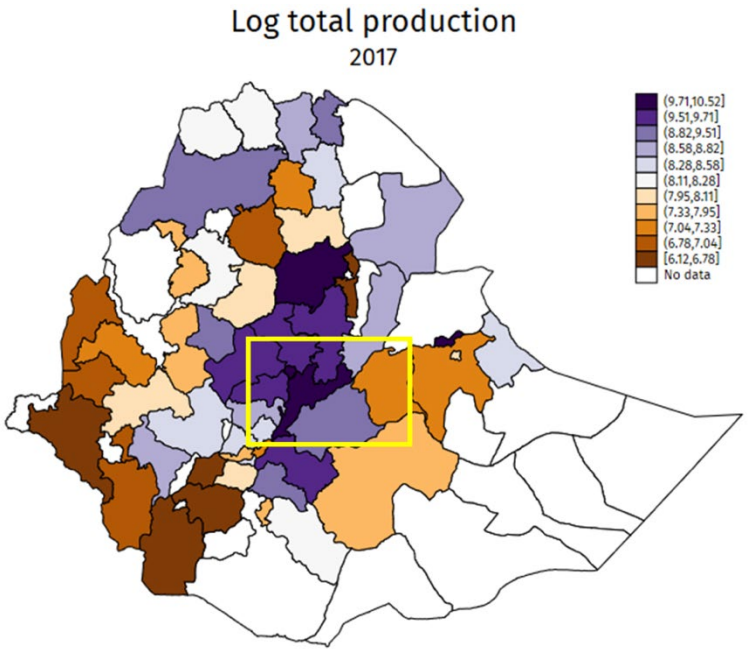


Source: Own calculations using LMMS

The zones in the red cluster are centered in and around the capital Addis Ababa. When we calculate the sum of total production for each zone, we can also see that this group of zones are among the top performers in production value (Figure 4.34). Therefore, we may think of these zones as representing the industrial core of Ethiopia. Sure enough, when we look at the diversity of manufacturing industries in each zone, we also see that those zones in the red cluster are much more diverse than other parts of the country (Figure 4.35). When we measure the uniqueness of the industries in these zones, we see that the average ubiquity is also low. This means that they are not only supporting more manufacturing industries than other zones but that these industries are only present in the industrial core

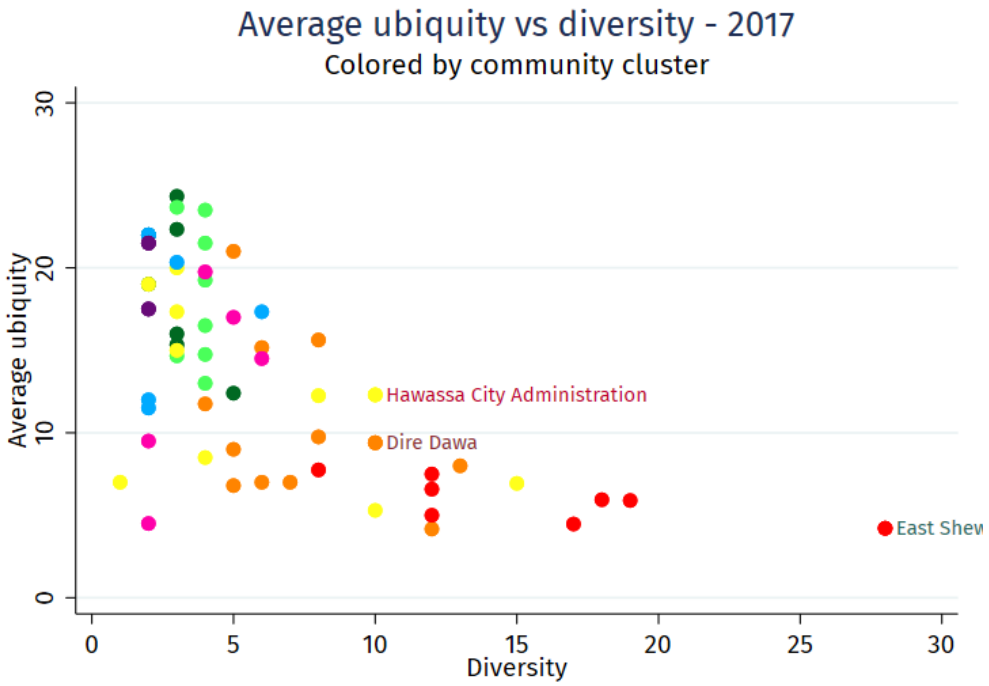
We can also compute an internal measure of economic complexity (ECI). This measure of internal ECI is like the international one. It captures a measure of the knowhow and capabilities of each of the zones relative to one another. However, it is also different in one important respect. The "internal ECI" is limited to what Ethiopia already produces as the universe of industries and does not include the full set of goods that are possible to produce globally but not produced in Ethiopia. Therefore, the numerical value of ECI should not be compared with international ECI based on trade data. Doing so would overstate the complexity of parts of Ethiopia. It is merely a measure that allows us to compare the economic complexity of zones within Ethiopia. Based on this measure, we see that zones in this "industrial core" come up as the most complex zones in Ethiopia (Figure 4.36). Thus, this core is not only the center of production and industry diversity, but also the center of productive capabilities — at least in manufacturing.

Figure 4.34: Sum of Total Production (log) by Zone, 2017 LMMS



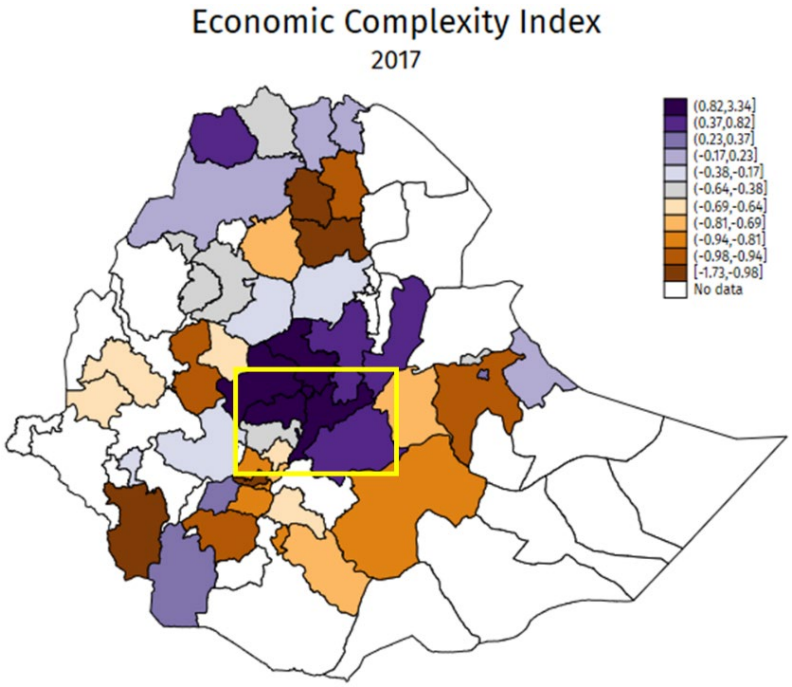
Source: Own calculations using LMMS

Figure 4.35: Average Ubiquity versus Diversity, Colored by the Community Cluster



Source: Own calculations using LMMS

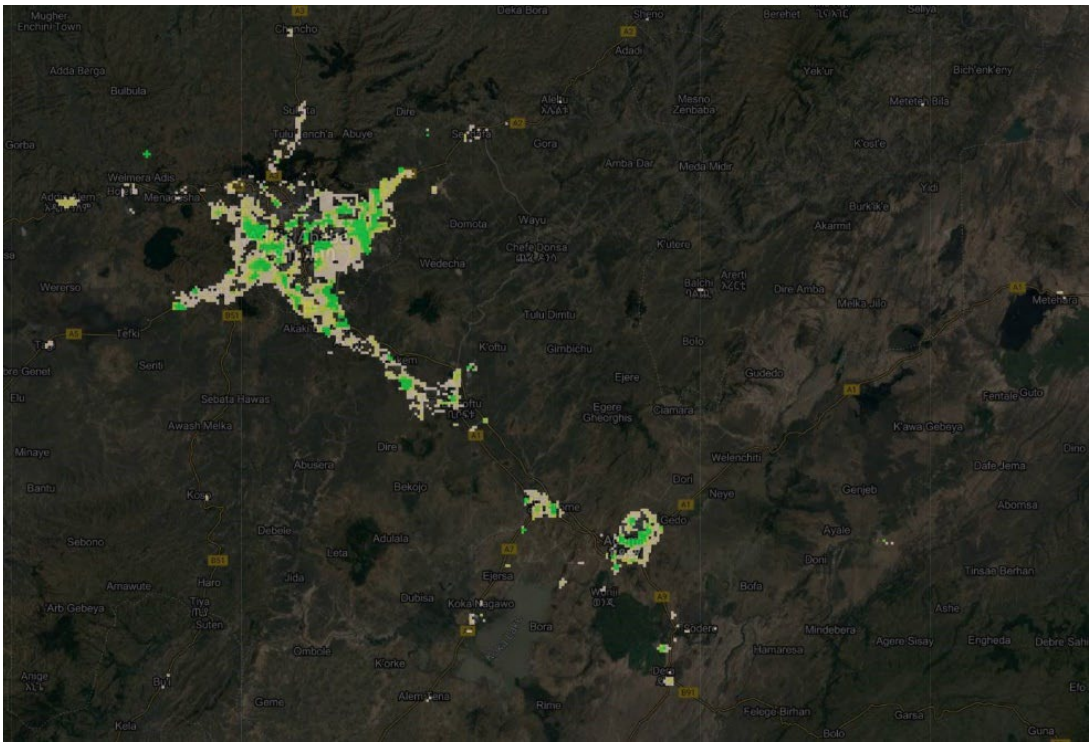
Figure 4.36: Internal Economic Complexity Index by Zone, 2017 LMMS



Source: Own calculations using LMMS

This region at the core of Ethiopia's manufacturing capabilities has been an area of high growth over time. Figure 4.37 shows a map of the region in and around Addis Ababa that captures the change in nightlight activity between 2003 and 2020. Lights at night, as seen from space, are a useful signal of growth in economic development. Green areas represent more growth in nightlight activity over the period. Two patterns are important to note. First, this region has seen especially large increases in nightlight activities (the green color) between 2003 and 2020. This is a sign of high growth in economic and human activity. Second, nightlights tend to spread out in all directions from Addis, but especially to the southeast, in what looks like a "tail". In general, this pattern of nightlights and change in nightlights tend to follow the main highways that flow out of Addis and which connect the city to other surrounding towns and cities. We will come back to this specific area later in this section when looking at the zone of East Shewa.

Figure 4.37: Change in Nightlights Activity around the Capital City Addis Ababa



Source: Calculations using PlanetScope

On an international level, we know that knowhow and productive capabilities tend to agglomerate. However, the power of natural forces of agglomeration creates a tradeoff in development. It means that productive companies and in-demand workers naturally flock to areas of successful agglomeration. These places become more productive as a result and wellbeing in those places tends to rise. This is generally good for those areas but, left unchecked, this can introduce challenges of spatial inclusion in countries. The tendency toward agglomeration means that most production and opportunity centers are only in one or a few

places within a country, while other places and populations may be left behind. This creates inequality between regions of a country, which is a growing problem in many countries where there are enormous divides between "superstar cities" and the rest of the country.

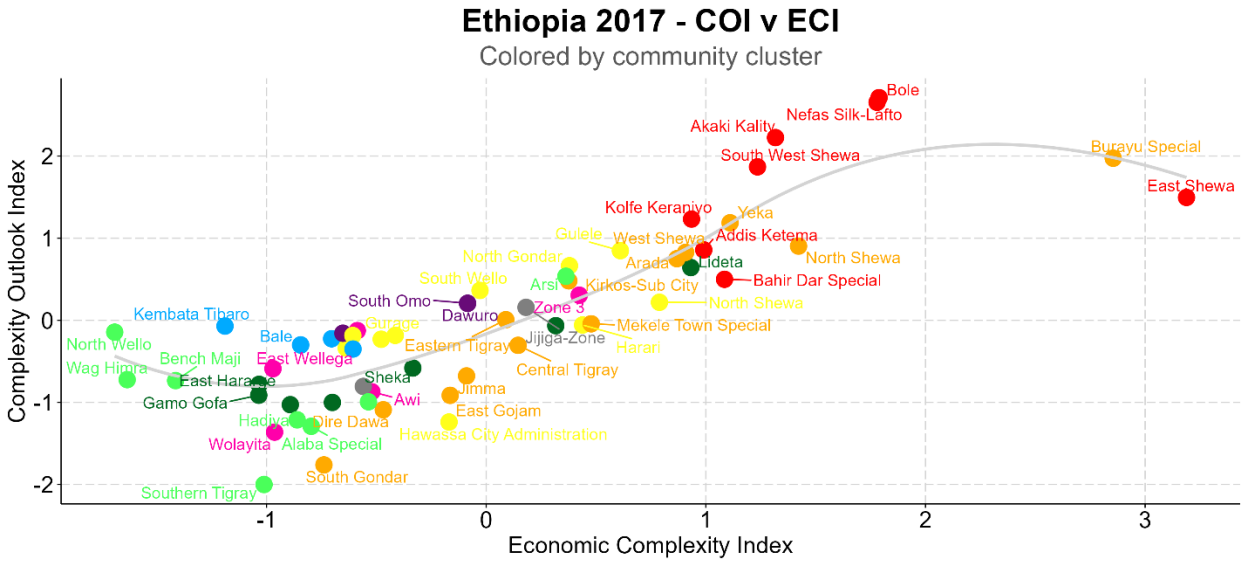
In Ethiopia, a country of over 100 million people, and where this industrial core represents a relatively small share of the total population, there is a tradeoff to recognize between continuing to add new production where production already exists, versus trying to make the growth more even across regions. We can see this tension between targeting investment in the productive core versus the rest of the country play out in the industrial park (IP) strategy of Ethiopia. The IP strategy of the government under the GTP era was designed to drive manufacturing investment into new places where it has not previously aggregated. But one challenge here is that Ethiopia's productive capabilities are scarce and concentrated, so if we want to produce something in a new place, we must somehow transfer all the complementary productive capabilities needed to this new location. Another challenge was the actual design and development of more than 20 industrial parks across the country, many of which remain incomplete or lack access to critical infrastructure like power, water, sewerage, and/or telecommunications.

For Ethiopia, there are good reasons to focus diversification strategy heavily on the industrial core. Recall that export diversification is critical for Ethiopia to sustain rapid economic growth. The national economy simply must produce more goods and services that the rest of the world is willing to buy if growth and poverty reduction are to continue at rates like what has been achieved over the last two decades. Yet, given that Ethiopia is a very low complexity economy by international standards, it will be much easier to make jumps to new products both near and far if those new products are closer to where Ethiopia's existing knowhow is already agglomerated. While there is always a desire for diversification to occur everywhere in a country such that there is equal access to new jobs and higher wages, Ethiopia's growth syndrome necessitates a focus on diversifying exports where possible. Exports must grow rapidly somewhere in the country to generate foreign exchange for the national economy. Accomplishing this would indirectly allow jobs and wages to grow more freely everywhere in the country. This motivation does not undermine multi-pronged strategies to enable regional development across Ethiopia but does emphasize that targeted geographical focus in relation to export diversification is important for achieving overall growth.

One way to think more practically about this tradeoff is to think what the role of specific places might be in national diversification strategy. We would argue that to accomplish these goals we should think about a strategy that prioritizes new products and longer jumps near the "industrial core", while simultaneously working to enable existing production to diffuse elsewhere in the country. In doing so, it is also critical to use information about the different comparative advantages of different places across the country. One input to that is to evaluate productive capabilities of various parts of the country. Figure 4.38 shows the zones in Ethiopia by their internally measured economic complexity (ECI) and the likewise internally measured complexity opportunity index (COI). Areas with higher ECI and higher COI are more likely to see growth and

be centers of diversification. The areas that are low in ECI and COI have more limited productive capabilities — at least in manufacturing — and are far away in the knowhow space even from the few things that Ethiopia knows how to produce currently. The fact that the relationship between the two variables shown in this graph is positive (the curve of best fit is upward sloping) may reflect that Ethiopia overall is far from the productive frontier. By contrast, in very diversified countries, the most complex parts of the country will tend to have a lower COI because they have already captured the most valuable products and industries.

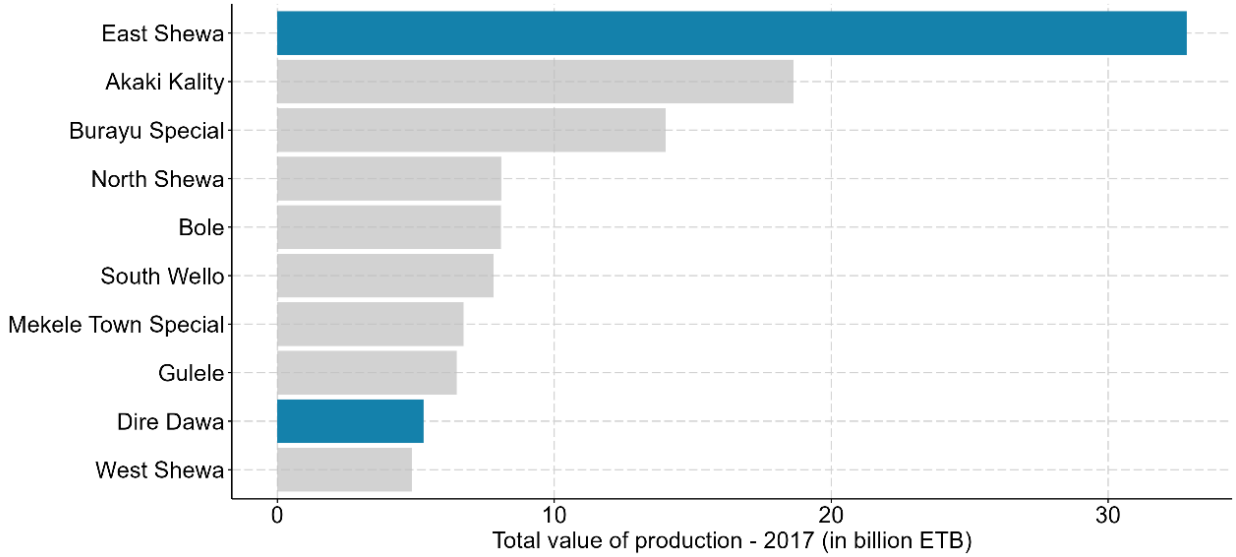
Figure 4.38: ECI vs. COI for Ethiopia Zones



Source: Growth Lab calculations using LMMS

Policymakers in Ethiopia could develop regionally targeted export diversification strategies for many zones by combining information revealed within their productive structures and other factors that determine places' comparative advantages and disadvantages. However, doing this in a lot of places must first start with developing strategies for one or a few places. We explore what this kind of strategic thinking could involve by looking at two zones that appear interesting based on the information shown so far. In the following pages, we focus on the two zones of East Shewa and Dire Dawa. Both zones are among the top manufacturing producers in the country (Figure 4.39). However, they are also very different from one another, which means strategic advantages and diversification opportunities will differ. East Shewa sits within the industrial core described above. Relative to the rest of the country, it represents the frontier of economic complexity. Dire Dawa is not in the industrial core nor is it among the most complex zones within the country. But it is noteworthy geographically for its location along a major railway and being the closest population center in Ethiopia to the port of Djibouti. How should policymakers think differently about diversification in these two places? How should local diversification strategies for these places connect with national export diversification strategy?

Figure 4.39: Zones in Ethiopia by Total Manufacturing Production, 2017 LMMS

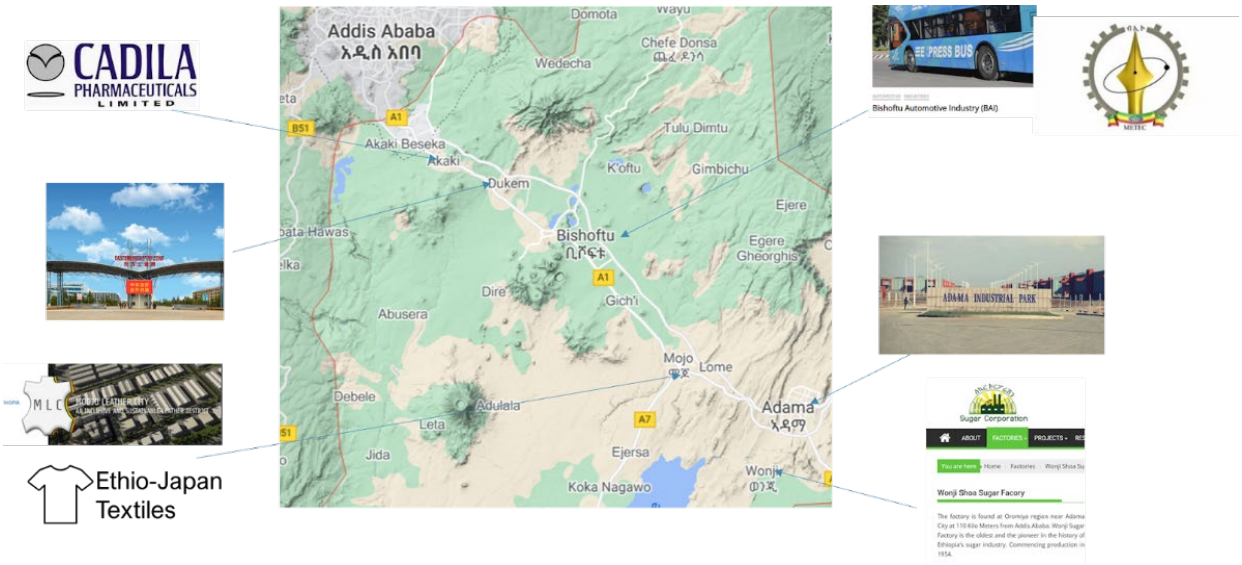


Source: Own calculations using LMMS

Zone Focus: East Shewa

East Shewa is located to the southeast of Addis Ababa along the A1 highway corridor to Adama (see Figure 4.40). Outside of the capital itself, it is one of the densest hubs of economic activity. There are several major towns, industrial parks, and other production centers within the zone. East Shewa is home pharmaceutical production operations (e.g., Cadila Pharmaceuticals Limited), industrial parks (e.g., Eastern China Zone, Adama Industrial Zone, Mojo Leather City), some large SOEs (e.g., Ethio-Engineering Group), and one of three original sugar manufacturing facilities that was established many decades ago. In fact, the sugar East Shewa is home to fist sugar factory in the country, Wonji Shoa, which was established by the Dutch-owned Handles Vereening Amsterdam Company in 1954 and later owned and operated by the Ethiopian Sugar Company (ESC), a public enterprise. The city of Mojo has a rich history of private as well as public production. In 2005, the assembly plant for Holland Car was established here as a joint venture private company by two partners, Eng. Tadesse Tessema and the Dutch company Trento Engineering BV. Mojo also hosts multiple leather processing firms and food processing firms established in the early 2000s. The zone is quite diverse by Ethiopian standards, as discussed above, given the presence of metals, leather, automotives, and food processing.

Figure 4.40: Map of Select Industries Around East Shewa

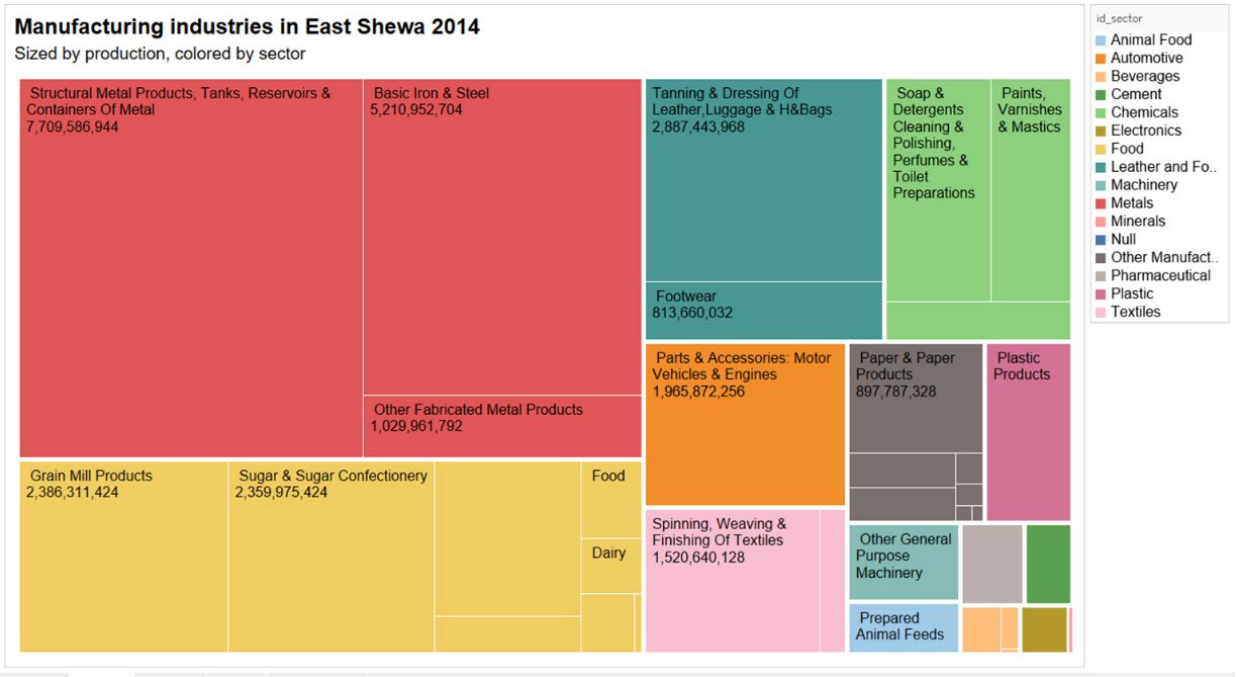


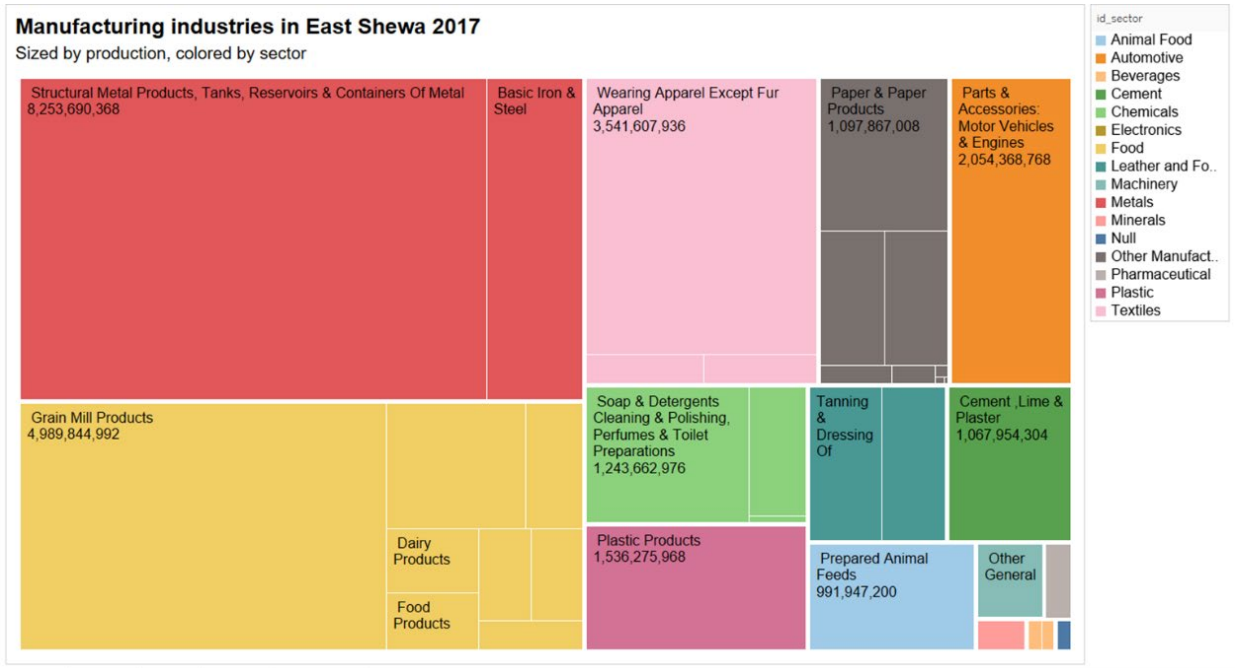
Source: Own construction

According to the 2017 LMMS data, the median age of manufacturing firms in East Shewa was around 15 years at the time, meaning that many firms present in the zone started operations after 2002 when growth in Ethiopia took off. Figure 4.41 shows the manufacturing composition of East Shewa (by production according to LMMS) for two years with higher quality data, 2014 and 2017. Despite this reflecting only a short time period between the two years, there was a significant amount of change in the composition of manufacturing production. As can be seen in the tree maps in the zone saw growth in the apparel sector (light pink rectangle). This coincides with a period where the apparel sector experienced substantial growth overall in Ethiopia.

Figure 4.42 shows the industries that were expanding in the manufacturing production composition of East Shewa — and hence these can be considered drivers of manufacturing growth in the zone. Alongside, wearing apparel, which saw the largest growth in production by far, grain milling, structural metal products, cement/lime/plaster, plastics, animal feeds, and a few other manufactured goods all grew. Figure 4.43 shows the number of firms in East Shewa in LMMS over the two years, which can help to provide a signal of if growing production has come through the entry of new firms or the growth of existing firms in the zone. We can see that there has been a growth in the number of firms in the survey in many industries, notably in metals. A few industries have seen a reduction in the number of firms, like cement. We also note that in 2014 we have 2 establishments engaged in "wearing apparel, except fur apparel" which increased to 10 establishments in 2017.

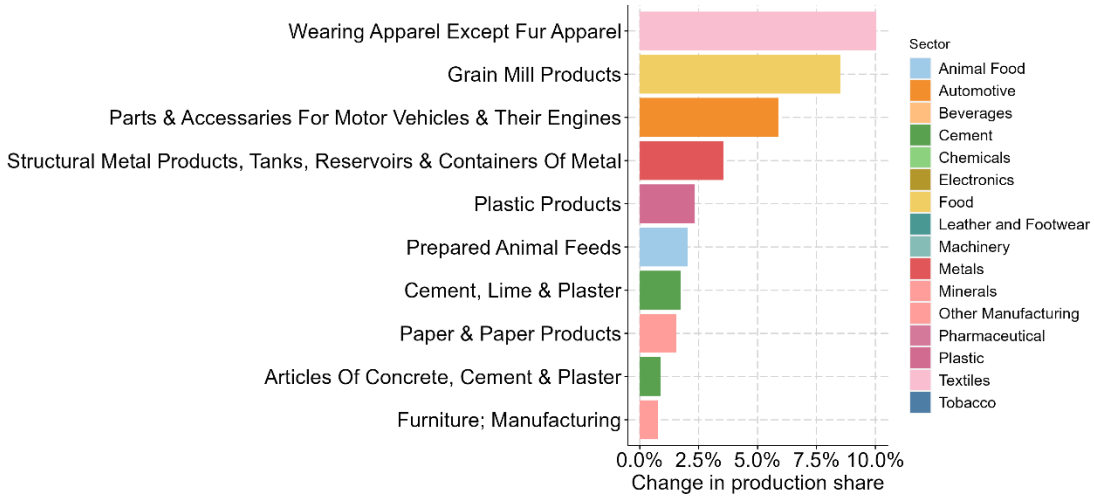
Figure 4.41: Industry Composition by Production for East Shewa in 2014 (top) & 2017 (bottom)





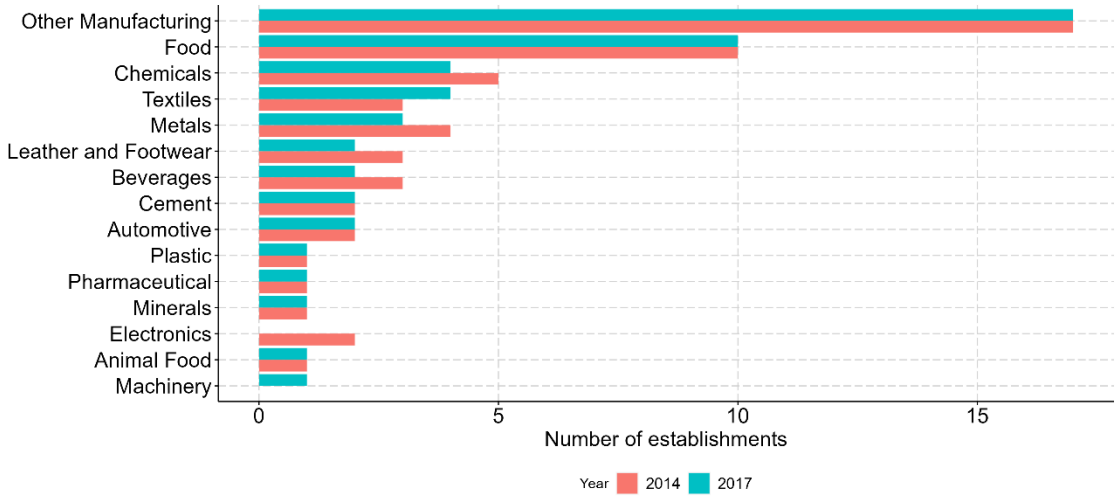
Source: LMMS

Figure 4.42: Change in Production Share in East Shewa from 2014 to 2017



Source: LMMS

Figure 4.43: Number of Firms in East Shewa by Broad Sector



Source: LMMS

It is important to contextualize the complexity growth of East Shewa with respect to the export trends on a national level. As noted earlier, overall export growth was noteworthy in growth in cut flowers, textiles, chat, and pulses. Electricity, electronics, chemical inputs, and construction inputs have all been added to the export basket over time. East Shewa seems to be growing along with national trends in garments and construction materials. It is important to note East Shewa also has internally complex industries such as those under the metals sector and automotive sector that are not found in exports at the national level. This suggests that some of the higher-complexity manufacturing taking place in East Shewa is targeted for the domestic market. Overall, this suggests again that East Shewa is a generally good place within Ethiopia for strategizing export

development on the extensive margin in new industries, given the presence of more productive capabilities in the zone than in many other parts of the country.

When identifying promising new export opportunities for East Shewa, we can bring together information based on economic complexity about what industries are relatively nearby to the productive capabilities of the zone with more qualitative observations about the unique advantages offered by East Shewa. Based on national level analysis and what East Shewa already produces, it would likely be a prime candidate for expanding garment, apparel, and footwear exports, but specifically to new products in these sectors that Ethiopia does not already produce. In addition, it would be a good potential candidate to locate some of the longer jumps like medicaments, auto parts, or automobile assembly.

Due to the proximity to the dense urban population of Addis Ababa, firms located in the zone can also more easily cater to the high domestic demand in the area and likely have better access to harder-to-find skilled labor than much of the country. The zone's proximity to the Addis Ababa airport provides a key transportation advantage to the manufacturing firms located in the zone, but only if exports can travel by air. This is decidedly not the case for a product like cement for example, but it may be for certain products produced in East Shewa. For example, the analysis of air transport intensity earlier in this chapter showed that some garment and textile products are amenable to air transport. When we look at which products appear both as "low-hanging fruit" diversification opportunities at the national level while also having high air intensity we see products in textiles and agriculture. When we look at products that may be strategic longer jumps for the country, we find products related to garments, agriculture, and certain types of machinery. This suggests that East Shewa could be a highly impactful location to expand garment and food exports as well as to develop more machinery exports.

East Shewa may play an important role in hosting production for the African market by air as well. Recalling that our analysis of diversification opportunities that are likely to benefit from AfCFTA, food manufacturing and garments are important opportunities. Other interesting examples of opportunities may include ceramic household articles, carpets, and plastic floor coverings. Current exports from Ethiopia of these last few products are fairly limited in the markets that they reach, with a reliance on Egypt. Meanwhile, the African market is much more spread out across countries and Ethiopia may have a strategic advantage to serve these markets out of East Shewa.

Dire Dawa

Dire Dawa can be better understood as an island of economic activity, bordered by the railway line. Historically, Dire Dawa is of keen interest. It has been known for its cosmopolitan history and characteristic of a melting pot. It used to feature a large expat community and multilingualism. However, the transformation of Dire Dawa from a small village to trading hub almost did not happen. The railway line, which created a new focal point for the development of urban life, was initially planned to go through the more hilly and economically significant City of Harar. This

original location presented too many engineering and financial difficulties in laying out the tracks which were then diverted to the plains below. This new route passed through a small village which transformed into the hub we now know as Dire Dawa.

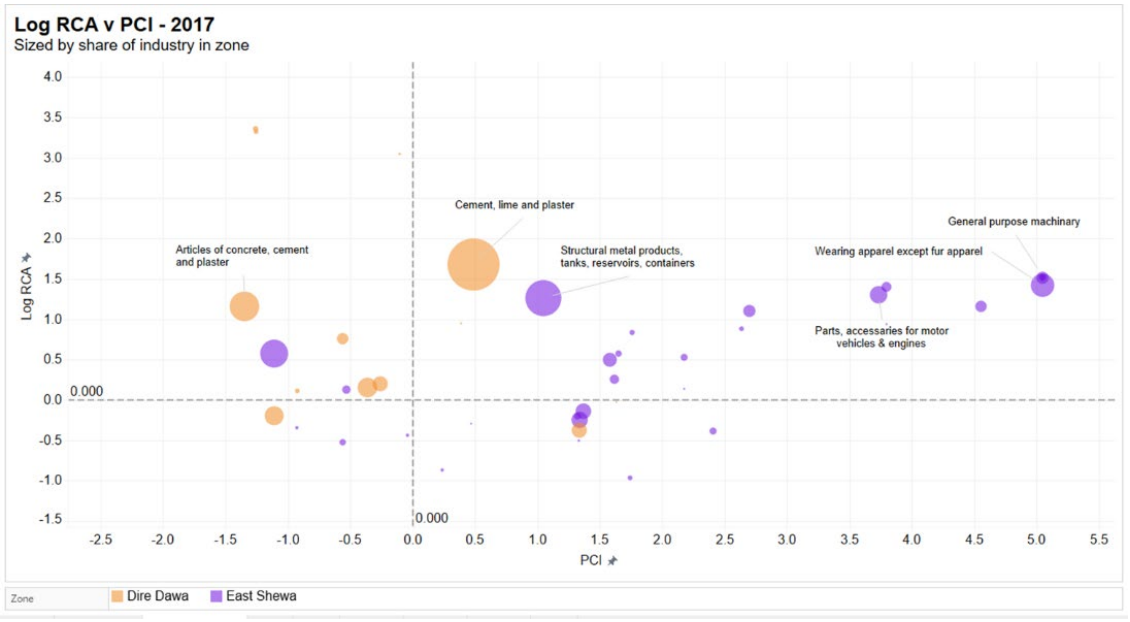
Dire Dawa's manufacturing composition is much less diverse as compared to East Shewa and has been dominated by cement manufacturing Figure 4.44). It has also seen growth, although most of it is concentrated in the construction-related manufacturing sectors, which outpace growth of other manufacturing sectors. From 2014 to 2017, cement's share grew by 15 percentage points as a share of the zone's manufacturing production, while the individual shares of other industries in the zone did not move a lot. A closer look at the employment in Dire Dawa reveals that non-tradable sectors such as retail and construction grew by more than 10% year-on-year (based on UEUS).

Figure 4.44: Industry Composition by Production for Dire Dawa in 2014 (top) & 2017 (bottom)

Source: LMMS

When we contextualize the growth of industries in Dire Dawa with respect to the export trends on a national level, we notice that the zone did not grow along the same sectors as the growth on the national level. Products such as cut flowers, textiles, chat, and pulses that grew in terms of exports nationally did not grow in Dire Dawa. In fact, Dire Dawa seems to have lost its textiles and garments industries in the same time frame. Electricity, electronics, chemical inputs that appeared as new products are not reflected in Dire Dawa's manufacturing. The only sector that can be matched with the national story construction inputs as seen by the growth in the size of the green-colored box in Figure 4.44. Figure 4.45 shows the stark difference between the industrial structures of East Shewa and Dire Dawa. The x-axis measures each industry's PCI score (measured internally against other industries in Ethiopia) and the y-axis measures the RCA of the industry for a zone. Orange is Dire Dawa and purple is East Shewa. From this figure, it is clear that East Shewa has a presence in more products and in more products that are measured as more complex. Dire Dawa's production is more concentrated in a few industries, especially related to construction.

Figure 4.45: RCA vs. PCI by Product for East Shewa and Dire Dawa



Source: Own construction using LMMS

What these comparisons point to is that the role of East Shewa and Dire Dawa in Ethiopia's growth going forward will likely need to be different. As a complex area in Ethiopia's core area, East Shewa may be a good place for targeting the attraction of new industries led by FDI, both in terms of the adjacent possible and strategic bets. There is already a base of existing knowhow, infrastructure, firms, people, and there are also connections to Addis Ababa. The connectivity to Addis Ababa is also important because of the access it gives you to transport through Ethiopian Airlines. As mentioned earlier in this chapter, much of Ethiopia's exports to markets like the U.S.

and E.U. travel by air. Thinking through these advantages that East Shewa has can help it to expand to certain industries and products such as textiles and agriculture.

In contrast, Dire Dawa's advantage is its proximity to the port of Djibouti and its status as a more autonomous city-region within Ethiopia. Products and industries that are less reliant on existing knowhow being present and cannot be sent via air, might be better places near Dire Dawa. These might be products in metals, given the presence of metal manufacturing in the zone, as opposed to other products in textiles and agriculture that are less sensitive to distance but do not appear in this zone. From a more strategic perspective, Dire Dawa also has an important role to play in being the gateway for Ethiopian goods to reach the port of Djibouti. Rather than being a manufacturing hub, it could be a place that better specializes in logistics and export processing. This might mean bringing in knowhow for logistics and thinking about talent and man-power strategies that allows a sector like logistics to thrive and grow.

Agents of Change: FDI, Foreign Workers, and SOEs

Understanding what products and where production might plausibly happen are two important parts of Ethiopia's diversification strategy. In addition, we generally also like to think about "agents of change". In other words, who are potential entities that can spur diversification? Identifying these agents of change are important because they can help direct where policy and support might need to go. Here we discuss three sets of agents of change while the next section talks about policy and the role of government agencies like the Ethiopian Investment Commission (EIC) and Ministry of Trade and Regional Integration (MOTRI). These agents of change are foreign firms and FDI, foreign workers, and state-owned enterprises.

Foreign Firms and FDI

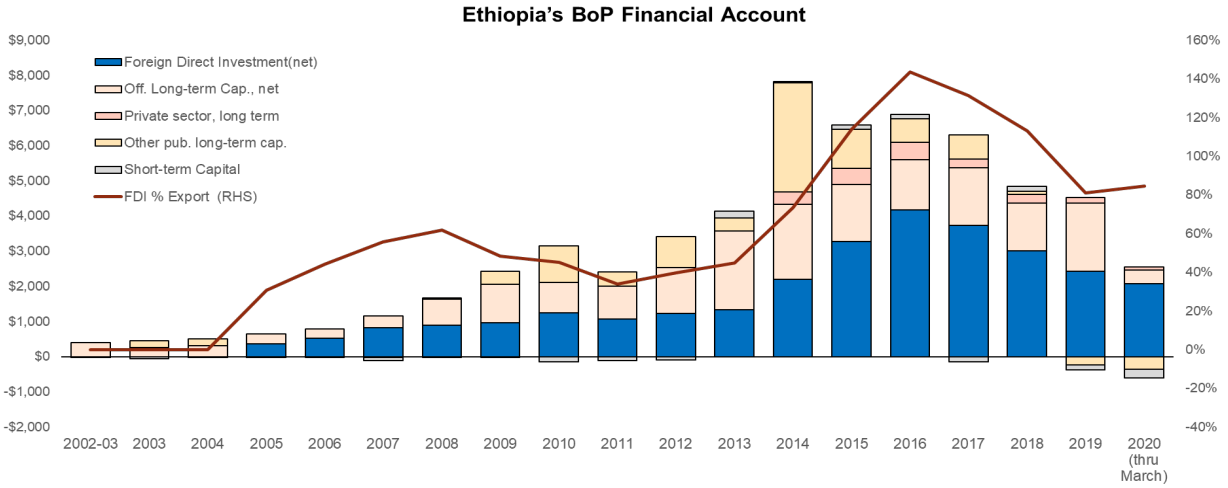
Foreign direct investment (FDI) is an important channel of knowledge diffusion in some cases. This is particularly true in cases of "efficiency-seeking FDI" where a foreign firm is investing in a country (or place) because it thinks it can be most productive there (as opposed to "market-seeking FDI" or "resource-seeking FDI"). Besides actual capital, FDI has been found to bring in new capabilities and integration with global markets and supply chains. Research has shown that there can be significant direct and indirect benefits from FDI and the activities of foreign firms.[31] These spillovers improve the productivity of other firms in the industry but also to suppliers and buyers that inhabit the same value-chain as foreign owned firms.

Foreign firms have played an important role in the history of diversification in Ethiopia as well. The original sugar factories south of Addis were started by a Dutch firm, the American company PVH played a critical role in taking advantage of the opportunity in garments through AGOA, and the cut flowers industry grew, in part, due to the knowhow and market connections from a firm from the Netherlands. These are just some clear examples. Since 2005, FDI inflows into Ethiopia

[31] Javorcik (2004)

have grown rapidly, but reached a peak in dollar value in 2014 and as a share of export value in 2016 (Figure 4.46). As shown earlier, FDI has also been concentrated in a few sectors like garments and building materials. This represents a missed opportunity. Our own research, as well as similar research by the World Bank, has shown that industries and firms in Ethiopia linked to foreign ones or recipients of FDI tend to have higher productivity.[32] By these estimates, FDI-linked firms have productivity that is on average 50% higher both from horizontal linkages (i.e., in the same industry) and vertical linkages (i.e., different industries but in the same supply chain).

Figure 4.46: Decomposition of Ethiopia's Financial Account



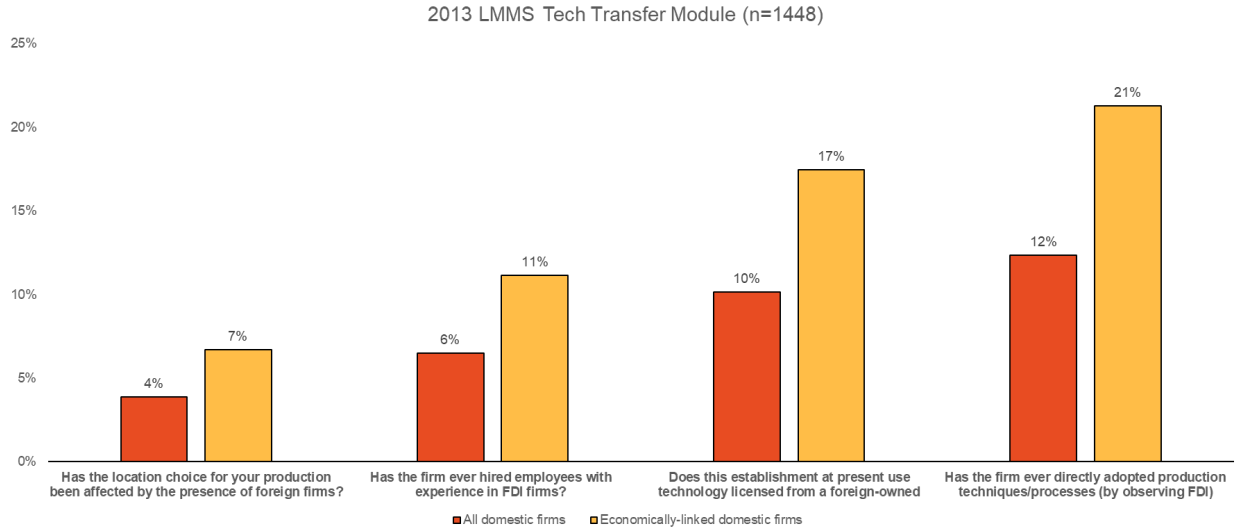
Source: NBE

From the lens of economic complexity, we tend to see one of the most important benefits of FDI as being a channel of diffusing knowhow, which is key for diversification. For a country like Ethiopia which sits in a disadvantaged position in the Product Space, the knowhow benefits of FDI are all the more important. The 2013 Technology Module of Ethiopia's Large and Medium Manufacturing Survey (LMMS) shows that firms which are connected vertically to foreign firms benefit from learning and copying processes from foreign firms (Figure 4.47).

The previous sections have given some frameworks for thinking about the types of industries that could thrive in Ethiopia as well as some initial indications of where they will thrive. But success in actually making those things in Ethiopia will depend on the ability of the country to get the right knowhow for production into the country when it may likely not exist already. Thus, an active FDI strategy would targets not just industries but rather identify and target specific international firms who might be most likely to bring those new industries to Ethiopia but not necessarily know that Ethiopia is a place where they could thrive. This is principally the job of the Ethiopian Investment Commission (EIC), though effective FDI promotion requires collaboration across federal agencies and collaboration between federal and local government entities.

[32] Abebe et al. (2018), Tsaedu and Chen (2021)

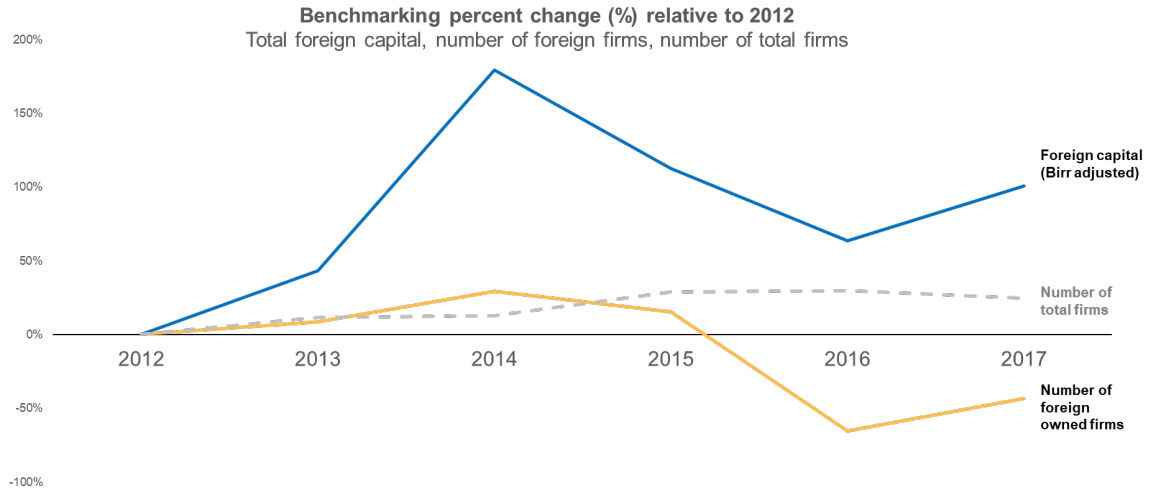
Figure 4.47: Domestic Firms Self-Reported Operational Change Due to Exposure to FDI



Source: LMMS

Unfortunately, FDI and foreign firm entry in Ethiopia has been declining rather than diversifying. Since around 2014-2015, the stock of foreign capital, inflows of FDI, and the number of foreign firms have been declining. This may have been for a number of different reasons including the worsening foreign exchange constraint or issues of social unrest. Between the peak of 2014 and 2017, foreign stock of capital in manufacturing decline by about 63% (Figure 4.48).

Figure 4.48: Change in Foreign Capital, and Firms Relative to 2012



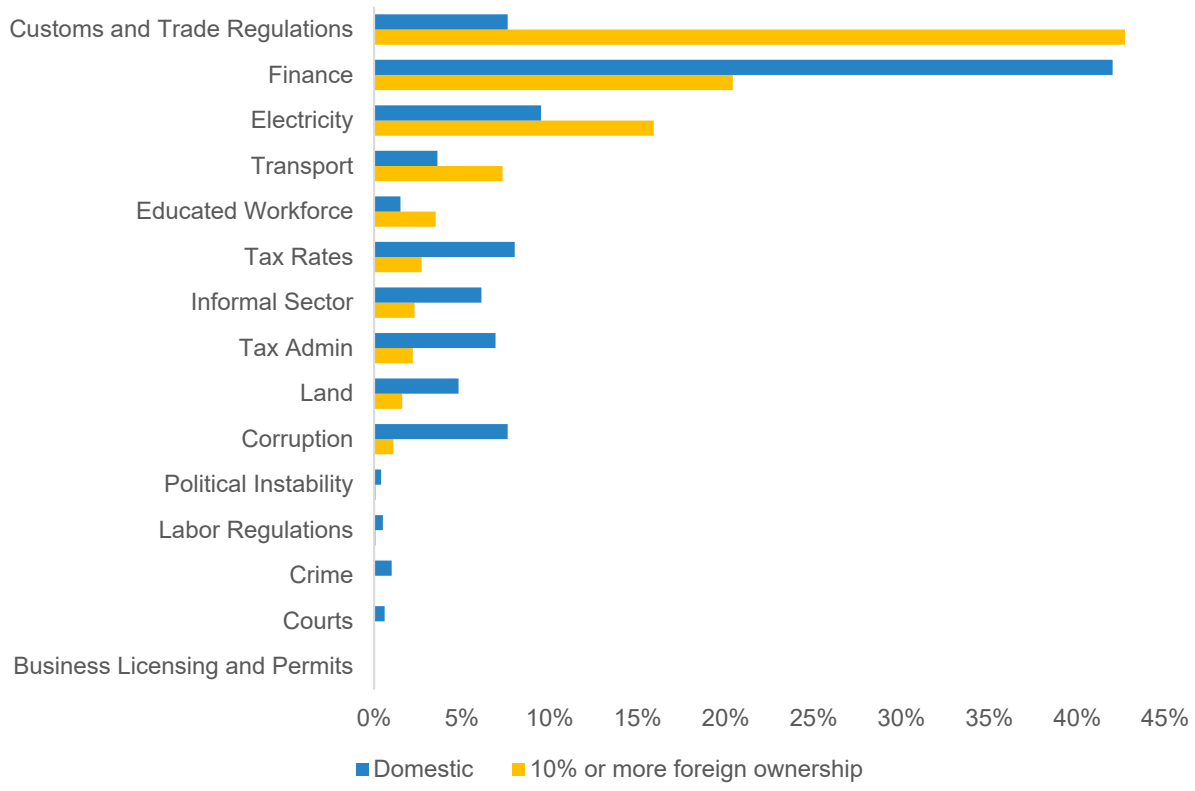
Source: LMMS

As with any decline, it is important to understand whether this is due to factors that are affecting industries overall (and not just foreign firms) or issues that are differentially affecting foreign

firms. We conducted a shift-share analysis of the trends in foreign capital growth in Ethiopia in LMMS firms to understand how much is explained by overall capital growth, growth in capital of firms that were already relatively foreign, and in growth in the foreign component of capital within in industries. Our analysis finds that a third of this decline had to do with the decline of industries that have been especially intensive in foreign capital more broadly. But two-thirds over the overall decline comes from a decrease in the foreign capital share in these usually foreign intensive industries as well. In other words, sectors with more foreign presence declines but even more importantly, sectors overall became less foreign. Brining in new FDI would require first reversing this trend.

Key to this will be to understand what the specific constraints are (e.g., electricity, infrastructure, foreign exchange, political stability) that foreign firms might face to operate in Ethiopia. The Figure 4.49 shows that at least as of 2015, foreign firms are more likely to find customs and trade regulations are their largest constraint and more than both domestic firms. This relates to the overall challenge that firms have in being able to import critical inputs while foreign exchange is constrained. The second largest pain point was access to finance where foreign firms fare better especially compared to domestic ones, likely to due to their ability to access funds from abroad.

Figure 4.49: Biggest Constraints Reported by Foreign vs Domestic firms in Ethiopia, 2015



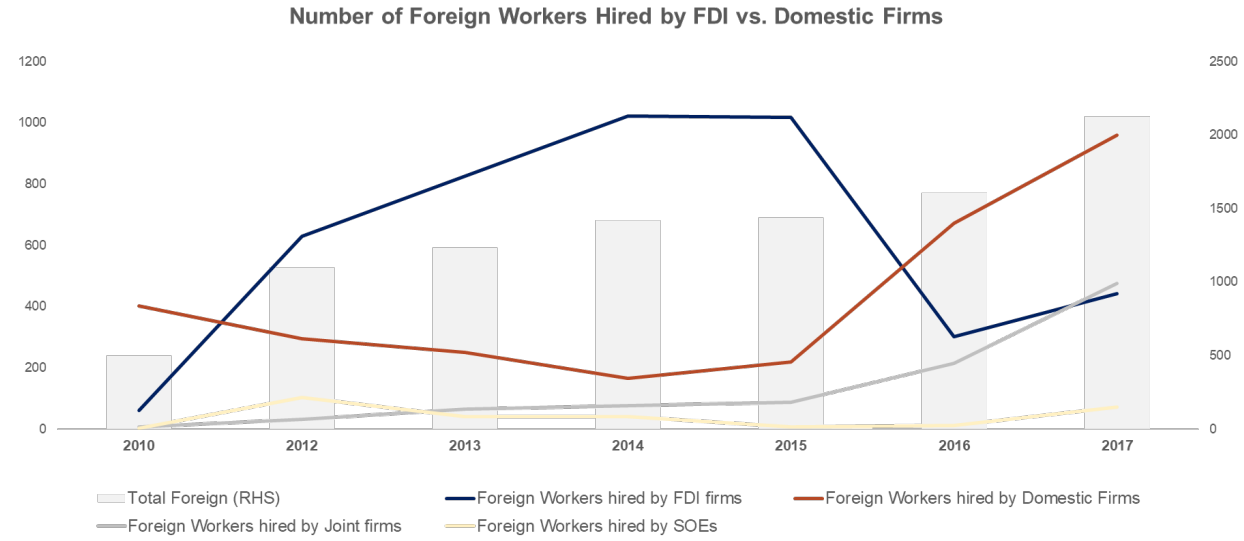
Source: World Bank Enterprise Survey

Foreign Workers

Foreign workers can be another "agent of change" for incorporating knowhow and helping to diversify production. Foreign workers can play a strong complementary role in an economy. A Growth Lab analysis of manufacturing firms shows that domestic firms with foreign workers or workers that worked in a foreign firm are 59% more productive than non-domestic firms with no foreign workers, those domestic firms with foreign workers are also 51% more productive. Furthermore, we find that Ethiopian firms with foreign workers are more likely to produce a greater diversity of products and report that having foreign workers improved their production technologies.

Interestingly, though foreign capital and foreign firms have declined in scale in Ethiopia, the number of foreign workers may not have declined much if at all (Figure 4.50). When we decompose foreign workers by firm type, we find that foreign workers in foreign firms declined as foreign capital and foreign firms exited Ethiopia. But rather than leave Ethiopia, the data shows that many foreign workers remained in Ethiopia and were hired by domestic firms. The sectors that tended to lose foreign firms (like garments and plastics) were also the ones that saw domestic firms gain foreign workers. This was a surprising result, and it suggests that foreign workers often prefer to work in Ethiopia for a new firm rather than leave the country with a firm or conduct their job search internationally. Anecdotally, these individuals often served management roles in the original foreign firm where they worked. These individuals can provide needed skills and knowhow from the original company to other companies, including domestically owned companies. In addition, around this time, rules for hiring foreign workers in domestic firms were also relaxed, making it easier for foreign workers to move to domestic firms.

Figure 4.50: Foreign Workers in Manufacturing Firms



Source: LMMS

With the recent exits of firms after the suspension of AGOA, an important policy area would be to understand what happens to the foreign workers that used to work in those firms. Keeping the workers in the country could help to mitigate the negative effects of the firms leaving by transferring knowhow to new firms. It is also important to leverage attractive and welcoming visa policies for foreign workers. In a situation where the churn of foreign workers can help improve knowhow transfer, you may want a visa policy that is tied to the individual rather than a specific job sponsor. This would allow people to remain in Ethiopia or transfer jobs even if their original hiring firm exits.

State-Owned Enterprises

Another agent of change that policy could target are one or more of Ethiopia's more than 40 state owned enterprises. Dating back to Ethiopia's socialist period, the Ethiopian government has a presence in a wide variety of industries from air travel with Ethiopian Airlines to production of pesticides to public services like the Ethiopian Postal Service. SOEs still play a large role in the Ethiopian economy. The proper role of SOEs in the Ethiopian economy is a complex one. On the one hand, well-run SOEs can provide important public goods and services or be sources of revenue for the government. On the other hand, they can also be perennial loss makers that are a drain on state finances. One framework, which was introduced in Chapter 3, for thinking about SOEs is to map them across the dimensions of how financially sound they are and how much public value they provide. SOEs that make profits and provide high public value are ones that will be sustainable over the long term. Those that are loss-making or provide little public value likely need re-evaluated. There is additionally sometimes tension where SOEs that are profitable and responsible for public goods are at the same time not providing those public goods efficiently or at enough scale. An example of this is in telecommunications, where financial health is not an issue, but service delivery is. Ethiopia has made attempts at reforming management oversight and other actions around such SOEs over the years, but these efforts have had mixed success.

Besides the direct value of their production, SOEs can also be a way for Ethiopia to experiment with its diversification efforts. In our analysis of complexity at a sub-national level in Ethiopia, we noted that the region of East Shewa emerged as one of the more diverse, complex, and industrialized areas of the country. Much of this industry was concentrated along a corridor between Addis and the City of Adama. The production of state-owned enterprises was a key part of the story of why this area was so much more diverse and complex than other regions. Growth in East Shewa tended to be in the industries that were growing in Ethiopia overall. However, looking at the tree maps of production in East Shewa in Figure 4.41, we can see that there are some industries present that are not present in Ethiopia's export basket. For example, motor vehicles and their parts are a part of the industrial basket of East Shewa but not in Ethiopia's overall export basket. This was in large part due to the presence of various subsidiaries of the Ethio-Engineering Group, itself subsidiary of the National Industrial Engineering Corporation (formerly known as MeTEC). MeTEC has been beset with issues of poor finances and corruption. But Ethio-Engineering Group's portfolio of products is in much more complex goods like machinery,

vehicles, fabricated metals, and others. All this production is for domestic consumption rather than exports, but the presence of these entities suggests some capabilities that could be built upon.

In East Shewa, these subsidiaries specifically included the Bishouftu Automotive Initiative (BAI) and the Adama Agricultural Machinery Industry (AAMI). BAI and AAMI originally worked on repairs of military vehicles but now focus entirely on commercial production of buses, pick-up trucks, tractors, and other vehicles, all for domestic consumption. While the companies have stated goals to produce additionally for export, they have yet to be successful in doing so. The industries that are part of the Ethio-Engineering Group like the existing vehicles of BAI and AAMI could be ones to explore export, either by working solely with the SOE in question or through a partnership with an international company. Some of the knowhow for producing these more complex products already exists in these companies. Strategies targeting the expansion of knowhow of these firms could allow them to begin to reach regional or global markets as well.

Ethiopia's Industrial Parks Development Corporation (IPDC) is an SOE that has had some successes but has otherwise struggled overall. IPDC is responsible for developing running publicly owned industrial parks across the country. Some like the garments park in Hawassa had seen success and even an oversubscription of companies wanting to operate in the park. In Figure 4.51, we can see that between 2015 and 2019, the number of sheds in Hawassa Industrial Park grew rapidly, taking up all the available space in the part. From satellite imagery alone, it is not clear if such sheds are occupied by active companies. However, Hawassa is known to be largely a success story in terms of attracting and retaining multi-national manufacturing companies. Hawassa was an important part of the story of Ethiopia's success in garment exports and in attracting foreign companies to invest in the country.

Figure 4.51: Hawassa Industrial Park in 2015 and 2018

Source: PlanetScope

Other parks, however, like Kilinto Pharmaceutical Park, shown in Figure 4.52, remain to this day almost entirely undeveloped. Kilinto was supposed to specialize in pharmaceuticals till date has only attracted a single pharmaceutical firm. The experience of Hawassa, as well as relatively more successful private industrial parks like Eastern Industrial Park, suggests that there are many lessons to be learned from successful industrial parks and apply those lessons to the strategy of industrial

parks going forward. Industrial parks can be key agent of change for foreign investment and diversification as they help coordinate key public goods for new industries. However, this will only happen if the parks are well managed and able to access public goods like transport, electricity, water, sewerage services, and other public inputs that firms need to be productive.

Figure 4.52: Kilinto Industrial Park in 2022

Source: Google Earth

Policy for Targeted Diversification

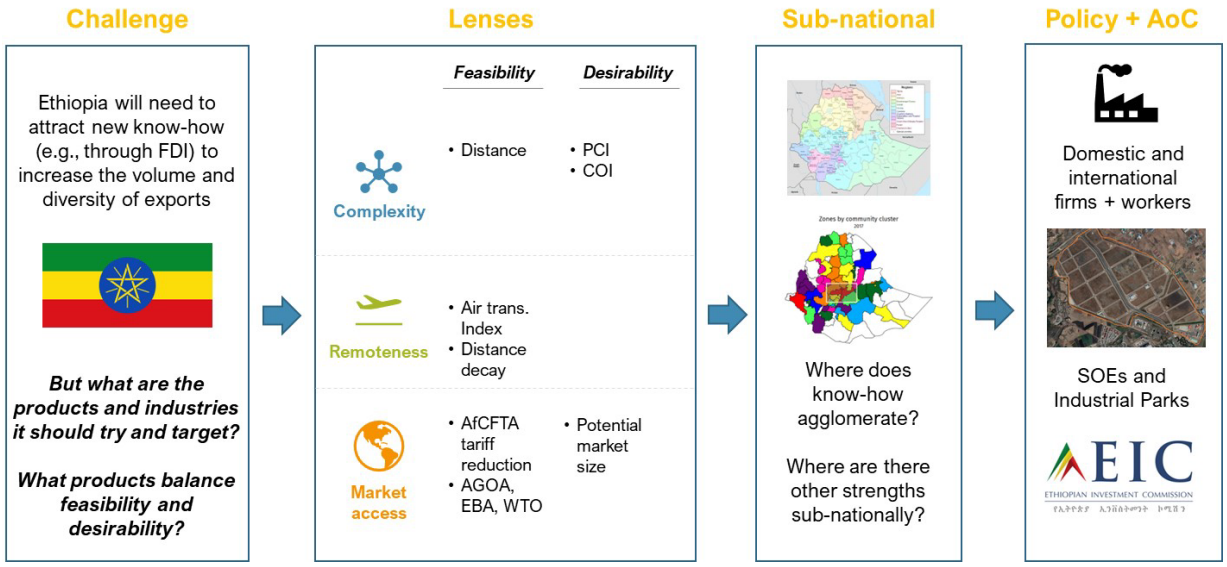
This chapter began with a discussion of the fundamental challenge Ethiopia has faced in expanding exports. Expansion of exports will necessarily require diversification as Ethiopia's current export basket is too narrow. Despite a few recent successes in diversifying the export base, Ethiopia's export performance over the past decade has not supported great enough foreign exchange generation to sustain rapid economic growth. From a complexity point of view, Ethiopia's lackluster performance in exports versus its highly ambitious goals is not surprising. The country's exports are too low in overall complexity to support envisioned export growth and are relatively far away, in terms of knowhow and capabilities, from the products and industries that could provide a stronger base for export growth in the future. To expand to new product and industries, Ethiopia will need to attract FDI that brings knowhow needed to make both short and long jumps in the Product Space.

If this challenge, faced by many low-income countries, were not enough, Ethiopian exports must overcome its disadvantages of being remote, landlocked, and poorly position geographically in comparison to most large, global markets. Any effective strategies to promote FDI in strategic new industries will need to be aware not only national comparative advantages but also sub-national differences in productive capacity and other advantages. Effective strategies, moreover, are not

just things that exist on paper but rather systems that enable actions by a variety of agents for change, including foreign firms, foreign workers, and SOEs.

Figure 4.53 (copied from earlier in the chapter) summarizes a framework for targeted diversification. In the shorter-term, the most feasible opportunities for Ethiopia to diversify and grow its exports will continue to be in expanding exports of garments and higher-value agricultural products, including livestock and fruits. At the same time, there may be some more difficult jumps possible in some electronics and machinery products, especially through firms and SOEs that already operate in the space partnering with foreign firms. Spatially, Ethiopia's export growth will likely need to be driven by success within the more diverse industrial areas in and around Addis Ababa, where productive knowhow is currently concentrated. These places will be crucial for making jumps to new products. But other regions might have opportunities for expanding the industries where Ethiopia already has a foothold in global market share. Policy will need to be more deliberate and active in furthering market access through FTAs and making sure that Ethiopia has access to the knowhow gained from foreign firms and foreign workers. Making use of the framework outlined here, and many of the tools discussed throughout this chapter, would require efforts from various parts of government. The Ethiopian Investment Commission (EIC) is one key agency of government, and the public organization that would likely need to lead targeted investment promotion strategies along these lines.

Figure 4.53: Framework for Targeted Diversification



Source: Own construction

Throughout this chapter, we have presented frameworks for considering what products and industries might be feasible and attractive from different, relevant lenses. The point of these exercises was not to create a list of specific products that are the exact things that organizations like EIC should target. Rather, the concepts and examples in the chapter provide an approach that

could be tailored by EIC and other agents in Ethiopia to evaluate different investment opportunities and then target within their investment promotion efforts companies that are most likely to thrive in Ethiopia. Investment promotion within this framework is not primarily about providing tax and other incentives but finding and working with companies that could succeed in Ethiopia without intensive government support. This type of investment promotion must be targeted and active in nature, with the investment promotion agency involved always experimenting and learning. It requires that EIC not only strategically target firms for outreach but also be able to listen to these firms and coordinate across government to address constraints that they discover are preventing firms from investing in new operations in Ethiopia.

EIC must also be able to identify the successes that are currently taking place in Ethiopia and support measures to scale success. It must also adapt to changing comparative advantages to identify opportunities. For example, with PVH shutting down operations in Ethiopia, it is not clear what has happened to the workers, especially foreign workers, that have gained knowhow through working at PVH. Are some of these businesses in a position to use that knowhow to spur growth of competitive domestic firms? With changing market access, what strategies are businesses trying to pivot to European or African markets? Investment promotion as an activity that must be opportunistic and iterative rather than wedded to a specific plan. It will be impossible to plan to great detail production of new industries in Ethiopia. There will inevitably be too many unknowns regarding what capabilities are missing when a firm does try to produce a new product or when a leading international firm enters Ethiopia in a new industry.

This framework merely gives a sense of the types of opportunities to look out for and some things that may be places to start for active development. The framework itself must be adapted and owned by Ethiopian agencies to succeed. Even at the time of writing, markets and technologies are rapidly. Global decarbonization is introducing new opportunities for countries to host production to power the green economy.[33] Ethiopia's investment in the Grand Ethiopian Renaissance Dam could create opportunities for Ethiopia to export not just excess electricity, but also products that are intensive in electricity. But to take advantage of such an opportunity, the EIC will need to be nimble enough to see opportunities and work collaboratively across the public sector and with the private sector to support growth opportunities. Meanwhile, global instability may be forcing firms to pursue strategies to diversify their supply chains, which could create new opportunities for places like Ethiopia. The growth of the African market and the launch of AfCFTA could create many strategic opportunities for Ethiopia to diversify. But many opportunities are unlikely to emerge on their own. Active investment promotion is therefore key for Ethiopia's long-term diversification and growth.

[33] Hausmann, Ricardo. "Green Growth at the End of the Flat World | by Ricardo Hausmann." Project Syndicate, December 9, 2021. http://www.project.syndicate.org/commentary/green-growth-and-end-of-flat-energy-world-by-ricardo-hausmann-2021-12.

V. Ethiopia's Homegrown Economic Reforms

Ethiopia faces interacting challenges of slowing growth and growing macroeconomic imbalances and is pursuing a range of policy priorities that can be conflicting. Addressing the growth challenge through accelerating economic diversification and export growth is profoundly difficult in the macroeconomic context of a tightening foreign exchange constraint alongside additional macro problems of inflation and debt that trace to an underfunded government deficit. Yet, better macroeconomic policy sequencing to address the foreign exchange imbalance would not guarantee an acceleration in export growth and economic growth on its own. Growth will require not just improved access to foreign exchange across the economy today but also expansion in productivity in goods and services that Ethiopia can sell to the rest of the world to generate more foreign exchange over time.

Ethiopia faces a difficult mix of economic shocks, with the two-year conflict being the most severe. If peace can be restored, the question for Ethiopian policymakers and development partners is, how can a sustainable post-war growth acceleration be achieved? Ethiopia's exceptional growth after 2003 provides some motivation. At that time, increased fiscal space and the ability to borrow from abroad allowed for public investment, import capacity, and knowhow growth to come together to produce a multi-year expansion in agriculture. How could the same dynamic be achieved again but across broader sectors that diversify export growth for generations to come?

This is the question that we began to ask in Chapter 1, which introduced the challenges of exceptional growth under strain in Ethiopia. As Chapter 2 (Growth Diagnostic) discussed, many national economic strategies feature a 'do all you can, while you can' approach to reforms. This approach relies on a set of assumptions: all reform is good; the more areas of reform, the better; and the deeper the reform, the better. This approach rarely or never works because tradeoffs like those faced in Ethiopia are the exception rather than the rule. The cost of getting the diagnosis wrong is in developing low-impact efforts, low-quality spending, reform fatigue and even adverse effects that may make the binding constraint ever more binding. Prescribing the wrong cure for a misdiagnosed disease can be economically harmful and politically dangerous. Chapter 3 (Macroeconomic Diagnostic) and Chapter 4 (Diversification Challenge) identified principles and tools that Ethiopia could use based on careful exploration of the interacting growth and macroeconomic problems that were introduced as the growth syndrome in Chapter 2.

This final chapter asks the question, how well did the Ethiopian government diagnose its economic problems and target the binding constraint in its reform strategy? This chapter analyzes the Ethiopian government's Homegrown Economic Reform (HGER) agenda that began in 2019. The assessment is based primarily on an innovative midterm review of HGER conducted in early 2021 by the Growth Lab team based on a request by the Ministry of Finance. The final sections of this chapter revisit main findings in the context of events that have transpired since and reflect on lessons learned in Ethiopia that are relevant for other developing countries.

What approach did the government take to address its economic problems?

In mid-2019, the Government of Ethiopia set out to prepare a new economic strategy in an environment of conflicting economic signals that could have multiple interpretations. On the one hand, Ethiopia had achieved the world's fastest growth rate for the past decade — growth that led to a tripling of per capita income and moved millions of households out of poverty. This could have driven political complacency to offer more-of-the-same reforms, given that the previous national strategy, Growth and Transformation Plan II (GTP II), was a five-year extension of GTP I. However, policymakers realized that something critical was not working within this strategy paradigm as both phases of GTP ran into a similar problem of growth without much transformation. In 2019, the Government of Ethiopia was forced to face the realization that growth was slowing in the context of widening macroeconomic imbalances. High and volatile inflation was sapping the purchasing power of the poor and savings across society; external debt levels had run up against important ceilings a decade after debt relief; and foreign exchange shortages were increasingly critical, leading to lengthy queues for imports and rising firm stoppages and closures due to a lack of access to imported inputs.

World-leading economic growth had not solved all problems, rather it created some new political challenges. As opportunity expanded across Ethiopia, the distribution of the power and decision-making was challenged. Rising social unrest in the preceding years ultimately led in part to the voluntary resignation of the previous Prime Minister. The selection of Abiy Ahmed as Prime Minister signaled a new coalition in power, with renewed energy to achieve sustained growth with more inclusive representation. The extent to which the economic strategy would depart from previous strategies, was not obvious in the lead-up to the announcement of the reforms. However, what was clear was that the new administration would be forced to address rising macroeconomic imbalances, with limited fiscal space and policy options at their disposal versus the past.

In September 2019, the government announced the Homegrown Economic Reform (HGER) agenda.[34] This would come along with a 10-year plan for sector development soon after, but HGER was in many ways a more targeted approach that Ethiopia had taken in the past to understand and respond to new economic challenges. The framing of the reform agenda marked a major advance in the diagnosis of the economic problems across both macroeconomic and growth dimensions. The three-year program contained planned reforms, though these were often stated in terms of principles and motivating problems rather than clear action steps, across three pillars. The first, and arguably most developed pillar, was meant to address the core macro-financial imbalances. Not lacking ambition, the sectoral pillar of reforms aimed to accelerate the transition from a state-led economic model to private sector-driven growth. The third pillar aimed to jumpstart stronger

[34] HGER objectives were listed in detail in a presentation by the Prime Minister's Office in September 2019. In the same month, a written document was drafted, entitled "A Homegrown Economic Reform Agenda: A Pathway to Prosperity," which elaborated these objectives. That document was edited in March 2020, and the later version is used as the guide for this review.

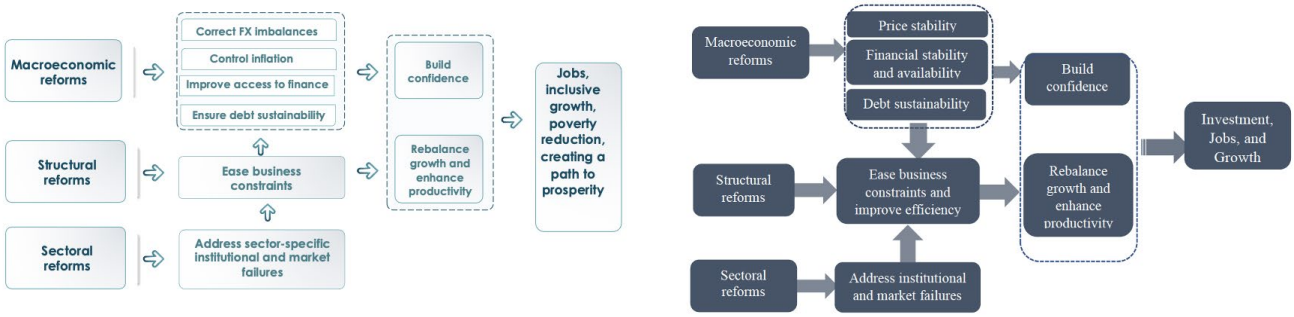
growth led by five broad economic sectors. In total HGER included 53 areas of reform across three pillars (Figure 5.1):

- ***Macroeconomic Reforms*** to address core macro-financial instability. The pillar includes five areas: (i) fiscal policy and SOE reform; (ii) foreign exchange imbalances; (iii) monetary policy; (iv) state-owned banks; and (v) financial system deepening.

- ***Structural Reforms*** to rebalance the roles of the public and private sector, with particular focus on telecom as the initial sector for an ambitious privatization agenda. The pillar covers six areas: (i) ease of doing business; (ii) trade policy; (iii) public institution capacity; (iv) logistics; (v) power; and (vi) telecommunications.

- ***Sectoral Reforms*** to unlock new and existing growth potential across five sectors. The pillar encompasses five sectors: (i) agriculture; (ii) manufacturing; (iii) mining; (iv) tourism; and (v) ICT.

Figure 5.1: The HGER Visual Schematic in September 2019 (left) and March 2020 (right)



Sources: PMO's HGER Powerpoint (September 2019); "A Homegrown Economic Reform Agenda: A Pathway to Prosperity" (edited in March 2020)

This chapter is based primarily on a Growth Lab review of the progress made on the HGER agenda halfway through its planned implementation. The review, which took place mostly in the month of March 2021, set out to review HGER progress on its own terms. The goal was not to ask what constraints HGER should tackle but instead to review how well HGER is performing on its own goals and based on its own intended actions. But this was not as straightforward as it might appear. The objectives put forward in the September 2019 HGER outline differed in some respects from detailed written version released in March 2020. Some of these differences can be seen in the details of Figure 5.1. While the overall orientation of the three pillars was the same in both cases, the 50+ reform areas differed in how they defined motivating problems and packaged reforms. In both cases, specific reform actions were often not outlined. This is not a problem; especially as effective reforms often need to be problem-centered rather than solution-oriented and actions need to be identified and developed along the way. However, it did create a challenge for midterm

review of HGER on its own terms, since HGER plans were rarely explicit — outside of several macroeconomic reform areas — about what actions were to be prioritized.

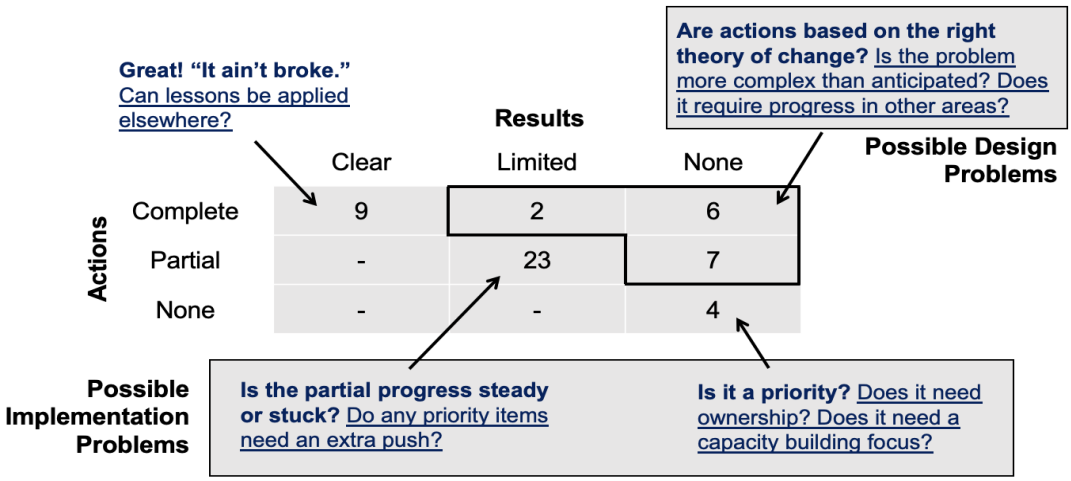
Our review looked objective by objective (taking objectives as outlined in March 2020 as our guide) to take stock of progress, but also aimed to identify important patterns underlying progress, emerging challenges, and opportunities for accelerating progress toward the ultimate goals of HGER. The objective of this review was not to provide a comprehensive accounting of the exact actions taken for each objective of HGER — something that the Growth Lab was not positioned to do better than internal government reviews occurring at the same time — but rather to evaluate progress more holistically for each objective to identify critical changes that could strengthen HGER moving forward. Assessing progress for each objective was and is rife with challenges including widespread lack of information about initially planned actions and expected timelines for delivery, incomplete information availability regarding reform actions taken, substantial unexpected external shocks (including COVID-19 and conflict), and time lags in economic indicators. These challenges were known at the outset of the review. These types of challenges underscore the importance of coordinating real-time review of HGER, as the Ministry of Finance did at this time, to allow for course corrections for reform that cannot occur if reviews only take place at the end of the implementation period.

The Growth Lab took a somewhat novel approach to this midterm review based on the goals and challenges just discussed. We aimed to track "progress" not along one dimension, as assumed by the Ministry of Finance, but along two dimensions: actions and results. This meant asking two questions for each objective within HGER. First, to what extent had intended actions been taken. And second, if actions are being taken, are they having their intended results. Both these questions were not always straightforward, but interviews with key stakeholders were used to understand both the nature of intended strategies and assumed theories of change around what effects were expected from the actions that were taken. This approach allowed for the differentiation between implementation problems (i.e., where intended actions are not being taken) and design problems (i.e., where intended actions are not having the impacts that were assumed they would). This was possible even within the context of multiple and severe shocks. The value of this approach is that implementation problems and design problems are different in nature and require different response actions to improve outcomes.

Our midterm review (March 2021) found that progress across individual objectives varies significantly, but overall progress has been substantial, especially in the context of unexpected shocks versus when HGER was launched. The results along the two dimensions of actions and results are shown in Figure 5.2. Several objectives had completed actions and clear results, though they generally focused on less complex problems and were achieved by simply issuing or repealing directives. For nearly half of objectives, progress was more partial in both actions taken and results observed. In such cases, it is important to explore whether reform progress is steady and on track or has hit a constraint that requires attention during the remainder of HGER to overcome. For a small minority of objectives, actions taken have been very limited, raising the questions of whether

these objectives are or should remain priorities of HGER. Finally, and perhaps most importantly, the review finds that roughly one-third of objectives show a pattern of significant actions completed but very limited (or no) signs of results that were expected from those actions, indicating possible design problems. Each of these instances may reflect issues with the underlying theory of change of the objective. This midterm review was an ideal time to discover these types of problems to rethink theories of change moving forward in order to improve the effectiveness of HGER in achieving its own objectives. For some such objectives, there is evidence that the problem was more complex than anticipated and/or more dependent on progress in other areas. In these cases, updated strategies and careful sequencing of reforms will be needed for HGER to succeed in its overall goals.

Figure 5.2: HGER Progress in the Actions-Results Framework and Implications



Source: Growth Lab Midterm Review of HGER

These results varied by pillar of HGER. Within the macroeconomic reform pillar, an overarching takeaway was that progress toward the stated objectives (strengthening public sector finances and SOE reforms, addressing foreign exchange imbalances, etc.) was less a problem of the direction of individual reform actions and more a problem of reform sequencing. The macroeconomic goals across HGER target several virtuous efforts but the central challenge in these reform efforts comes from the fact that these goals are often competing, in the ways discussed in Chapter 3 of this compendium. This explains how widespread actions that all appear to be independently in the right direction can collectively lead to outcomes of foreign exchange imbalances and inflation that have worsened rather than improved during HGER. This competing nature of reforms calls for careful consideration of reform sequencing to focus on the binding constraint and on the principal reforms that other areas depend on.

Overall, across the three pillars, the midterm review identified two key issues have undermined stronger results across the whole of HGER: (1) the persistent and deep foreign exchange shortage; and (2) slower-than-planned liberalization and partial privatization of Ethio Telecom. The first of

these issues is more of a design problem — where macroeconomic reform sequencing is not oriented to solve the problem — while the second is more of an implementation with some initial design shortcomings. However, both issues came up repeatedly as key problems that undermined stronger results on other objective where actions had been taken. For example, both foreign exchange shortages and poor quality and expensive telecommunications were problems that undermined the full benefits of sector reforms as sectors bumped up against these constraints. The fact that privatization of Ethio Telecom was not a swift and profitable as initially assumed in HGER planning also meant that the government did not get an infusion of foreign exchange resources from the sale of Ethio Telecom that it expected. This was more of a design problem, since outright privatization was not pursued for good reasons. However, it was also an implementation problem as the partial privatization process that was pursued was frequently delayed and beset by tradeoffs in how much to liberalize in the sector, ultimately at the expense of the quality of telecommunications in the country.

Other lessons from early implementation included real bandwidth limitations for reforms where scarce political and administrative capital is at play. This necessitates more strategic prioritization of reforms given that the attention of ministers and senior officials is too limited to focus on all priorities at once. In addition, the technical capabilities in core public institutions were missing permanent positions that could advance key elements of the HGER agenda. Ultimately, HGER's success will require continued learning and adaptation based on both design problems and implementation problems that were identified in the review.

While the review aimed to find areas for improvement, it is also important to acknowledge successes. By March 2021, the HGER implementation period had been forced to confront a series of unexpected shocks to the Ethiopian economy. This is a lesson for national strategies on the need to plan for the unexpected. HGER was not only been important toward addressing deep constraints that threaten to undermine Ethiopia's rapid development, as it was designed, but it also served as an effective central coordination tool for supporting Ethiopia's economic resilience to the unforeseen challenges of COVID-19. High-level committees to enact the HGER agenda provided an effective coordinating structure across government to address new shocks, from desert locust infestation, drought, social unrest, the COVID-19 pandemic, and conflict to some extent. For example, as COVID-19 struck, HGER sector plans enabled the diversification of manufacturing production into PPE, sanitizer, and other supplies that suddenly increased in demand globally. Ethiopian Airlines then played a critical role in allowing Ethiopia to supply these products to the rest of Africa.

With this summary in place, the remainder of this chapter is structured as follows. After a few methodological notes, progress in each HGER pillar (macroeconomic, structural, sectoral) is discussed, including a topline analysis and detailed review of each objective on the two dimensions of actions and results. Next, we summarize observations for HGER in its entirety at the midpoint of March 2021. The chapter then considers the events that have transpired since March 2021including the conflict to reflect on priorities for accelerating HGER progress as late 2022.

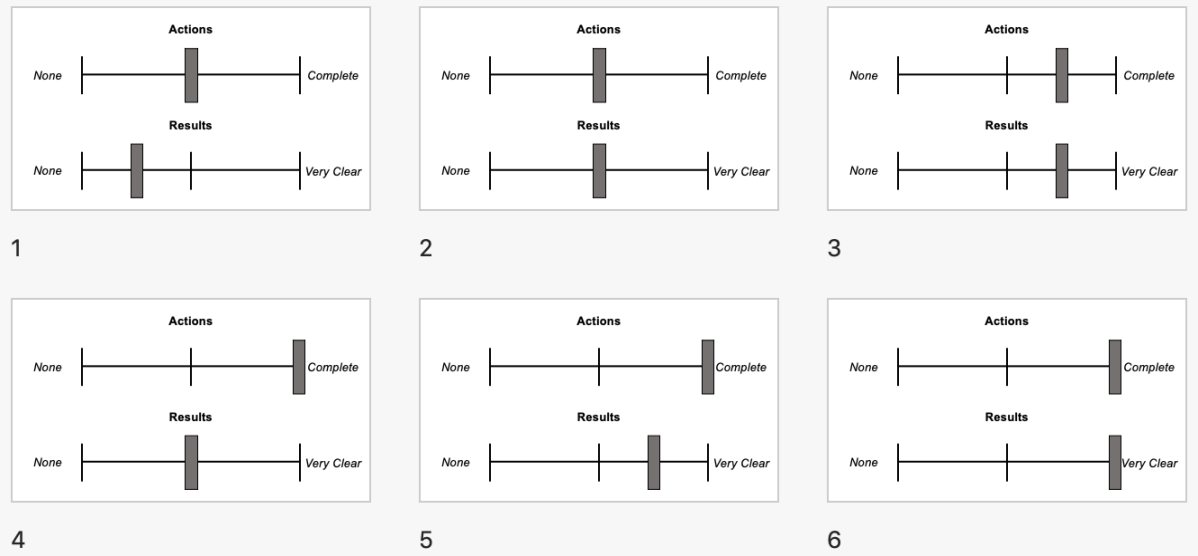
The chapter concludes with reflections on what the homegrown reform experience may mean for approaches to government reform beyond Ethiopia.

Review Methodology and Caveats

The approach of this review is to identify progress (roughly) for as many objectives as possible along two distinct dimensions — actions and results. The **"*Actions*"** dimension aims to capture to what extent the reforms steps and other initiatives that were envisioned at the start of HGER were acted upon. Where actions (and to a lesser extent results), were explicitly discussed in initial HGER documents, these are reflected. In most cases, however, specific actions and expected results were not spelled out explicitly. This is, of course, judged based on available information and not intended to be precise. The aim is to reflect how far along actions have progressed in relation to initial government expectations of what would be done by the time of this review. "***Results*"** aims to capture whether the actions that have been taken are producing the results that were initially envisioned. This dimension is also not intended to be precise, but rather reflect a best understanding of whether actions are having their intended effects. Often, since results would only be expected to occur with some time, this dimension aims to capture whether there are early signals that actions have had their intended effect and that benefits of these actions are on their way. This approach is particularly revealing when signals point in an opposite direction of expected results as this shows a potential problem with the theory of change.

The relationship between actions taken and results achieved provides a useful illustration of the challenges in the implementation and design of reforms. Figure 5.3 presents several scenarios for purposes of comparison. Actions may progress significantly, but results may be lagging (examples 1 and 4). This may be cause for concern regarding the theory of change for actions on this objective if the results are not achieved by the planned actions. Alternatively, where actions are not complete, but results are commensurate to actions, there could be implementation challenges (example 2 and to a lesser extent 3). There is no apparent problem with the theory of change, but officials should identify steps to accelerate actions or address implementation weaknesses. Another scenario is where all planned actions to date have been taken and all the intended results seen (example 6). This is the best possible scenario but will only be possible where reforms are relatively simple and the cause and effect on results happens over a short period. There may objectives that look more like example 5, where actions are complete and expected results have mostly been seen. There may be smaller design problems at play in instances like this or it may be the case that it will take time for signals of results to fully come through. It is also possible that full results might be undermined by a shock or poor progress in some other objective of HGER that is interacting. There can also be much more dramatic differences in actions and results than any of the examples shown here. In some cases, actions could be complete but with no signals of the intended results. It is also possible for results to outpace actions, if some other mechanism has resulted in the desired results even as planned actions were not taken.

Figure 5.3: Examples of combinations of actions and results for objectives



Source: Own construction

The midterm review took place primarily in March 2021 using a series of methods, including primary data analysis, structured interviews, and strategy reviews. Where possible, quantitative analysis using public data was favored. The team also drew upon data provided by the government to supplement publicly available data. As a key source of information for most objectives — especially outside of the macro reform pillar — structured interviews were conducted. For these interviews, questions were prepared to specifically probe expectations and both quantitative and subjective assessments of progress at a detailed level according to descriptions of objectives as laid out in HGER documents. Over the month of March 2021, ten interviews were conducted with officials from public organizations and four were conducted with key development partners. Key strategic documents were reviewed, including sector strategies, program operations and accounting reports, and other guiding documents shared from the interviews.

Before proceeding to discuss HGER progress for each objective, it is important to note several caveats. These caveats primarily impact the comprehensiveness and precision of this review. This review strives to make all assessments as objectively as possible, but the caveats below imply that aspects of this review are ultimately subjective exercises, and reasonable interpretations of "progress" will differ. Given these challenges, the spirit of this review is to raise observations that may be useful toward improving the outcomes of HGER and to encourage the federal government and local stakeholders to reach their own conclusions. The review aims to apply consistent standards throughout and focus on identifying big issues where HGER adaptation may be needed. These known caveats include:

i. **The information gathered is incomplete**. Despite many information gaps, the team still tried to make an informed assessment for every objective of HGER. This is because it was determined to be more useful to make an imperfect assessment that causes the government to

take a closer look at the objective than to not do so and provide the government no independent viewpoint at all on the objective.

ii. **Different objectives require very different timelines.** The Growth Lab tried to assess "progress" with sensitivity to whether actions were envisioned to take place early or late in the HGER period while also recognizing that some objectives require lengthy legal processes or stakeholder engagement. However, timelines are often unclear and different stakeholders had different expectations regarding phasing.

iii. **Ethiopia has faced substantial shocks since the design and start of HGER.** Any assessment of progress must be done in light of the COVID-19 pandemic, the ongoing conflict, continued extreme weather events, the multi-year desert locust infestation, and other important shocks to implementation and to the economy as a whole. Assessments aim to be sensitive to these shocks and take special note of areas where shocks may create implementation problems and critical gaps in theories of change that could be addressed in the remainder of HGER.

iv. **COVID-19 forced this review to be conducted fully remotely.** While the Growth Lab research team was able to provide an independent view, it was not in a strong position to fully appreciate local context and dynamics, despite the power of videoconferencing technology and frequent interactions with government officials.

The next sections review each pillar of the homegrown economic reform agenda at the midpoint in March 2021, including an assessment against their topline objectives and a detailed review of progress on each of the component objectives.

Pillar 1: Macroeconomic Reforms – Addressing core macroeconomic instabilities

Macroeconomic reforms are at the heart of the Homegrown Economic Reform (HGER) agenda. Public documents outlining HGER are most detailed regarding intended levers of policy and strategies for overcoming the macroeconomic distortions. The documents are explicit about the need for coordination across macroeconomic policy instruments. The strategy is extensive in identifying five areas of macroeconomic reforms. This section summarizes progress on each objective in the five areas: (i) fiscal policy and SOE reform; (ii) foreign exchange imbalances; (iii) monetary policy; (iv) state-owned banks; and (v) financial system deepening.

The strength of the macroeconomic reform pillar is that it targets the key distortions; the challenge is that its design is agnostic about the order of reforms. This is in part a reflection that the design of the reform agenda is not problem-driven (i.e., it does not start from a clear definition of the problem it is addressing and what the theory of change is for why the proposed reforms will address the problem to achieve the intended result). The public documents note the efforts to overcome the macroeconomic distortions that have "emerged over nearly two decades of rapid economic growth." As the growth diagnostics chapter highlights, a differential diagnosis would aim to deconstruct the problem to explain that these distortions have not grown linearly over time but

become elevated starting in 2015 before accelerating. Any causal theory of change must identify a consistent set of symptoms that explain the break in 2015 and the acceleration. In our macroeconomic diagnostic, many problems trace back to the underfunded fiscal deficit, which ultimately caused a reduction in the use of external borrowing after 2015 and has led to money growth and very high inflation. But the most binding macroeconomic problem in a proximate sense is foreign exchange scarcity and poor allocation of that foreign exchange through rationing.

Fiscal policy and SOE reform: *Complete actions and nearly complete results in ensuring debt sustainability; nearly complete actions and results on maintaining the current general government fiscal stance; nearly complete actions and medium results in SOE reforms to enhance the efficiency of public investments.*

Ethiopia's debt path appears sustainable in the long run but with short-term risks from COVID-19 and the conflict. The macroeconomic reform pillar itself arguably centers on fiscal policy. HGER envisioned a continuation of prudent on-budget fiscal spending and an expansion of revenue to reverse a long-term decline in revenues as a share of GDP. This was to occur alongside reforms and actions regarding SOE oversight and addressing debt-generating public enterprises, as off-budget capital spending has driven fiscal imbalances. Finally, this component of the pillar was meant to ensure debt sustainability through limits on non-concessionary borrowing, the use of a medium-term debt management strategy, and strategic reprofiling of some debts.

One measurable result for fiscal policy under HGER was the target of maintaining the current fiscal deficit at 3% of GDP, although no target was announced for the total deficit inclusive of SOEs. COVID-19 has significantly affected this pillar of HGER, but primarily through its impacts on revenues and expenditures. The crisis has also opened new avenues for debt reprofiling and suspension of debt payments, which Ethiopia has pursued. Within the context of these unexpected conditions, progress toward these fiscal objectives has been partial, but actions and fundamentals on debt sustainability have been strong, despite recent credit downgrades and market reactions. SOE reforms have been historic and substantial, but partial in comparison to ambitious expectations. The fiscal policy stance has been maintained even as revenues and expenditures faced the COVID-19 shock. Revenues have grown in nominal terms but fallen in real terms, and a real adjustment was made through expenditure reductions. HGER notes the need for measures to increase revenue mobilization that utilize the country's potential tax capacity of up to 20% of GDP. Further actions noted include an overhaul of the value-added tax (VAT) and excise laws as well as the enhancement of the IT capabilities required for tax collection. In the two fiscal years before COVID-19, the primary balance has narrowed. Changes in the excise tax system and improvements in VAT and customs administration are notable actions. However, revenues as a share of GDP have continued to fall since 2013, as evidence that the adjustment was through the margin of contracting expenditures more than expanding revenues. Ethiopia's low primary balance as a share of revenues stands well below comparators in 2019. COVID-related spending in 2019/2020 was ~1.5% of GDP. Despite the pressures, the primary deficit for fiscal year 2019-20 stood at 2.5% of GDP, unchanged from the previous fiscal year. General government expenditures

decreased from 15.3% to 14.2% of GDP and revenues from 11.5% to 10.5% of GDP. Expanding revenue collection remains a significant challenge.

While Ethiopia is on a sustainable debt path overall, this comes at significant economic costs. HGER outlined measures such as debt reprofiling, enhancing transparency in total government debt including SOEs, and limiting non-concessional loans in a consistent manner with the previous two years. All these actions have been pursued, but the debt-to-GDP ratio has been declining in recent years primarily as a result of a high share of concessional loans, heavy use of financial repression, and monetization of the deficit — essentially reducing debt through inflation. Ethiopia's interest payments as a share of revenue remain at manageable levels in line with international comparators. Based on this important indicator, debt accumulation is on an overall sustainable path. However, donors, creditors and markets do not necessarily view Ethiopia's debt in the same way. Debt and interest payments remain high in relation to exports, which reflects foreign exchange scarcity and repayment risks of FX-denominated loans and has led to adjustments in FX-denominated loans.

A large range of state-owned enterprise (SOE) reforms are underway, though the fiscal impacts of reform are not yet clear. SOE reforms aim to improve their public value and financial sustainability. These reforms include specific strategies for priority SOEs across a range of sectors (see the structural pillar for logistics, power, and telecom as key examples). These SOE and sector-specific strategies complement several legal, regulatory, and institutional changes meant to transform the overall transparency, accountability, and effectiveness of SOE management. Key reform steps of this type include: the Public Enterprise Proclamation is in the final stages of a revision process to strengthen SOE independence while structuring more effective oversight to modernize the public enterprise environment; the Public Enterprise Administration and Holding Agency (PEHAA) is undergoing a 5-year transformation plan and numerous large SOEs have adopted the International Financial Reporting System (IFRS); the Liability and Asset Management Corporation (LAMC) has been established to address legacy debts of several SOEs and provide space for efficiency gains (see also objectives dealing with public banks); public-private partnership (PPP) guidelines were announced, that are expected to affect future SOE-related investments. While progress is impressive, a few anticipated actions remain incomplete, and the impacts from actions taken on government finances are not yet ensured. The SOE reform agenda lacks a clear overarching structure that would help to ensure that action streams remain complementary and address constraints to public value and financial sustainability across the large spectrum of SOEs. Risk mapping and tracking of planned SOE investments, which become government contingent liabilities, appears incomplete, although steps are being taken to address long-standing gaps in these processes. The permanent staff of the government that is coordinating the large and complex set of SOE reform actions is smaller than is needed to effectively move all aspects forward at the desired pace. There are a few broad actions mentioned in HGER that remain priorities moving forward including finalizing ongoing SOE projects, reviewing and rationalizing explicit and implicit subsidies, and implementing innovative models such as PPPs.

Foreign exchange (FX) imbalances*: Actions outpaced results (sometimes significantly) across most objectives — correcting the prevailing exchange rate overvaluation; mobilizing less-costly foreign exchange resources to meet immediate foreign exchange needs and build level of international buffers (significantly); promoting exports, tourism, and FDI through macroeconomic and structural reforms (significantly); gradually easing FX controls and availability of FX to the private sector. Both actions and results were limited toward improving FX management and functioning of the interbank market. Note: Results on foreign exchange imbalances weakened further since the March 2021 midterm review, though actions have continued.*

Efforts show a systematic underperformance, not from lack of taking intended actions but given that actions were insufficient to overcome drivers of FX imbalances. The FX problem stems from an inconsistency between the quantity of money and the official nominal exchange rate. Although the government has pursued many of its planned actions, the money supply continues to expand faster than the nominal exchange rate. As it does not have enough reserves to buy the excess money and defend the exchange rate, it has had to rely on capital controls. The black-market premium persists, along with the need for the administrative allocation of imports and measures that force private agents to sell FX to the central bank at an artificially low rate. COVID-19 may have exacerbated this problem, but the pattern of actions outpacing results across this area of the macroeconomic reform strategy was evident before March 2020. In fact, for the one objective where some results have been seen — reducing the overvaluation of the exchange rate (i.e., real exchange rate depreciation) — these results came after April 2020 and positive trends have since reversed. Both before and after the onset of COVID-19, actions have proven unable to alter the presence of a significant parallel-market premium for FX (at 30-40% up to March 2021), indicating a persistent imbalance and the need for policy to ration scarce FX. This indicates that the nominal exchange rate devaluation trajectory is insufficient to resolve the imbalance. Policy levers to alter FX controls were also unable to break this bad equilibrium, and there are clear indications that most FX controls cannot be lifted without either a much larger boost in FX sources or a major reduction in the FX needs of the government (facilitated through the surrender requirement). Both of these are infeasible in the short-term; devaluation is the only option to resolve the imbalance.

Devaluation outpaced inflation in late 2020 and early 2021, such that depreciation in real terms (year-on-year) was achieved for the first time since 2018. While remaining well above NBE targets, year-on-year inflation slowed down to 18.1% in December 2020, from 22% in July 2020. This helped to facilitate temporary depreciation in the real effective exchange rate after April 2020, which appeared to represent progress in correcting the exchange rate misalignment. However, inflation has accelerated since June 2021 while the pace of depreciation has not such that the period of real depreciation has ended. The level of overvaluation remains problematic as reflected in the presence of the black-market premium. All other things being equal, previous real devaluation would have been expected to alleviate some of the pressure in the foreign exchange market; however, the parallel-market premium rose from 34% to 37% over the July-December 2020

timeframe. The parallel-market premium has remained between 30-40% since then while also exhibiting large volatility. Beyond the parallel-market premium, another clear sign that overvaluation persists is the persistence of balance of payments deficits and the FX queue. A clear sign of FX overvaluation is if demand for FX cannot be met with private supply alone (i.e., the balance of payments is not in in balance), and the central bank has to step in to provide FX as a seller of last resort (i.e., balance of payments is in deficit). By this metric, the birr is still overvalued.

Sufficient FX resources have not materialized as planned. Despite the major action taken of entering an IMF support program, FX resources have been insufficient to meet immediate needs and build reserve buffers. As part of mobilizing less costly FX sources, Ethiopia has managed to reach an agreement with the IMF on financing HGER objectives. Nevertheless, these efforts have been insufficient to build the level of international buffers. Ethiopia's Balance of Payments is driven primarily by a negative trade balance, offset by inward transfers. During the HGER period, given that the capital account is closed, less-costly FX inflows (e.g., transfers and loans) have not been able to fully offset the persistent current account deficit. More importantly than the current account deficit itself, constrained and declining imports show that immediate FX needs are not being met. Since the third quarter of 2018, capital inflows by other instruments (i.e., loans and bank deposits) on average brought in $0.47bn. From July 2018 to December 2020, the NBE lost $2.4bn in Net Foreign Assets (NFA), while private transfers and official transfers stood respectively at $13.3bn and $3.9bn.

COVID-19 quickly undermined the potential growth of key sources of foreign exchange, particularly tourism-based service exports, FDI, and remittances. Unfortunately, no amount of strategizing or promotion could have prevented this impact. In the first quarter of COVID-19, FDI had dropped by 8%, official remittances by 3%, and exports of services by 27% overall compared to the prior year. Goods exports experienced important growth over the period, largely due to recovery of gold exports. This was a one-off jump as a result of NBE gold pricing policies that brought illegal trade into legal trade. The overall fall in FX sources forced a decline in imports and economic growth. While remittances will return with global growth, recovering tourism and FDI will require adaptive ministerial approaches not considered by HGER. The pandemic worsened an already negative trend toward building international buffers and driven NFA further into negative territory. In 2020, private and official transfers combined with FDI ($1.69bn) and other investment inflows ($0.78bn) were not able to offset the wide deficit in goods and services ($7.04bn). As of early 2021 it was clear that without a course correction related to underlying causes of NFA loss, it will be very difficult for Ethiopia to build back its level of international buffers. Since this time, grant support from bilateral and multilateral donors has reportedly collapsed.

Over the last several years, the central bank has issued a variety of directives to improve the targeting of FX availability to the private sector, but the directives have not fundamentally improved access. March 2021 directives included restrictions on imported items that could be paid for using FX from "diaspora accounts" and changes to "export retention account" rules — namely,

an increase in the amount of earned FX that exporters can retain indefinitely without converting to Birr and a significant change requiring immediate conversion of 55% of earnings (rather than within a 28-day period). Overall, these changes have aimed to target FX use from these accounts to uses that will generate more foreign exchange, but these changes have only impacted FX availability on the margin and may be subject to abuse under incomplete oversight. The central bank has also issued other directives toward this objective, including allowing banks to borrow FX from willing foreign banks. However, these changes have not altered the overall equilibrium of severe foreign exchange shortage reported by most sectors of the economy, long delays for foreign exchange access in the queue system, and a high parallel-market premium for foreign exchange. The surrender requirement continues to be the key mechanism for the government to secure FX access at the expense of the private sector, and our interviews with private commercial banks suggest that this is the banks' biggest challenge.

Monetary Policy**:** *Actions remain partial and have outpaced results across the detailed objectives — gradually reduce direct advances to the budget and contain the growth of reserve money; introduce market-based monetary policy and liquidity management instruments, such as term deposits (non-tradable) and certificates of deposits (tradeable); make transition to interest rate based monetary policy as the effectiveness of quantitative monetary policy targeting will inevitably decline with increasing monetization.*

The transition to interest rate-based monetary policy has not advanced at the pace envisioned. Incremental steps have been taken to lay the foundation for a monetary policy transition, but the transition cannot take place until the need for both financial repression and monetization has been removed. Currently interest rates are not freely determined by the market and given persistently high inflation, real interest rates are negative, which is in effect a tax on savers with bank deposits. This goal requires not only financial sector deepening and a reduction in financial repression, which have both seen progress, but also further structural changes. So long as the macroeconomic system continues to exhibit fiscal dominance with monetization of the deficit, the envisioned transition to inflation targets mediated through interest rates will not be able to move forward. Advances from the NBE to the government continued to persist through the first year of HGER but have reduced in scale since. However, past patterns of monetization may be set to return, especially in the context of fiscal shocks from COVID-19 and the conflict. The fiscal deficit target of 3% of GDP may not be sufficient toward these ends under current conditions of government access to capital markets. Strengthening NBE's capacity remains a top priority. The NBE has not expanded the capacity of its technical departments as envisioned at the start of HGER. Multiple stakeholder interviews pointed to this as a key area for improvement, in hiring key, permanent positions with attractive salaries that will retain talent. There is agreement that building capacity cannot be an afterthought for these objectives, it must instead be core to the HGER approach.

State-Owned Banks: *Actions far outpace results on the objective to unravel the CBE-SOE debt nexus to improve the financial viability of CBE. An assessment could not be made on the objective to enhance the capacity and sustainability of DBE.*

Ethiopia's state-owned banks have accumulated large imbalances that HGER aims to address, as well as filling capability gaps. State-owned banks are impacted by HGER's overall SOE reforms but are also the subject of targeted actions. Some key actions taken to address the imbalance of the much larger Commercial Bank of Ethiopia (CBE) are too early to be fully evaluated, with numerous details of the strategy left to be developed, but several intended actions have been initiated. The establishment of Liabilities and Assets Management Corporation (LAMC) is an important step for SOE reform. The move is intended to de-link the Commercial Bank of Ethiopia (CBE) from legacy SOE debts that have proven difficult to service. The creation of LAMC is a strong action that underscores the government's commitment to this objective of the HGER agenda. The LAMC approach also anticipates the mobilization of new resources, including privatization proceeds to build the asset base of the corporation that have not yet been realized. The LAMC approach alone will also not completely "unravel" the CBE-SOE debt nexus for a few simple reasons. First, by design, LAMC does not completely free CBE from carrying SOE debt in its balance sheet and thus ultimately benefits to CBE will only accrue when debts are serviced or paid off, which would amount to a liquidity injection. The development of the asset side of the corporation, including the "ringfencing" of privatization proceeds for this purpose is critical. Second, LAMC does not address the generation of new SOE debt through unsustainable borrowing via CBE. Other SOE reforms are underway (discussed previously), but these reforms are not yet ensured to close off future debt problems.

Financial System Deepening: *Complete actions and results in some areas — repeal the NBE Bill Purchase Directive; operationalize a competitive T-bills market — and significant actions and results on one other area — build analytical capability of NBE's Credit Reference Bureau. Partial actions, which have outpaced results in other areas — facilitate the development of inter-bank money market; establish a stock exchange and secondary bond market. Insufficient information to evaluate the final objective to promote financial inclusion.*

Progress has been made in repealing aspects of financial repression and introducing a T-bill market, faster than expectations, though deficit financing still depends on financial repression. Continued development and expansion and deepening of financial markets was envisioned as part of HGER. As opposed to the other four areas, the broader banking system has not faced similar problems of growing imbalances over the last decade or more. The private banking system has expanded rapidly, providing growing numbers of individuals and businesses with access to credit. This growth of the banking system has come with an increase in the money multiplier. Objectives under this pillar are primarily aimed to deepen the system to allow for a gradual transition from a system based on financial repression (through negative real interest rates), to a market-based system where interest rates can be used to implement monetary policy and where businesses and individuals have access to a larger variety of markets in which to invest and to access capital. These objectives have tended to move forward without hitting major constraints. The repeal of the NBE bill requiring that banks purchase NBE bonds equal to 27% of their assets was a significant step that occurred early in HGER implementation. This removed one key mechanism of financial

repression and allows banks to manage liquidity more freely and allocate resources more efficiently. This action is complete, but banks report still being more constrained by the surrender requirement, which limits their efficient intermediation of foreign exchange.

The creation of a competitive T-bill market has progressed faster than many experts had expected, as a strong step toward independent monetary policy. By the fourth quarter of 2020, the market was buying short-term (1-month and 3-month) bills as well as medium-term (1-year) bonds, with the interest rates on issued bills steadily growing. Compared to the inception of the T-bill market, when rates were still negative in real terms, interest rates on newly issued bills are now positive in real terms. Other actions, including establishing an inter-bank money market, stock market, and secondary bond market remain partially executed but appear to be largely on track given that they were envisioned for the later periods of HGER.

Takeaways of the Review of Pillar 1

Macroeconomic reforms have the central focus of HGER actions; yet progress remained highly uneven by March 2021. Actions have advanced further in areas of the T-bill market toward the goal of creating more independent monetary policy. It remains unclear which actions were never achievable in hindsight given the shocks that transpired and which areas could have seen stronger progress in results under a different sequencing of macroeconomic reforms.

Reforms have fallen short most on the most binding problems of FX imbalances and inflation; moreover, the a strategic window for a bigger move to fix the underlying source may have closed. Major steps have been taken to accelerate the crawl of the exchange rate to reduce misalignment. By not creating a new policy to align exchange rate movements with the need to monetize fiscal deficits, however, the FX scarcity remains binding on firm output and the black-market exchange rate has reached new peaks since HGER implementation. High-level officials gave the macroeconomic pillar sufficient bandwidth; ultimately, coordination has not been achieved to align exchange rate policy with monetary policy and fiscal policy, as monetary policy is ultimately determined by fiscal policy in the context of fiscal dominance. Significant capacity gaps remain in key domains of macroeconomic management to ensure the success of these reforms.

The competing nature of the macroeconomic goals, where achieving one goal may worsen others, calls for the need to focus on sequencing reforms. HGER is a major advance in getting the list right on the policy goals and the implicit distortions being targeted by reform. By lacking a clear problem definition and theory of change, the reforms are missing the shared vision among officials as to the priority sequencing among the five areas of reform. By moving to eliminate the means of financing fiscal deficits before easing the deficit itself, the areas of reform progress have made the other, binding elements more difficult to achieve.

Pillar 2: Structural Reforms – Rebalancing the roles of the public and private sector

Structural reform objectives included in HGER are seen as key enablers of macroeconomic and sectoral pillar outcomes. State-owned enterprises (SOEs) have been a major contributor to debt accumulation, where reforms aimed to rationalize SOE to put them on a footing to generate financial value. Beyond debt, many public enterprises were not delivering on their core mission, leaving gaps in public goods and services that create challenges for sector growth. The strategy includes widespread reforms to improve the business environment and investment climate, shifts in trade policy largely through multilateral (WTO) and regional (African Continental Free Trade Area, AfCFTA) agreements, and a focus on building state capability, especially coordination between public sector institutions. The reforms also target improvements in delivery of public goods and services — as well as improvements in financial sustainability — across three large sectors historically oriented around SOEs: logistics (ESLSE), power (EEP & EEU), and telecommunications (Ethio telecom). The review is conducted for each objective in March 2021 across six areas: (i) ease of doing business; (ii) trade policy; (iii) public institution capacity; (iv) logistics; (v) power; and (vi) telecom.

Ease of Doing Business: *Strong actions taken with weak results observed on "speedup ongoing reforms to ease constraints to doing business"*

Despite steady progress on intended reforms, it is not obvious how many of the reforms are lifting key economic constraints. Government and development partners agree that much has been accomplished but that there is also much work left to do within the Prime Minister's Doing Business Initiative. Iterative reporting of this initiative shows the power of having this objective be a top-level priority with strong institutional mechanisms in place to ensure consistent and continuous delivery. By 2020, Ethiopia's overall Doing Business score improved slightly, driven by a large improvement in "dealing with construction permits", smaller improvements in "starting a business," "getting electricity," and "registering a business." Stakeholders also note numerous reforms that have not yet been captured and ongoing progress. The expected impact of most of these reform efforts has not been explicitly identified; a common measure of impact, FDI, has stagnant in dollar terms and collapsing as a share of GDP in the three years preceding the pandemic. There are few observed signals that these reforms will be game-changing, despite clear commitment and strong institutional structures for implementation.

The fact that the Doing Business reports have been put on hold due to recognized issues with data irregularities present a moment to shift government priorities toward a context-driven approach to deliver impact. The framework suffers from a considerable weakness in its own theory of change that broad-based reforms across the Doing Business Indicators will enable greater private investment. The experience of countries, including many that have made reforms guided by the World Bank a priority like Ethiopia, is that private investment is often held back by issues that fall outside standard Doing Business reform areas and that, even within the reform areas, real change to the business environment is often more complex and context-specific than can be captured by

standardized legal and regulatory measures. A more targeted approach to addressing business environment constraints could go together with targeted investment promotion by the Ethiopian Investment Commission, where the issues that undermine the completion of diversified private sector investment guide the prioritization of business environment reform objectives.

Trade policy**:** *Partial actions taken with partial results observed on "ease tariff and non-tariff barriers to international trade"*

Actions have been limited to a few, early – landmark – steps. Initial steps included restarting official talks toward WTO accession for the first time in a decade and ratification of the African Continental Free Trade Area (AfCFTA). Experts to the process of AfCFTA development also note Ethiopia as a leader in creation of AfCFTA. However, while international meetings were impacted by COVID-19, there are many dimensions of domestic trade policy that appear underdeveloped in relation to what is needed for Ethiopian firms to benefit from new market access. Each of these agreements will require a substantial build-up of trade policy capacity within the government and eventual legislation across a range of areas to align domestic policy with these multilateral agreements. There has also been little or no collaboration with the private sector and industry groups to prepare for market access. Firms will need to develop strategies to maximize the opportunities of new market access and, where needed, prepare for greater competition. Supportive government actions can be targeted through public-private coordination.

One bright spot in Ethiopia's export performance over the last several years has been its goods exports to the United States, which are growing and diversifying even as Ethiopia's overall goods exports have tended toward stagnation. These exports benefited from the African Growth and Opportunity Act (AGOA), ratified in 2000 with a renewal in 2015 that added important technical advisory services, which provides preferential trade access to the U.S. market. That AGOA started in 2000 but only saw a significant in exports to the U.S. in 2016 makes clear that it can take many years for the capabilities of the private sector in Ethiopia to emerge to take advantage of new market opportunities, including limited focus on preparing customs systems for AfCFTA requirements. Few government actions are evident that would help accelerate the private sector to take advantage of new markets. Meanwhile, the defining constraint reported by exporters and non-exporters continues to be barriers to timely access to imported inputs. Tariff and non-tariff barriers on imports (rather than in export markets) contribute negatively to this problem. If FX controls remain in place, the potential for integration will remain constrained. Overall, these objective warrants both accelerating planned actions and new, critical margins for action. However, with AGOA access revoked for Ethiopia at the start of 2022, new challenges have emerged.

Public institution capacity: *Strong but not complete actions and results on "improving governance and capacity of public institutions"*

Progress on digitizing public services masks mixed progress on larger areas of public sector capability. Over 80 legal and administrative reforms have been undertaken to reduce the time, cost,

and procedural hurdles businesses face. Some noteworthy new efforts include: a pilot Electronic Single Window (eSW) implemented across 28 government institutions; piloting e-filing and e-payments of taxes for larger taxpayers; online trade registration and licensing at scale; and important changes to improve service in tax and customs administration. Interviews revealed a consistent view that HGER and the culture of the current administration have led to substantial improvements in (horizontal) coordination across ministries, (vertical) coordination between levels of government, public-private problem solving, and in linkages with education system and vocational training organizations. This reflects impressive progress. However, interviewees are also quick to point out that there are long-standing weaknesses in all these areas that make this progress only partial versus what is needed. There is a view that coordination is strongest around particular projects and initiatives but needs to be broadened into all government actions. As such, there is a noted need for more accountability mechanisms. One noteworthy weakness is the need to expand capacity for the government to absorb technical support. The sheer number of major, landmark changes leave high-level decision-makers spread very thin as they are unable to prioritize everything simultaneously. Senior officials, such as Ministers and State Ministers often need to devote significant attention to driving forward any reforms that represent large shifts from past government orientation. There is a prevalent view that technical positions are overly politicized, resulting in key gaps in positions that are vital for strong implementation of top-level priorities. This results in some reform areas losing momentum over time even after hard-won policy changes.

Logistics: *Strong but not complete actions and results on "ensure efficient logistics services"*

Historic changes have occurred, with opportunities to accelerate the benefits. These actions aimed to improve the overall functionality of logistics, which are just starting to benefit the whole of the economy. Stakeholders identify steps that can be taken to accelerate the benefits of the shift to competition and international involvement in the sector. The prevailing strategy that emerged from HGER actions was to maintain public ownership of Ethiopian Shipping and Logistics Service Enterprise (ESLSE) but to open the sector to private competition. This implies a new focus on transforming ESLSE to provide quality services that may not be met by the private sector. This strategy has manifested in the liberalization of dry ports, warehousing, freight forwarding, and road transport. It has been strengthened by the new Investment Law allowing full participation of foreign companies in some parts of the logistics sector and joint ventures in others. The National Logistics Sector Policy has been launched and the National Logistics Council has been established.

Stakeholders interviewed, in agriculture and manufacturing sectors, report enthusiasm for changes in the sector but, so far, only limited results in the form of new products, services, market access, and the overall strengthening of value chains. The expectations are that these sectors are set to benefit, but remaining actions are likely needed before these benefits will begin to fully materialize. Based on available evidence, progress has only been partial toward key sub-objectives: (1) enhancing logistics sector competitiveness and efficiency; (2) enhancing coordination across the logistics sector actors; and (3) digitizing logistics and related services. It is important that government prioritize the remaining steps of this reform area as remaining actions

may face pushback from special interests. In the absence of strategies that anticipate this, such opposition may effectively undermine the benefits of actions taken to date.

Power: *Strong but not complete actions and results on "improve power reliability and access"*

While reforms remain in diagnostic phase, important progress made on some tariff adjustments and performance improvements. The power sector required careful diagnostics before determining what steps would be needed to improve service delivery, coverage, and sustainability, as well as what role, if any, privatization should play in the sector. The Ministry of Finance is still finalizing the sector diagnostic, as this was phased in later than those of logistics and telecom. Although the privatization reform strategy is still under development, there have been significant government actions taken to improve the functioning of the electricity system. Actions taken are in line with an understanding of system-wide weaknesses that is widely shared by the government and development partners. A multi-year tariff adjustment is now well underway to move to cost-reflective tariffs over time, and initial adjustments have proceeded without issues. There continues to be a strong push toward completion of major hydropower investment to increase electricity supply as well as strategies to reduce transmission and distribution losses.

Reliable power remains a key constraint faced by the private sector and one that is important to overcome to diversify and rapidly grow exports. Evidence, including responses from interviews conducted as part of this review, continues to point to power and telecom as the two most widespread infrastructure constraints to business activity. Improving the quality of these two public services in combination is important for the expansion of the digital economy, whereas power is more fundamental for many manufacturing opportunities. These infrastructure constraints also remain very problematic for some exporting agriculture industries, including floriculture and horticulture, per stakeholder consultations with the Ministry of Agriculture. Companies that struggle to meet their orders when relying on these public services alone must bypass the constraint with costly alternative sources of power and telecommunications access. Line ministries have undertaken efforts to support firms in these areas by subsidizing costs, which exemplifies the continued costs of the underlying constraint. Renewable and off-grid technologies are rapidly developing globally and scaling in Ethiopia. Overall, the latest available reporting is that 48% of Ethiopians have access to electricity (36% from the grid and 12% through off-grid technologies), which shows that much progress remains to reach goals for household access to electricity.

Telecommunications: *Partial access and weak results on "implement the telecom sector reform"*

Delays in reforms are now binding on overall success of HGER. There are key differences in implementation progress for telecom versus logistics and power. Telecom reforms were widely viewed as the priority reform of public services under HGER. The diagnostic phase was prioritized for telecom and arrived at a clear strategy to partially privatize Ethio Telecom and to issue two licenses to establish competition in the sector. This was a reasonable approach, but one that may have necessitated more subsequent steps than initially envisioned. This approach also created the

need to determine the phasing between issuing of licenses and partial privatization of Ethio Telecom, and uncertainty over what monopoly powers Ethio Telecom would retain, which may have caused public confusion at points in time. The process of issuing licenses proceeded with a high level of legitimacy and technical professionalism, which led to many expressions of interest by global telecommunications companies. Meanwhile, the Ethiopian Communication Authority (ECA) was established and quickly made progress in issuing nine regulations and directives. However, eventual bids on telecom licenses were fewer and lower than expected based on expressions of interest, which has been attributed to restrictions in the allowable business activities of licensees, including in the field of mobile money and finance. In retrospect, it could be argued that the strategy was too protective of some monopoly powers at the expense of improvements in service quality and financial returns of licensing.

Delays versus expectations on this objective have had substantial implications for HGER overall, affecting both the macroeconomic and sectoral pillars. The issuance of telecom licenses was expected to be a key source of foreign exchange and to be channeled into LAMC to pay down legacy debts. Given that the persistent foreign exchange imbalance and perceived debt distress have been hurdles for achieving the goals of the macroeconomic pillars, delays and low bids have been a headwind for macroeconomic reforms under Pillar 1. Similarly, several margins of private sector growth are constrained by low-quality telecommunications services. Improving quality is essential to success in ICT and Digital Economy objectives, but it is also an important improvement to improve competitiveness in other sectors on Pillar 3, including agriculture, manufacturing, and logistics. As mobile technologies are revolutionizing many aspects of the economy and daily life in other countries in East Africa, this gap looms large in Ethiopia. This is likely a major constraint to FDI overall, as Ethiopia competes with countries that are viewed as leaders in this area, like Kenya. This gap is growing more important than ever in the aftermath of COVID-19, the rise of remote work, and the growth of digital value chains across countries.

Takeaways of the Review of Pillar 2:

Progress has been made across the objectives, but results have lagged actions in a few areas, notably overall ease of doing business reforms and in the telecom sector. On trade reforms, historic initial steps were taken but more action steps would have been expected by this point if Ethiopia was on track to fully benefit from the new AfCFTA, while Ethiopia has now lost AGOA trade access to the U.S. market. State capability progress is mixed with stakeholders identifying clear improvements in many dimensions of government but a lack of change in others. The privatization agenda has seen partial progress, as it proved more complex than mere announcements of SOE privatization. Initial goals were narrowly defined (privatization vs. a differential understanding of their public value) and anticipated timelines were likely unrealistic given the complexity of effective reform. Although progress might be slower than envisioned, it is also clear that actions taken regarding these SOEs have led to carefully developed strategies that ultimately align with improvement in these key services. In a few cases, including telecom, actions still could have proceeded faster and may have achieved better results.

Pillar 3: Sectoral Reforms – Unlock new and existing growth potential across sectors

Sectoral reforms aimed to strengthen five identified growth engines across agriculture, manufacturing, mining, tourism, and ICT. These sectors range from the nascent future sectors (tourism, ICT, mining) to the promised sector of the past decade (manufacturing) to the dominant sector for employment (agriculture). Not surprisingly, reform efforts vary on their ambition, focus, and specificity. Midway through HGER implementation, it was not envisioned that growth potential in the sectoral reforms would be fully realized, but rather that progress would be made toward addressing key constraints. Expected impact was hoped to include early signals of new investment, higher productivity, and accelerated job creation in these sectors. Export gains are also of particular importance. At the start of HGER, it was clear that exports were falling as a share of the economy, which was far out of line with targets for previous national strategies. Reversing this trend of declining exports as a share of GDP was identified as an essential element for supporting sustainable growth in the future. Specific objectives within the sectors rarely target export goals directly. The review is conducted for each objective in March 2021 across five sectors: (i) agriculture; (ii) manufacturing; (iii) mining; (iv) tourism; and (v) ICT.

Agriculture: *Varying progress across objectives ranging from near complete actions and results for "accelerated growth in agriculture production with a focus on strategic crops for import substitution and exports", to partial actions and results for "establish effective linkages between agriculture producers and commodity markets as well as the commercial value chain", to a large gap between actions and results for "modernize livestock production through improving veterinary infrastructure and establishing linkages with other industries" and "develop a legal framework for agriculture-focused financial service." Finally, limited actions and results to "develop legal frameworks to enhance land use and administration and allow farmers to lease land use rights."*

The agriculture sector overall has exhibited strong resilience to COVID-19 as well as changing rainfall patterns, the 2019–2021 locust infestation, and other challenges. Looking across the original objectives of HGER, we find a wide range of outcomes so far, marking both successes within this sector and areas for improvement. HGER has helped to coordinate actions, including a strong and adaptive set of responses to COVID-19. In many cases, this response has accelerated opportunities for more growth and diversification in the sector. Smallholder farmer productivity increased impressively as 1.5 million jobs were reportedly created. Major productivity gains were driven in part by successfully scaling initiatives like commercialization clusters to reach 2.6 million farmers, and the input voucher program, which provide fertilizer, seed and inputs to 7.2 million farms, a 50% increase. Taxes and duties were lowered on 400 agricultural inputs and equipment to incentivize use of modern inputs and mechanization.

There is significant untapped opportunity for diversification, overcoming quality hurdles, and expanding market linkages in the sector. Commercialization clusters have proven successful in promoting improved technologies and strengthening market linkages, which has driven

productivity gains in targeted crops. Nevertheless, the clusters cover a narrow range of crops when considering the potential of the agriculture sector. Major investments in wheat production, particularly lowland irrigation, aim to accelerate import substitution efforts. Despite COVID-19, agriculture exports rose by 12%, including gains in the four largest products. However, it remains clear that exports are under potential and diversifying slowly, with much of these gains driven largely by market dynamics rather than changes to supply. Continued challenges in livestock sector performance persist despite a push in inputs and animal health services. Increased inputs and veterinary services for livestock has not yet translated into gains in productivity, production, or incomes, as they have for crops. Given the important contributions of livestock to millions of Ethiopian livelihoods, the lack of success of an input-driven strategy calls for the need to rethink strategies toward livestock modernization and crowding-in know-how of private sector actors.

Reforms to the legal framework for agriculture services has been slow moving. In part, this is due to progress made in opening up finance to agriculture, including new financial service offerings such as the rapid uptake of the Input Voucher System at scale. This expansion of finance to agriculture under the existing system has de-prioritized the need for a legal framework for agriculture-focused financial services. Other actions such as allowing farmers to use movable assets as collateral require that livestock must be traceable, which is not in place in many areas of Ethiopia, resulting in low uptake. Ultimately, access to inputs is increasing and less of a constraint than access to credit for farming activities or services remains a challenge due to low access to finance and foreign exchange shortages. Legal reforms to land use to allow for leasing has not resulted in any announced reform, if recognized that advancing reform, including any required constitutional changes to land laws, would not be expected by the midpoint. The contract farming law is under review, while officials recognize efforts like the commercialization clusters have succeeded in bypassing legal constraints to land consolidation through horizontal aggregation. In essence, efforts have worked within legal constraints, rather than reforming the constraint itself, as legal reforms have hit roadblocks that would require a greater push from the top if they are to be achieved.

Mining: *Generally strong actions and results across the objectives — strengthen geological information accessibility and promotion of the sector; develop policies and institutional capacities to create a sustainable and inclusive mining sector; familiarize artisanal and small-scale mining; enhance local community engagement; and reduce incentives for contraband trade.*

Significant progress in reforms to the legal framework. Reform progress has included the introduction of more than ten mining policies and legal frameworks, along with clear progress in geological information availability and promotion efforts. Coordination around reform objectives in this sector is noteworthy. Prioritizing mining in HGER has led to new mineral discoveries that otherwise may have been reprioritized with COVID-19. Access to geological information has begun roll-out of a new modern portal with high-quality geoscience information for investors, including availability of minerals, economic feasibility studies and results of explorations. Regulations on mineral trading have been further simplified through a single window service

delivery system, with information on prices, quality assurance, value addition, and export services. Steps have been taken to include local communities into the mining sector through the National Artisanal, Special Small-scale Mining strategy and a Local Content Policy framework under development. Early successes include connecting chemical and construction material companies with local supply of six priority minerals, including kaolin and salt. Nevertheless, community engagement and small-scale mining strategies have not been fully institutionalized and require continued action to ensure equity across geographies, product markets and investor needs.

Despite major advances to improve the legal framework, information, and community engagement, there are not yet clear indications that FDI in the sector is set to accelerate to develop these resources. At this point, it is important not to assume that strong actions will necessarily result in higher levels of mining investment and instead focus efforts on strengthening mechanisms to learn from potential investors to identify and resolve remaining constraints. It is also important to recognize that strong actions may have resolved an initial constraint only to bump up against a new constraint, including the import-intensive nature of the sector in the context of scarce foreign exchange or missing capabilities for the small-scale industry to adopt new technologies. Conflict and insecurity in Ethiopia are very important constraints affecting this sector, given the way they amplify mining investment risk. In terms of reducing incentives for contraband trade, actions and results have been particularly promising for gold, which suggests that use of similar approaches could be deployed for other products that have seen high levels of informal trade in recent years.

Manufacturing: *Varying progress across objectives but generally partial actions and partial results for — "revisit and enhance the role of industrial parks in manufacturing sector development", "strengthen the backward linkage of emerging manufacturing value chains and promote import competing industries to leverage large domestic market size", "enhance productivity of firms and workers", "strengthen manufacturing support institutions" — but actions that far outpace results on "deepen Ease of Doing Business initiatives" and limited actions and results to "develop an industrial relations framework to achieve fair pay and minimize disruptions."*

Industrial Park output remained well below targets as of early 2021, yet adaptation to COVID-19 saved jobs. Ethiopia has struggled to expand manufacturing output and manufactured exports over the last decade, falling well behind the goals of each of its previous national strategies, the Growth and Transformation Plan I and II. HGER maps out direct objectives to try to reverse this trend, but also recognizes that manufacturing growth will depend on macro and structural pillars to address key constraints like access to foreign exchange and imports, power reliability, and logistics services. For the manufacturing sector, HGER actions aim to set the stage for future take-off, with no expectation of realizing that potential within its three-year implementation.

Progress has been partial across most HGER objectives for manufacturing, along with positive adaptation to respond to impacts of COVID-19 on the sector. COVID-19 has had acute impacts on the manufacturing sector in Ethiopia — both manufacturing for export and domestic consumption.

Systematic phone surveys conducted by the World Bank showed that firms were affected by reduced demand for their products and by reduced supply of labor, but also that these effects were temporary for firms that survived. Meanwhile, COVID-19 firm surveys continued to show a fundamental constraint faced by many manufacturing firms in accessing imported inputs due to foreign exchange scarcity and controls in place. Unlike COVID-19, this constraint will persist until macro reforms can achieve foreign exchange balance.

Actions to strengthen industrial parks have been partially completed, but adaptation of the parks in response to the pandemic was commendable. This is not the first period for which industrial park capacity has failed to meet targets, as certain actions were postponed with the pandemic, but progress must accelerate to achieve key economic targets of HGER. The review also finds that industrial park strategies must account for varying constraints and opportunities in each park, rather than the current one-size-fits-all approach. The responsiveness of industrial park related ministries and agencies led to a rapid pivot at the onset of the pandemic to manufacture protective equipment, sanitizers, and chemical products. According to the government, industrial parks did not have to lay off workers due to the pandemic. Efforts to develop an industrial relations framework were understandably postponed with the pandemic. A burgeoning training "ecosystem" has resulted from nascent efforts to expand vocational training to create a pool of skilled labor for manufacturing. Significant progress was made in advancing reforms to improve Doing Business indicators, including revisions to the commercial code, insolvency regulations, and allowances to use movable property as collateral for finance. The evidence that these reforms were constraining manufacturing growth remains weak, against the clear evidence of the foreign exchange shortage as a binding constraint that has not eased. Establishing backward linkages between agro-industrial parks and local agricultural and mineral supply has new examples of success but remains below potential. Connecting value chains on avocado oil has benefited 80,000 farmers; in other sectors, the quality upgrading process has been necessarily slow, as it requires significant learning by doing, while the scarcity of foreign exchange has prevented technological leapfrogging and slowed progress.

Tourism: *Partial actions taken across objectives but results undermined by the COVID-19 pandemic — promote tourist sites through marketing, branding, and packaging based on customer segmentation; promote stopover and meetings tourism; develop and improve the attractiveness and access to tourist; modernize the standards for tourism and related services; strengthen the linkage to agriculture and creative sectors.*

COVID-19 proved an unprecedented shock, rendering targets unrealistic. HGER aims to improve both supply of tourist attractions and expand tourism demand through promotion activities. Prior to the pandemic, tourism traffic to Ethiopia was well below potential and had been declining recently, despite the rapid growth and reach of Ethiopian Airlines. Although there was a large uptick in tourism receipts in 2018, largely attributed to easier entry for African passport holders, tourism remained underdeveloped, with implications for macroeconomic imbalances, particularly the persistent foreign exchange shortage.

Tourism has been hit by COVID-19, impacting tourism actors at all scales, in all regions, and across value chains, with resulting impacts on tourism-dependent communities. HGER has proven helpful in supporting rapid development of a tourism recovery strategy and strengthening vital collaboration between tourism stakeholders, including sector associations. The tourism recovery strategy has included mechanisms to support vulnerable communities, soft loans, and a focus on ensuring readiness of tourist sites for an eventual return of global air travel and tourism. While stakeholders allude to struggles in implementing parts of the recovery strategy, this is to be expected under the exceptional shock. It is noteworthy that actions have been taken in important planned areas of HGER toward modernizing tourism promotion, importantly through drawing on strengths such as the reach of Ethiopian Airlines. The strategy to develop 59 sites to international standards also continues to advance to be ready with recovery of tourism. Targeted marketing strategies (like stopover tourism) may remain important for early recovery of the sector. It is impossible to assess progress toward any objectives related to increasing the demand side of tourism in Ethiopia at this point amidst an unprecedented shock to tourism demand.

ICT and Digital Economy: *Several objectives with partial actions and results — promote the use of ICT for modernizing the civil and public services to enhance efficiency and effectiveness of service delivery; investing in ICT literacy and advanced trainings; expand ICT infrastructure throughout the country and ensure it is accessible. Several other objectives where actions far exceed results — promote e-commerce and digitization of the financial and logistic sectors; pro-innovation and ICT regulatory and business environment; promote the export of IT-enabled services.*

The ICT and Digital Economy sector is a forward-looking growth engine but also plays a key connecting role in the HGER agenda overall. ICT is a key enabler of productivity gains across other sectors and of improvements in public sector service delivery and public-public coordination. However, ICT improvements rely heavily on improvements in power and telecommunications access and quality. Implementation of actions has been steady, but progress remains at an early stage across most objectives. In several areas, actions have not brought about expected results for identifiable (non-pandemic) reasons. COVID-19 has significantly impacted certain actions that required physical interactions, like training programs, but has also reinforced the importance of this sector given global shifts toward digitization of business activities, including increased use of online sales and remote work. HGER has resulted in a significant expansion of e-government to cover 176 services. New E-Commerce proclamations built new public-private coordination to address continued regulatory hurdles. Results have been more limited in entering new business process outsourcing services, despite creating the ICT Park. Where actions have outpaced results, the cause has been related to weaknesses and gaps in initial foundational steps (which can be addressed as the government learns from initial actions), new industries requiring new public services, and the lack of full progress on structural objectives (in telecom, power and logistics).

Takeaways of the Review of Pillar 3:

While each pillar saw varied progress, the sectoral strategies most experienced the all-or-nothing gamut of reform. The unforeseen shock of the global pandemic waylaid even the best plans of the tourism sector; conversely, several results in agriculture exceeded expectations. Sectoral reforms were not immune to the delays or limited progress with structural and macroeconomic reforms, in telecom for ICT, or electricity for manufacturing. Slow progress in achieving the manufacturing sector continues to limit Ethiopia's success in structural transformation. While adaptation of industrial parks in response to the pandemic was commendable, greater attention should be given to accelerate progress in manufacturing coming out of the pandemic.

Sector reform strategies faced greater challenges in design, as efforts were too narrow to serve the need for transformation in Ethiopia. Many sectoral objectives achieved full results even without enacting all the planned actions, for example, the lack of a new law on land reform and yet agricultural productivity gains exceeded targets. This is a sign of flaws in the theory of change, where the planned actions were not binding on achieving the intended result. Elsewhere, several objectives covered simple problems, where regulatory fixes were able to achieve the intended outcomes. Other objectives lacked the ambition necessary to achieve the transformation Ethiopia requires, for example, where achieving full results in agricultural productivity and output have still failed to expand exports to serve FX shortages. The mining sector faces challenges in design. A successful mining sector, in the short run, would require greater imports to develop the mines. Moreover, any FX windfall from mining exports would take several years, if not decades, to come to fruition, while worsening FX scarcity in the near term. A clear problem definition for the overarching HGER framework would help understand how the mining sector reforms aim to achieve growth without causing problems elsewhere.

Key Design and Implementation Problems in HGER as of March 2021

The real-time midterm review of HGER centered in March 2021 underscored two types of challenges in achieving planned actions and results: design and implementation problems. The review concluded that nearly all objectives (92%) have achieved at least partial actions, including one-third of objectives with complete actions. Yet results and signals of results to come have not materialized in all cases, as only two-thirds of objectives have achieved full or partial results that re more-or-less in line with actions taken. The remaining one-third of objectives are important to reflect because actions taken are far exceeding results and signals of results, indicating potential improvements in theories of change moving forward. Figure 5.2, shown earlier in the chapter, summarizes where the objectives fall in a matrix of actions and results. This approach allows us to understand HGER performance across three types of progress. The first type of progress is the completed objectives, which applies to the nine HGER objectives as of March 2021. A second set of objectives show evidence of potential implementation problems where actions are not yet complete and may hold back completion of other objectives. The majority of HGER objectives classify in this implementation problems type, but with just four objectives showing potentially

critical implementation issues. The final type are design problems where actions have been completed, but the expected results are only limited or are yet to be seen at all. These 15 objectives are important for policymakers to re-visit to avoid continuing to take actions that are not achieving the intended results.

We can also observe patterns when looking across the detailed objectives. Many objectives that have been fully completed reflect non-complex problems (e.g., directives issued or removed, gold pricing regulation changes resulting in surge of gold exports). These may have required attention and focus from leadership to overcome any entrenched opposition to change, but the link between actions and results were straightforward. Others are the result of HGER-driven coordination across stakeholders and scaling of innovative tools and new technologies (Agricultural Commercialization Clusters, new focus on vertical coordination to address local challenges in the mining sector). These results offer possible lessons for other objectives where observed progress is slower. First, non-complex problems can be undermined by narrow stakeholder interests that oppose reform and where focused leadership is needed to overcome such opposition. Second, when problems themselves are complex, individual leadership is not enough. HGER actions must catalyze intensive coordination across stakeholders to tackle more complex problems.

Lessons can also be taken from objectives that have faced implementation challenges. For these objectives, it is important to explore whether reform progress is steady and on track or is it stuck after hitting a constraint that requires attention during the remainder of HGER to overcome. Many of these objectives may need an extra push. For a small minority of objectives, actions taken have been very limited, raising the questions of whether these objectives are or should remain priorities. For objectives where progress in actions was weakest, two underlying issues loom large:

- **Ministers and senior officials cannot focus on all priorities at once.** Where actions involved legal or regulatory changes with diverse stakeholder interests, actions tended to be either strong or weak — but rarely fell in between — reflecting their level of priority amidst limited bandwidth of senior officials. Moving forward, key priorities could be reassessed across weaker areas of HGER progress to guide where ministers and state ministers should exercise their convening authority, recognizing that not everything can be a priority at once.
- **There are also key gaps in permanent technical positions.** Many technical positions are filled based on political appointments rather than based on expertise, and compensation is viewed as insufficient to attract and retain top talent in permanent positions that are needed for continued problem solving and government innovation. HGER relies on external senior advisors in temporary positions and external support from development partners and consultants. This may be necessary in the short-term, but limits absorption of technical support and long-term state capability building. Progress could be strengthened in priority areas through explicit actions to introduce permanent government positions to address key capability gaps.

Finally, addressing design problems is of critical importance. For areas where actions are not leading to anticipated results, adaptation is needed. In the middle of HGER is the ideal time to recognize these issues and ask whether the direction of actions needs to change in order to achieve the envisioned results. For some such objectives, there is evidence that the problem was more complex than anticipated, which may require coordinating with additional institutions or a new theory of change. For other objectives, progress may have been more dependent on completing actions in other areas. In these cases, updated strategies and careful sequencing of reforms will be needed for HGER to succeed in its overall goals. Some of the 15 objectives that fall into this category are dominated by COVID-19 impacts. For these, temporary response plans continue to be needed. For areas where problems run deeper than COVID-19, two key constraints appear to be most pressing, making them pivotal areas for accelerating progress:

- **Persistent foreign exchange imbalances** are undermining progress across sector goals, especially in agriculture and manufacturing. Many objectives related to foreign exchange policy have seen substantial actions taken but very limited progress toward improving the FX balance. This also prevents full success in other dimensions of macroeconomic reforms.
- **The lack of completion of liberalization and partial privatization of Ethio Telecom** also undermines transformation in agriculture, manufacturing and, especially, ICT & digital economy. This also leaves a gap in a key envisioned source of foreign exchange.

There were a few additional areas of potential design problems. For a few areas, progress does not hinge on improving FX balance or telecom improvements, yet actions still outpaced results. Focus is warranted on reassessing strategies in areas like the rationalizing SOEs, the priority of improving Ease of Doing Business rankings, and livestock sector strategies.

While there are recommendations discussed throughout this review at the level of detailed objectives, the overall assessment included six recommendations for the remainder of HGER:

- **Adapt macroeconomic policy sequencing** recognizing that continued challenges of FX imbalance and high inflation are driven at their core by monetization of the deficit, which is itself the result of removing deficit financing levers (financial repression and external borrowing) before fully closing the deficit itself.
- **Increase the ambition of fiscal policy objectives and focus on building capacity** and institutions to expand revenues and fully address continued SOE debt accumulation. This is the most upstream imbalance in the macroeconomic pillar.
- **Initiate an integrated approach to exchange rate, monetary, and fiscal policy management** (centered on the dollar-value of net domestic assets and supporting instruments). This is the path to sustainably addressing the parallel market premium for FX.

- **Prioritize leadership's focus on a few key gaps,** recognizing that individuals cannot effectively champion all current priorities at once and that fiscal and forex resources are increasingly scarce.
- **Invest in establishing merit-based permanent positions** where necessary to move forward priority areas where results have been weaker. While this entails fiscal and administrative costs, the costs of not improving in this area are many times larger.
- **Revisit sector actions to expand initiatives that target export diversification**, with a focus on activities today that can catalyze the emergence of exporting industries that are likely to expand and thrive over the longer-term.

Revisiting Policy Options for Accelerating Progress of Homegrown Reforms

The central observation of the midterm review was that overall progress has been substantial, even though many objectives remain affected by design and implementation problems. These problems center on the interdependencies across reforms, where slow progress on critical constraints has prohibited achieving other elements of the reform agenda. The design of the Homegrown Economic Reform agenda reflects a major advance in Ethiopia by targeting the technically correct set of reforms. In turning from design to implementation, the reform agenda underestimated the role of sequencing to the success of reforms due to the critical interdependency of reforms on each other. The review of 2021 indicated that the vast majority of the HGER agenda was feasible to achieve with a newfound focus on reform sequencing but would depend on accelerating two critical components: improving foreign exchange access and moving forward telecom reform.

In the year-and-a-half since, at the time of writing, the severity of the impact of the conflict on lives and food security, as well as on external financing which has worsened macroeconomic imbalances, has resulted in greater disruptions to HGER progress. There has also been a lack of a fundamental change in macroeconomic policy sequencing. When combined with newer external shocks, particularly as the invasion of Ukraine on key commodity prices and tightening global finance to combat inflation, progress on the macroeconomic pillar overall has weakened. This means that the ease of making a 'big fix' to the exchange rate system has narrowed significantly, especially as inflation has risen and foreign exchange for critical imports has grown scarcer. However, macroeconomic policy sequencing improvements are still feasible, as was discussed at the end of Chapter 3.

Given external conditions, the telecom strategy continues to lag, suggesting that a critical earlier time window was missed for this reform area as well. Nevertheless, policymakers must continue to adapt and respond to evolving global demand and appetite for investment rather than be stuck in the past. The guiding priority moving forward on telecom and other SOE reforms should be to improve the quality of these public goods and services for the benefit of all Ethiopians. Accelerating progress in these two areas — addressing the foreign exchange constraint and

improving telecommunications quality — would still have critical positive spillovers on other areas. Toward this end, additional observations are provided here on each of these objectives.

1) Addressing the binding foreign exchange constraint:

HGER sequencing is not aligned to address the FX constraint. Removing means of financing the public sector deficit (external loans and some mechanisms of financial repression) without removing the deficit itself forces monetization and intensifies dual problems of high inflation and FX imbalance. To accelerate the elimination of the parallel market for foreign exchange, nominal devaluation must outpace money creation. With inflation currently very high, it is challenging for policymakers to devalue at an equal pace. Ultimately, exchange rate policy must be set in line with fiscal and monetary policy, by targeting a reduction of net domestic assets as valued in U.S. dollars and managing growth of the money multiplier. This requires either much more rapid devaluation if monetization continues or a coordinated push to reduce monetization and set devaluation higher than the rate of inflation. To fully address the constraint, exports must expand substantially over time to deliver a sustainable increase in FX inflows to pay for import growth. This will require export diversification that builds upon early gains in garments but also the emergence of greater diversity of exports over time. In the shorter term, other sources of FX must fill the gap and the best source of such are grants and concessional loans, which are currently constrained.

2) Improving telecom quality through strategies competition with Ethio Telecom:

Telecom reforms remain a critical priority. It is important to complete license issuance and partial privatization. This will have positive impacts across the rest of HGER that cannot be replaced through other actions. It is therefore important to prioritize human resources toward completion rather than spreading resources too thin toward other privatization-related initiatives at the same time (sugar, rail, power, etc.) The strategic review of telecom sector strategy and professional implementation of competitive bidding for licensing can be viewed as a significant advance in public sector capacity. But the implementation of licensing and partial privatization has faced important tradeoffs that may have been better navigated. Select monopoly powers were retained for Ethio Telecom, which not only resulted in low bids for licenses, but may also undermine the full potential of service quality improvements moving forward. Re-opening the bidding process now would come with significant reputational costs that may work against objectives of future privatization efforts and would further delay service improvements. One lesson for broader state-owned enterprise (SOE) reforms is that strategies should prioritize addressing issues of ineffectiveness in the provision of the public good/service above short-term returns. This is what matters most for the Ethiopian economy and society. The telecom strategic review also shows that there are no one-size-fits-all approaches to addressing SOE problems. It is important to approach each SOE with a central focus on understanding if it falls short of delivering public value and, if so, how public value can be expanded.

Overall, the reform agenda has strong ownership and momentum, but economic priorities have become a secondary priority in the face of conflict. Implementation progress across more than 50 objectives has still been significant, especially given the unprecedented shocks that have occurred since the launch of HGER. Continued sector resilience to COVID-19 can be mapped directly to HGER. HGER has created nationwide focus on the five broad sectors with clarity from the top of government influencing widespread improvements in horizontal, vertical, and public-private coordination. As COVID-19 hit, this focus and improved coordination supported the systematic identification of risks and strong collaboration across stakeholders to adapt in sectors most affected. This adaptation led to the rapid emergence of opportunities that otherwise would have been smaller or missed completely. Across three sectors, COVID-19 adaptation plans helped to: strengthen domestic value chains for several agricultural goods; catalyze emergence and growth in manufacturing of masks, sanitizer, detergents; and improve targeted tourism promotion efforts along with improved health and safety standards in the sector.

However, sector strategies could be strengthened moving forward in their orientation toward key export margins and export markets to better respond to the fundamental issue of an export sector that is too small to sustain Ethiopia's growth process. If Ethiopia is to continue its rapid growth process, a similar focus and coordinated strategies are needed to facilitate rapid growth on existing exports (for example, garments) and on entering new production (i.e., sectors that are not well developed today but could drive future growth). Chapter 4 of this compendium provides a framework and tools to help in these efforts.

HGER's success will ultimately be limited by any continuation of active conflict in Ethiopia. An end to the conflict and the creation of a durable peace appears to be necessary conditions for leveraging international financial and foreign exchange support to overcome the macroeconomic challenge discussed in Chapter 3 in full. Without much greater international support, Ethiopia could effectively clear the foreign exchange market and see benefits in foreign exchange allocations, but it will not be able to address the need for monetization, high inflation, and some financial repression in the short term. This is because major achievements in tax mobilization and continued improvement in SOE management that address a backlog of debt obligations can only be achieved gradually. Looking ahead, if the conflict can be resolved, Ethiopia should view an adapted HGER to achieve a similar type of sustained growth acceleration as the country achieved after the end of active hostilities with Eritrea in the early 2000s. To do so, it will have to combine strategic public investment, access to imported imports, and the absorption of new productive knowhow once again — but this time in a more diversified set of exports that can drive the economy to middle-income levels.

Lessons on Government Reform Approaches Beyond Ethiopia

What lessons does Ethiopia's experience hold for approaches to government reform? One strength of the Ethiopian approach has been how it is truly "homegrown". Just as constraints to growth are context-specific, so too must be affective reform approaches. There is no replacement for national

and local ownership of diagnostic exercises and targeted strategies to address constraints. That fact that the government could build its own reform agenda, grounded in evidence, was also instrumental to a straightforward and successful negotiation of an IMF program to support HGER in 2019. There is no doubt in Ethiopia that difficult reforms are being tackled based on the priorities of the Government of Ethiopia and not based on externally determined structural benchmarks or other conditionality from donor programs. This proactive approach to define a reform agenda grounded in local realities is the best path — and perhaps the only path — to leveraging tools of donor financial support and technical capacity building. Due credit also belongs to the donors in during the initial phase of HGER in recognizing the value of supporting the homegrown agenda. These relationships have been challenged amidst the current conflict, but if a sustainable peace can be achieved, HGER should continue to structure effective international support to Ethiopian-owned economic reforms.

Ultimately, the success of the homegrown approach depends on getting the reforms right both in design and in sequencing. The design of individual must be grounded in an understanding of what is binding the growth of the economy, which is largely true for HGER. However, the flaw in the design of HGER comes from the lack of focus on the sequencing of reforms, given inherent tradeoffs between macroeconomic reform goals. This type of challenge is common across countries, as good reforms in the wrong order can often worsen original problems. Given that diagnosing constraints and syndromes is not always straightforward, policymakers should seek to crowd in expertise of local and external researchers to help inform their reform approaches. One significant challenge with this is that few international development agencies are focused on building their own capabilities to do context-specific diagnostic and policy design work. There is, in fact, an industry of development support organizations that are quick to recommend best practices that are not fit to local problems. This can undermine local development strategies, and thus national policymakers must take responsibility for crowding in analytical support rather than taking what often looks like the easier approach of outsourcing development strategy to international consultants.

Ethiopia's experience also shows — in dramatic fashion — that the political window for economic reform is often short-lived and must be utilized well. Strong reform structures, like HGER, can be effective for making reforms resilient to some shocks — as was the case with COVID-19 — while also creating strong foundations that may outlive political shocks as well. Ethiopia also offers lessons to other countries in how to embrace real-time review and adaptation of reform efforts. This chapter is a case in point. The Government of Ethiopia had the wisdom and confidence to request a variety of viewpoints and analysis on HGER progress in the middle of implementation. Rather than wait until the end of HGER, when it would be too late to change course, the government collected information on what was working as it was working. Moreover, many national governments take a posture of defensiveness of national strategies, especially in cases where their achievement of conditionality requirements with donors are unclear. Often there is a tendency to report the best possible interpretation of reform performance rather than be open to

understanding and addressing weaknesses. This is equally a problem in many governments' approaches to their domestic stakeholders. Ethiopia is not immune to these problems, but this is a case where the Government of Ethiopia sought critical feedback and made information available toward this end.

Ethiopia's experience also attests to how strategies must consider the complexity of problems and administrative constraints in undertaking reform efforts. It is easy to spread priorities too thin and overwhelm limited administrative systems and staff within governments, especially in developing countries where resources are more limited. In the context of known gaps in state capability, reforms that target new capability (e.g., an actively managed exchange rate system as one simple example) require deeper investment than simple problems that can be solved by regulatory changes. Just as economic development requires countries to evolve their comparative advantage to diversify into new, higher complexity activities, so too is growth often bound by the missing public sector capabilities to manage a more complex economy. Ethiopia is a case where ambitious reforms may have overrun limited capability and bandwidth of key individuals. Strategies should more explicitly recognize how planned reforms differ in the complexity of the underlying problem that will need to be fixed by government officials, the presence of required capabilities, the length of time required to achieve reform, and their dependence on progress on other reforms. Thankfully for Ethiopia, it is never too late to narrow and target focus based on active learning.

The interaction across constraints in Ethiopia highlights the need for strategy approaches to be adaptive. Strategies often assume the reforms themselves as the only vectors of change to the economy. Targets are often set against ambitious, specific outcomes far off in the future. Ethiopia's case attests to just how many unplanned, external shocks can occur to make those targets infeasible. Strategies cannot necessarily predict what shocks are going to happen, but strategies should anticipate the unexpected and allow space within plans to adapt to the inevitability of the unexpected in a complex world.

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