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Economic Diversification in Africa: How and Why It Matters

Zainab Usman and David Landry

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Summary

For decades, economic diversification has been a policy priority for low- and middle-income economies. In the words of former managing director of the International Monetary Fund (IMF), Christine Lagarde, “We know that economic diversification is good for growth. Diversification is also tremendously important for resilience.” Unfortunately, this goal continues to elude many African countries. In fact, the continent is home to eight of the world’s fifteen least economically diversified countries. This reality weakens the foundation of their economic transformation and slows their pace of progress. It also makes these countries particularly vulnerable to sudden external shocks, as the pandemic-induced disruption of tourism and oil-dependent economies has illustrated.

Given the importance of diversifying African economies, it is critical to recognize how various dimensions of diversification can have different implications for the menu of policy options. Closely associated with the process of structural transformation from lower to higher productivity sectors, economic diversification has three evident dimensions. The first relates to the expansion of economic sectors that contribute to employment and production or gross domestic product (GDP) diversification, and the second is associated with international trade or exports diversification. This paper, however, focuses on a third dimension that the economics literature pays scant attention to: fiscal diversification. This fiscal element involves expanding government revenue sources and public expenditure targets and can therefore play a central role in helping to catalyze broader economic transformation through the expansion of activity in specific industries and sectors.

It is also critical that policymakers effectively measure the extent to which this objective is being achieved. Both the expansion of existing economic sectors and the creation of new ones may diversify an economy. But these processes are vastly different in practice and will garner distinct outcomes. Of the main tools used by economists to measure diversification, the Theil Index differentiates between the respective contributions of new economic sectors and existing ones to overall diversification. Another tool widely used by development practitioners—the Public Expenditure and Financial Accountability (PEFA) framework—has significant potential for evaluating fiscal diversification but would need to capture more information on government revenue collection and spending and link them to policy objectives.

Yet not all dimensions and measurements of economic diversification are equally applicable for all African countries. Important structural differences—many of which are on full display in Africa—have implications for how these countries pursue the policy objective of economic diversification. In the economics literature, national income correlates closely with economic diversification: low-income countries are generally undiversified but diversify as they transition to middle income. Another

central factor is natural resource dependence: resource-rich countries tend to be less diversified than their counterparts. The quality of governance is also a factor but unlike its link with economic growth, its exact link with economic diversification remains underexplored and inconclusive in the literature.

Beyond the relationship between national-level structural characteristics and economic diversification, it is important to account for subnational differences within countries, which can sometimes be stark. Interregional inequality is especially pronounced among Africa's eastern and western coastal countries, where more diversified islands and productive coastal areas contrast with huge swaths of inland areas used mainly for subsistence farming. Within other African countries, economically diverse and productive areas, or growth poles, are clustered around the national capital, while the hinterlands predominantly engage in subsistence agriculture. Therefore, African countries' challenges of economic diversification may be more acute at the subnational level and necessitate different policy responses. This spatial and subnational dimension of economic diversification merits further research.

Overall, the policy strategies for diversifying any economy depend on identifying—with the country's structural characteristics in mind—the specific dimension of economic diversification desired.

Introduction

Economic diversification has long been viewed as a policy priority for low- and middle-income economies. In a 2017 speech about economic diversification in Africa, then managing director of the International Monetary Fund (IMF) Christine Lagarde stated, “To my mind, promoting economic diversification is akin to weaving a beautiful traditional fabric. What do I mean by that? I mean weaving an *economic* fabric that is more complex, more resilient, and more beneficial to *all* families and communities. We know that economic diversification is good for growth. Diversification is also tremendously important for resilience.”¹ Similarly, in 2020, the former governor of Kenya’s Central Bank, Njuguna Ndung’u, wrote, “Africa has made socioeconomic progress in the last two decades, but economic diversification would have laid a more solid foundation for accelerated development. Economies that are not diversified experienced a decline in growth, accompanied by weak institutions, as well as stunted efforts at structural and economic transformation. Economies weakened by a lack of diversification are susceptible to global crises such as a pandemic.”²

Recognizing this reality, the goal of economic diversification has shaped the policy direction of many countries. For instance, oil- and mineral-rich economies in Africa, Latin America, and the Persian Gulf aim to reduce dependence on these natural resources by expanding the sources of their exports and fiscal revenues. The urgency of export diversification is often underscored by the periodic boom and bust cycles of international commodity prices, as was the case in 2015 and, more recently, during the global shock to oil supply and demand triggered by the coronavirus pandemic. In 2016, Saudi Arabia launched Vision 2030, a landmark strategy that, among other goals, aims to reduce the country’s dependence on oil by facilitating the emergence of a robust private sector. Small Island Developing States (SIDS) in the Caribbean, Pacific, and parts of Africa also seek to build stronger, resilient economies by reducing their dependence on revenues from tourism or a few unprocessed commodity exports. Similarly, some countries, especially in Africa and Latin America, endeavor to expand their trade partners beyond regional hegemon and former colonial powers.

On the African continent, the challenges associated with a lack of economic diversification compound each other, rendering countries particularly vulnerable to external shocks. Overall, Africa is home to eight of the world’s fifteen least diversified countries, according to the International Monetary Fund’s Export Diversification Index (2020). Due to persistent challenges around structural economic transformation—including slow productivity growth and limited advancement in technology and industrialization—continental Africa’s share of global merchandise exports remained virtually unchanged between 1998 (1.9 percent) and 2018 (2.5 percent).³ Furthermore, Africa has relatively

low intra-regional trade levels (17 percent), compared to Europe (69 percent), Asia (59 percent), and North America (31 percent); only the Middle East scores lower.⁴ Due to various factors such as tariff and nontariff barriers, many African countries trade more with far-flung countries, including former colonial powers, than with their neighbors.

Some key indicators reflect Africa's oft-precarious position in the global economy, despite its immense potential. Countries in sub-Saharan Africa account for only 2 percent of global economic activity even though the region is home to 14 percent of the world population.⁵ As the region's population expands rapidly—forecasted to exceed 2 billion people by 2050—so does its share of global poverty. According to World Bank projections, Africa will be home to 90 percent of the world's extreme poor by 2030.⁶ The coronavirus pandemic is making a dire situation much worse, as an estimated 39 million people could be pushed into extreme poverty in Africa by 2021.⁷ All these grim projections reinforce the urgency of building strong, resilient, and diversified economies to ensure that Africa fulfills its potential of shared prosperity.

While the idea that diversifying a national economy offers protection against economic volatility may not be new, it is certainly experiencing a resurgence. Seminal economics works by economists like Raul Prebisch, Hans Singer, and Michael Michaely highlighted the importance of shielding an economy from excessive aggregate price shocks.⁸ More recently, the concept that diversifying trade partners could safeguard a country against external demand shocks has also gained traction.⁹ Beyond protection against shocks, economic diversification is increasingly recognized as essential for economic development, especially in low-income and resource-dependent countries, as it can help fuel economic growth and poverty reduction.¹⁰ Economic diversification also matters because, generally, it is accompanied by industrial upgrading due to technology diffusion and a movement toward higher productivity sectors and better paying jobs. For instance, Robert Feenstra and Hiau Kee found that, on average, a 10 percent increase in export variety leads to a 1.3 percent increase in productivity due to better use of resources and improved allocative efficiency.¹¹ Economic diversification can also be accompanied by, or lead to, the emergence of regional growth poles as sectors, which may transition more quickly than others. These growth poles can become significant sources of government revenue and can catalyze new industries in the country—they can attract capital, spur skill-acquisition among the labor force, and sometimes achieve economies of scale, including by joining global value chains.

Given Africa's present socioeconomic situation and the critical nature of economic diversification, this paper explores the concept of economic diversification as it relates to Africa by synthesizing available literature and identifying knowledge gaps. What are the various dimensions of economic

diversification? How is economic diversification measured? Why do the dimensions and measures of economic diversification matter to African countries?

To address these questions, various strands of theoretical and empirical literature on structural transformation, economic development, and public financial management are synthesized to shed light on the policy challenges to achieving economic diversification that confront many African countries. Existing conceptualizations of economic diversification are expanded upon to include fiscal revenues and public expenditures. The bulk of available literature on economic diversification focuses on the relative contributions of different economic sectors to a country's total production or export basket and trading partners. But "fiscal diversification" is also a principal dimension, as it depends on the structural transformation in the economic sectors that contribute to output, employment, and trade, as well as highlights the crucial role of fiscal policy in spurring economic diversification.

In terms of measurement, two sets of tools are highly relevant and applicable to assessing economic diversification. Among economists, the Theil Index has emerged as the most widely used tool to measure exports diversification. It can also be used to calculate fiscal diversification and has critical technical advantages. However, efforts to leverage these advantages have so far been limited to the measurement of trade diversification. Among development practitioners, the Public Expenditure and Financial Accountability (PEFA) framework is the most widely used tool to assess the strengths and weaknesses of public financial management (PFM) performance, which has implications for fiscal diversification. But to use PEFA in an assessment of fiscal diversification, information on fiscal policy would be needed to help determine whether government revenue collection and spending is sustainable and effective in spurring economic transformation or achieving other policy objectives.

In addition to expanded ways to conceptualize and measure economic diversification, the structural and socioeconomic characteristics of African countries must be reflected in any approach. As extensive literature on economic diversification demonstrates, there are a range of factors, including population size; per capita income; institutional development; and financial, physical, and human capital. Due to sharp internal differences along urban-rural or coastal-inland lines, the challenges of economic diversification can assume a spatial dimension within some African countries. Overall, two factors appear to have an outsized relationship with economic diversification: income levels (in other words, whether low, middle, or high income) and its dependence on nonrenewable natural resources.

What Are the Various Dimensions of Economic Diversification?

Traditionally, economic diversification involves transitioning away from dependence on one or a few commodities such as crude oil, minerals, and agriculture production toward a broader range of sources of production, employment, trade, revenues, and expenditures. Among economists, the process that is most closely associated with this policy objective of economic diversification is structural transformation, which is characterized by rising productivity, sustained growth, and broader development. It is structural transformation that facilitates the diversification of sources of production and employment, international trade, revenues, and expenditures through various dimensions.

Structural transformation involves the movement of a country's productive resources from low productivity activities such as primary agriculture to higher productivity activities in the industrial or service sector.¹² It is exemplified by a declining share of agriculture in production and employment, a shift of workers from low to high average productivity sectors, and increases in efficiency and productivity. Economic growth is the quantitative increase in economic output usually measured by an increase in GDP. Growth in output can be driven by rising factor intensity, such as adding more farm hands to work on a given plot of land. It can also be driven by rising productivity, such as an improvement in the capabilities of the farmers working that land through, for example, better techniques and tools.

At its most basic level, productivity refers to output per unit of production inputs. Productivity growth is associated with higher efficiency in production—an increase in output without necessarily a commensurate increase in inputs of labor, human capital, natural assets, and physical capital. An increase in productivity is essential to sustained economic growth. The consensus among economists is that total factor productivity accounts for the majority of differences in income generated per worker across countries.¹³ That is, with the same amount of inputs—such as workers, equipment, and land—some countries, sectors, and firms produce more than others.¹⁴

One of the most valuable sources of firm-level productivity growth—which helps countries expand their production possibility frontier and catch up to productivity leaders—is an increase in firm capabilities.¹⁵ Chad Syverson addresses two determinants of firm capabilities: production practices and the firm's external environment.¹⁶ Across sub-Saharan Africa, labor productivity has lagged behind the United States, which is used as the global efficiency benchmark.¹⁷ The average output per worker in sub-Saharan Africa declined from 11.9 percent in 1960 to 7.7 percent in 2017, whereas for East Asian countries, labor productivity increased from 8.5 percent in 1960 to 28.3 percent in 2014. Similarly, there has been a divergence in labor productivity between sub-Saharan Africa and large emerging market economies like Brazil, China, and India.

In sum, economic development is a process of sustained economic growth and structural transformation from low to higher productivity activities.

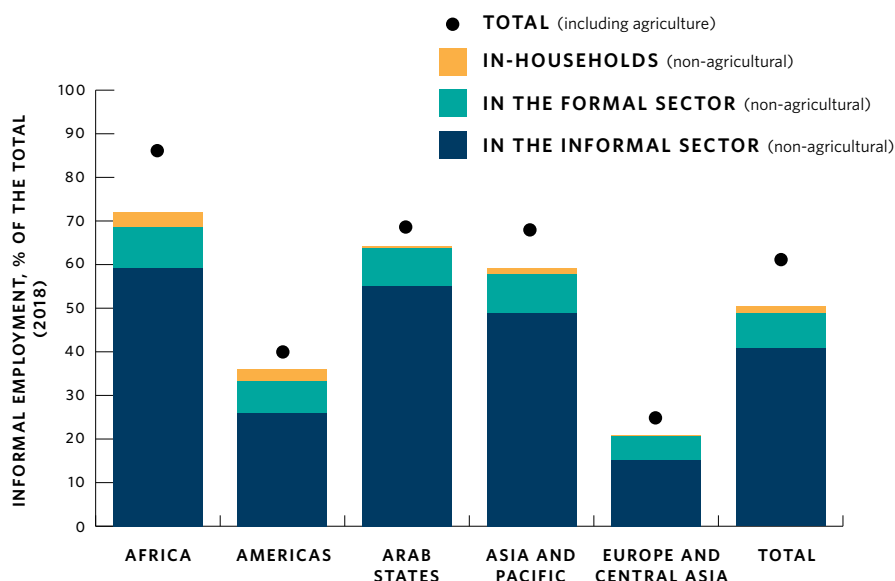
How do these concepts relate to diversification? For many low-income countries, the process of economic development comprises diversification—a transition from subsistence agriculture, natural resources extraction, and other forms of primary production toward value-added manufacturing, services, and other industry. In other words, economic diversification is directly linked to economic development, characterized by rising per capita incomes, reduced poverty levels, and industrial transformation. While several dimensions of economic diversification have significant implications, they generally depend on countries' structural characteristics. The two most common conceptualizations of the term are GDP diversification—that is, the sectoral contributions to employment and production—and exports diversification in terms of the main goods and services sold to trade partners. But there is an important third conceptualization: fiscal diversification. It involves expanding the sources of government revenues and the targets of public expenditures.

The first conceptualization denotes an increase in the number of economic sectors that contribute to an economy's aggregate employment and output.¹⁸ This usually entails structural transformation, as discussed above—a transition from primary industries toward more technologically advanced sectors, a shift away from informal economic sectors toward formal sectors, and increasing levels of productivity more broadly.¹⁹ In practice, this conceptualization generally captures the relative value added of specific economic sectors as a share of aggregate output, especially industry and services. Peter Schott presents the idea that countries travel across diversification “cones” as they accumulate capital and move up the production value chain.²⁰ As this transition occurs, old cones, such as natural resource exports, should decrease in importance while new cones, such as manufacturing, should gain prominence.

The growth in some economic sectors may provide intermediate inputs to the growth of others and thus diversify the sources of employment and output. For instance, several scholars point to how underdeveloped financial markets create frictions that decisively affect output per worker, aggregate and sector-level productivity, and investment ratios. Financial frictions in developing countries have a severe impact on the manufacturing sector. According to Francisco Buera, they result in a 50 percent decline in productivity, higher relative prices of manufactures compared to services, and a 15 percent decline in investment ratios.²¹ Hence, the informal sector, which is characterized by low wages, skills, and productivity, tends to be prevalent in these countries as the main source of output and employment.

FIGURE 1

Africa Has the World's Highest Level of Informal Employment



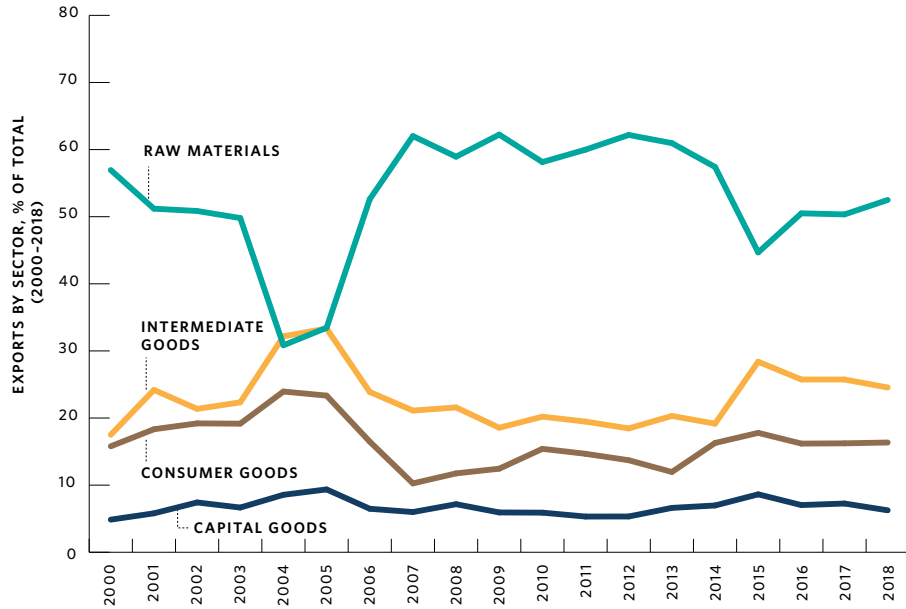
SOURCE: International Labour Organization, *Women and Men in the Informal Economy: A Statistical Picture (Third Edition)* (Geneva: International Labour Organization, 2018), 67.

Overall, a more evenly distributed economic weight across industries—often marked by a decline in agriculture’s contribution to the economy—denotes a more diversified economy. That said, such figures can be difficult to compile for developing countries, where informal employment remains prevalent. As Figure 1 demonstrates, the informal sector makes up 85.8 percent of total employment in Africa (71.9 percent of agriculture is excluded from the total). Though substantial variations persist between countries in North and sub-Saharan Africa, and also within sub-Saharan Africa itself, African economies as a whole are marked by high levels of informality.

The second conceptualization of economic diversification—export diversification—focuses on a country’s major trade sectors and partners.²² Specifically, export diversification relates to an increase in the range of goods and services an economy exports to the rest of the world or in the markets to which they are exported. Export diversification generally entails a move from the export of one or a few primary commodities to that of a wider set of manufactured goods and services. Beyond expanding the export basket, export diversification can entail exporting to a larger number of destination countries.²³ Together, these increases in exported goods and trading partners are often associated with participation in new global value chains, which can allow countries to take advantage of forward linkages and enable domestic firms to become more competitive globally through technology transfers and efficiency gains.

FIGURE 2

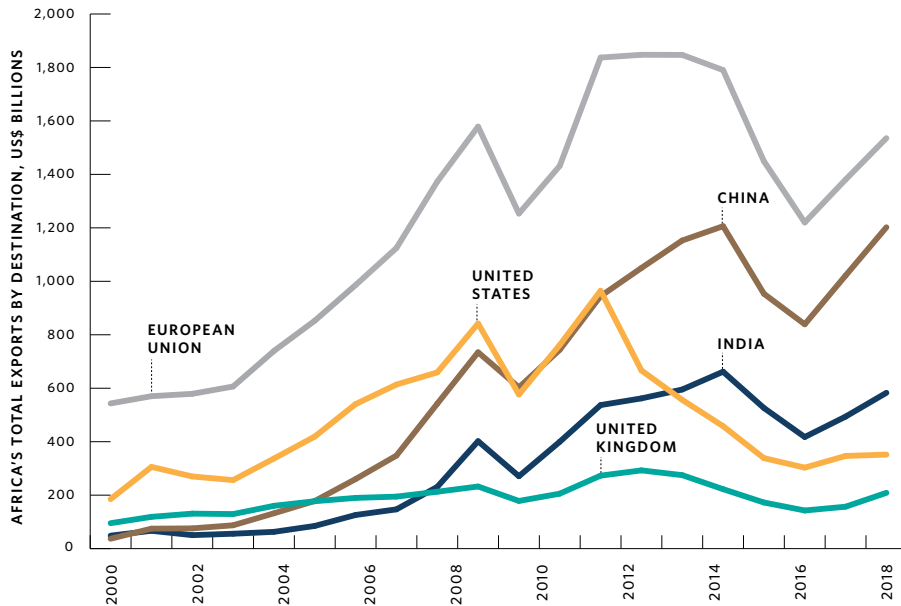
Raw Materials Continue to Dominate African Countries' Exports



SOURCE: Authors' calculations using data from the World Integrated Trade Solution database, <https://wits.worldbank.org/>, accessed July 12, 2020.

FIGURE 3

China and India Account for a Rising Share of Africa's Exports



SOURCE: Authors' calculations using data from the International Monetary Fund, <https://data.imf.org/>, accessed July 12, 2020.

Raw materials still make up the bulk of exports among African countries—52 percent of the total in 2017 (see figure 2). However, there is considerable variation by subregion: Southern and East Africa have more diversified export baskets than West and Central Africa. Some African countries have also diversified their trade partners. China and India recently surpassed the United States to become Africa’s largest bilateral trade partners (see figure 3). Yet in exploring the impacts of trade diversification on GDP growth among developing countries, Fabien Rondeau and Nolwenn Roudaut found that diversification spurs economic growth but has diminishing marginal returns and that product diversification is twice as impactful as partner diversification.²⁴

The third conceptualization as described in this paper—fiscal diversification—infers an increase in the number of economic sectors that contribute meaningfully to government revenues and are targeted by government expenditures. The share of a government’s budget collected from various sectors can represent a crucial measure of fiscal diversification. Various sources of finance are available to governments, including taxation, internal and external borrowing, currency issuance, and development assistance. Fiscal diversification can therefore entail reducing dependence on one or a few sources—especially extractive industries²⁵—by generating more varied and sustainable domestic revenue mobilization. It can also involve expanding the tax base and taxation instruments or better leveraging underused tax instruments.²⁶ Both components of fiscal diversification are fundamental, as taxes represent the most sustainable sources of revenue.²⁷

Various aspects of fiscal diversification have been addressed in theoretical, empirical, historical, and policy literature on how public finance relates to policy objectives. Thus, the main conceptual elements of fiscal diversification are not new. What is new, in this analysis, is the fusion of these elements to conceptualize fiscal diversification as both an indicator of structural economic change (production, employment, and trade) and as a mechanism or tool for policymakers to catalyze economic change.

A rich volume of literature explores how structural economic change influences the evolution of tax systems. According to Robin Burgess and Nicholas Stern, for instance, roughly two-thirds of tax revenues in developing countries come from indirect taxes largely comprised of domestic taxes and trade taxes, and the remaining third consists largely of corporate income tax.²⁸ Meanwhile in developed countries, direct taxes such as the personal income tax and social security payments account for roughly two-thirds of total taxes. The authors conclude that economic structure may constrain taxation expansion more severely in developing countries than in developed countries. As economies grow, a gradual shift away from trade taxes to domestic sales taxes tends to take place. This diversification of tax sources occurs as governments increase the collection of revenues—from around 10

percent of national income to roughly 40 percent, according to Timothy Besley and Torsten Persson.²⁹ The mechanisms for this marked shift include a shrinking informal sector, which widens the tax net; the growth of larger firms, which eases tax compliance; and the development of the financial sector, which encourages transparent accounting procedures that enable taxation.³⁰ In an analysis of panel data for ninety-seven developing countries, Mohammad Karimi and others found that trade liberalization in the form of tariff reduction, but not trade openness per se, affects the major tax sources of these countries.³¹

A substantial amount of literature explores the expansion of revenue generation and tax collection, as contingent on the state-building process, and more specifically, government capacity and institutional quality.³² Governments with internal organizational coherence, authority within their territory, bureaucratic capacity, and political legitimacy can more effectively mobilize themselves around the tasks of identifying relevant revenue sources and effectively collecting taxes from them.³³ Charles Tilly and, more recently, Timothy Besley and Torsten Persson even associate the pressures of waging wars with larger investments in fiscal capacity.³⁴ Relevant literature also examines how political legitimacy, administrative capacity, and accountability relate to improvements and expansion in tax collection on the “supply side.” The management of government revenues to provide public goods and respond to the citizenry through careful policy design, implementation, and accountability prevents grievances that can lead to tax avoidance.

According to Mick Moore, a “governance dividend” can be reaped when governments, dependent on broad general taxation for their incomes, become more responsive to the needs of citizens and allow more inclusive forms of governance.³⁵ For instance, while exploring randomized audit reports in Brazil, Jeffrey Timmons and Francisco Garfias found that property tax revenue rises correlate with clean audit reports and decreases correlate with corruption.³⁶ More specifically, Shantaya Devarajan and others demonstrated that while tax revenues are positively associated with accountability, the opposite is true for oil dependency.³⁷ Among countries across the income spectrum, taxation improves the quality of governance and taxes borne directly by citizens are the most critical in improving governance.³⁸ Across the income spectrum, higher shares of revenue collection at the subnational level are associated with lower levels of corruption, including in sub-Saharan Africa.³⁹ Therefore, in analyzing the link between taxation and economic performance, one has to account for various political and social factors.⁴⁰

Some studies also indicate that taxation has an impact on government spending efficiency. For instance, while exploring variations in the timing of municipalities’ uptake of a federal transfers program rolled out in Brazil, Lucie Gadenne found that revenue increases from local taxes improved

both the quantity and quality of municipal education infrastructure.⁴¹ However, this same phenomenon does not apply to increases in grant revenues over which local municipalities have similar discretion. This suggests that how government spending is financed has a direct impact on its effectiveness.

On the expenditure side, government spending can both catalyze and constrain the growth in employment and output of economic sectors. An expansion in the number of government expenditure targets can indicate a shift from subsidies to specific economic sectors, such as primary commodities or heavy industries or basic public services. It can also reflect structural economic changes in production and employment. Through expenditures, governments can free up resources that might otherwise be allocated to suboptimal economic sectors and reallocate them to sectors that provide higher economic and social returns. Government spending and associated policy to help ease credit constraints can help smooth financial frictions that otherwise distort the allocation of capital and entrepreneurial talent across firms, industries, and sectors.⁴²

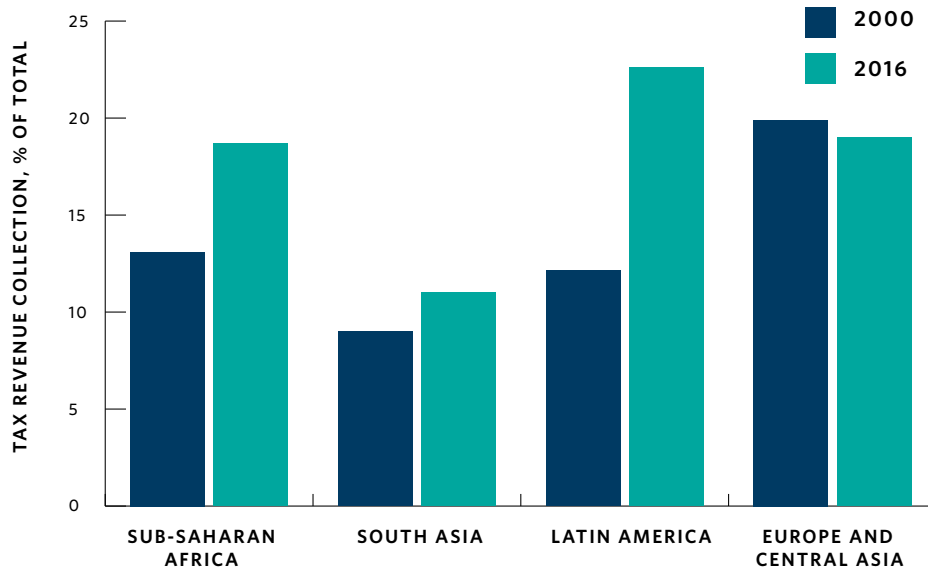
Some studies suggest that government spending may target certain constituencies as a way to induce tax compliance. For instance, Jeffrey Timmons found that governments that rely relatively heavily on taxes paid by poor people (regressive taxation) will tend to motivate these relatively impoverished taxpayers through social spending on public services; and those governments that rely more heavily on taxing the rich (progressive taxation) will motivate them by providing relatively high levels of protection for property rights.⁴³

Historically, governments in developing countries have sought to use the fiscal tools—both revenues and expenditures—at their disposal to spur structural transformation. Some countries—primarily the Central and Eastern European late-industrializers and the East Asian tigers—succeeded in doing so. In other instances, however, the experience proved disastrous for economic development. For instance, the import-substitution industrialization policies adopted by many Latin American and African governments severely harmed their countries' agricultural exports.⁴⁴ Unfortunately, in Africa, the policies did not result in an equivalent rise in manufacturing output.⁴⁵ Furthermore, many African governments frequently used their fiscal regimes to attempt to facilitate diversification and the move away from the primary sector—sometimes with disastrous economic consequences, as documented by Robert Bates.⁴⁶ That said, the economics literature, and more specifically the New Structural Economics movement, is increasingly rethinking the ideas surrounding industrial policy in Africa.⁴⁷

In the last two decades, domestic revenue generation has dramatically increased among African countries (see figure 4). Furthermore, as Moore and others note, governments in Africa are collecting taxes more efficiently than other governments in some low-income regions and are making con-

FIGURE 4

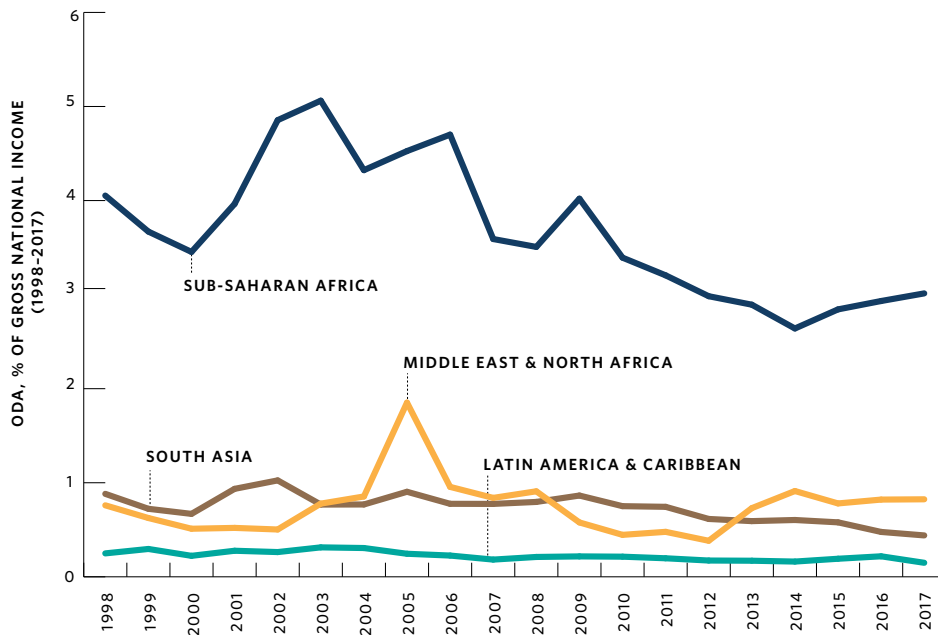
Domestic Revenue Collection Has Increased but Remains Low



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators database, <https://databank.worldbank.org/source/world-development-indicators>, accessed July 12, 2020.

FIGURE 5

Sub-Saharan Africa Remains the Region Most Dependent on ODA



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators database, <https://databank.worldbank.org/source/world-development-indicators>, accessed July 12, 2020.

sistent, gradual progress in improving their revenue systems. As a result, they are capturing a higher proportion of national income for public purposes.⁴⁸ Meanwhile, in sub-Saharan Africa, net official development assistance (ODA) has declined from a peak of 5.1 percent in 2003 to 3 percent in 2017 (see figure 5), though considerable cross-country heterogeneity exists. For instance, development assistance accounts for 20 percent of gross national income in The Gambia, Liberia, Malawi, and Somalia. Furthermore, overall, Africa is more dependent on ODA than any other region; in 2016, it received about 33 percent of total ODA from donors of the Organisation of Economic Co-operation and Development.

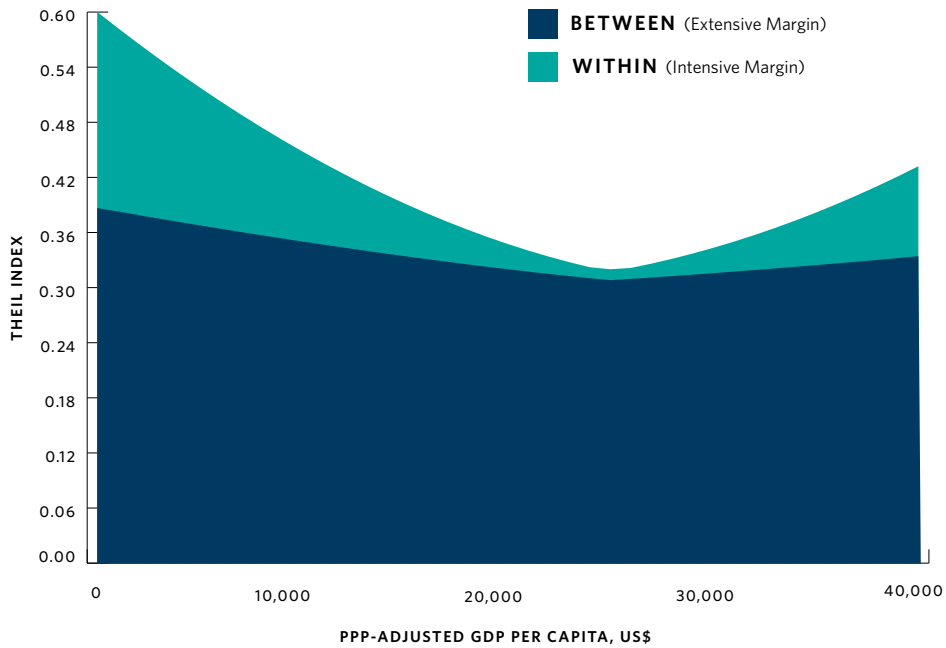
How Is Economic Diversification Measured?

The Theil Index is now the most widely used economic diversification measure—including as part of the IMF's Export Diversification Index (EDI)—of the three employed by economists. It is preferred partly because, as Olivier Cadot and others explain, it can be broken down between groups of export lines.⁴⁹ More concretely, diversification can be measured separately by the active export lines of a specific country (goods that the country has exported in the past) and inactive export lines (goods that the country has not exported). Cadot and others refer to the former as the intensive margin, or the “within” component of the Theil Index, and the latter as the extensive margin, or its “between” component.⁵⁰ For example, the 2017 United Nations' Harmonized Commodity Description and Coding Systems (HS) lists 31,048 individual products in its most detailed classification (HS-6)—of which Nigeria, for example, exported 491 in 2018. In computing the Theil Index for Nigeria for 2019, the changes in concentration at its intensive margin, which includes goods such as petroleum and cocoa, and at its extensive margin, which includes maple syrup and snow plows (presumably), would both be computed. Therefore, the index findings would indicate whether diversification in Nigeria came from further diversification in the products it previously exported or from products it did not previously export.

According to Cadot and others, “Diversification occurs mostly at the extensive margin [or inactive lines], especially early in the development process” (see figure 6).⁵¹ This is because in the early stages of the development process, new export sectors multiply and grow.⁵² This distinction between the intensive and extensive margins has crucial policy implications: “Understanding which margin—if any—seems to be a stronger growth driver is important not only for its own sake, but also for the design of export-promotion policies, as the market failures that must be addressed in either case are likely to be different.”⁵³ While pursuing export diversification at the extensive margin may entail overcoming such international structural barriers as informational externalities or insufficient knowledge about the destination market, doing so at the intensive margin may require reorganizing the domestic economy through credit rationing.⁵⁴ As discussed earlier, addressing fiscal and monetary policies can help resolve the financial frictions that affect productivity across different economic sectors, especially manufacturing.⁵⁵

FIGURE 6

Export Diversification in the Extensive Margin Becomes More Challenging as Per Capita Income Increases

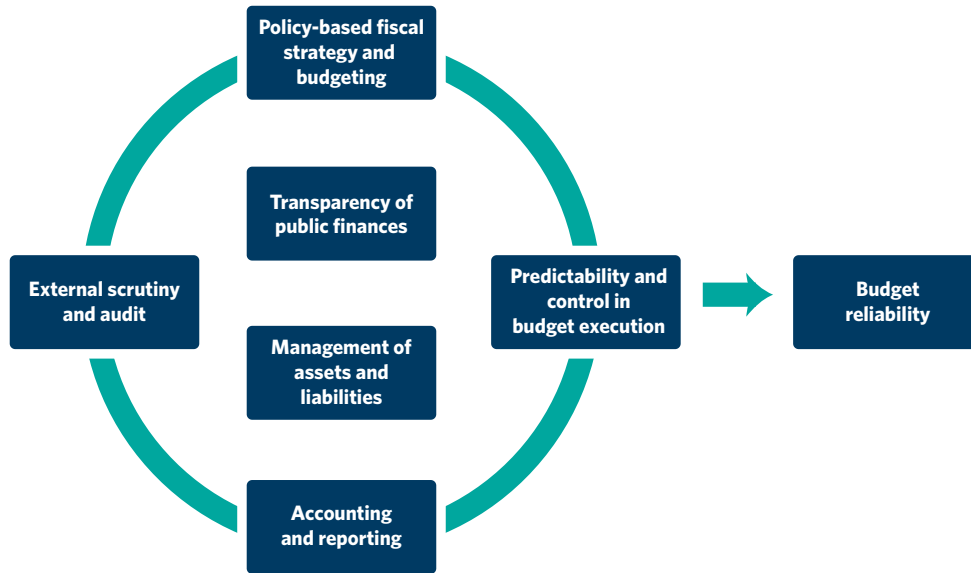


SOURCE: Adapted from Olivier Cadot, Celine Carrère, and Vanessa Strauss-Kahn, “Export Diversification: What’s Behind the Hump?” *Review of Economic Statistics* 93, no. 2 (2011): 590–605.

Efforts to take advantage of the Theil Index’s features have so far been limited to trade diversification literature. That said, its disaggregation component could be used to assess the relative contribution of economic sectors to fiscal revenues. For example, according to the 2020 Budget Review published by the South African National Treasury, Pretoria will collect just over 1,516 billion rand in the 2019–2020 fiscal year, predominantly from two sources: taxes on income and profits, which include the corporate income tax (CIT) and the personal income tax (PIT), and taxes on goods and services, which include the value-added tax.⁵⁶ In computing the Theil Index for South Africa, the changes in concentration of its revenue sources, broken down by sector, would be computed. For instance, the CIT or PIT could each be disaggregated at the intensive margin of the active contributing economic sectors today (such as gold mining or automobile manufacturing) and at the extensive margin of inactive sectors that could contribute to taxes in the future (such as aircraft manufacturing).

Among development practitioners, a widely used tool with the potential for measuring fiscal diversification is the PEFA framework. It is used to assess and report on the strengths and weaknesses of PFM performance under seven broad pillars.⁵⁷ Pillar one relates to budget reliability; pillars two and three relate to issues that cut across multiple PFM systems; and pillars four to seven relate to crucial

FIGURE 7
The Seven PEFA Pillars and the Budget Cycle



SOURCE: Adapted from “Framework for Assessing Public Financial Management,” Public Expenditure and Financial Accountability 2016, 3.

stages of the budget process (see figure 7). Each pillar is comprised of two to seven indicators, making a total of thirty-one indicators. The Budget Reliability pillar, for example, has Aggregate Expenditure Outturn, Expenditure Composition Outturn, and Revenue Outturn as its constituent indicators. Each indicator is rated on a scale from “A” (highest) to “D” (lowest)—which implies different levels of compliance with best practices—and grouped under PEFA’s seven pillars of PFM performance.⁵⁸ The PEFA framework—that is, the seven pillars and thirty-one indicators combined—provides a snapshot of the PFM performance in a country on three budgetary outcomes: aggregate fiscal discipline, strategic allocation of resources, and efficient service delivery.

While PEFA is one of more than forty-five tools that assess PFM systems, it has the greatest potential for evaluating fiscal diversification.⁵⁹ First, it presents the most comprehensive measure of PFM—covering virtually the full budget cycle, from budget preparation and approval to execution, reporting, and oversight.⁶⁰ The outcome of the performance assessment, the PEFA report, helps to inform dialogue on PFM reform strategies and priorities at various government levels. Second, PEFA offers extensive geographic coverage—the 600 formal assessments undertaken by PEFA since 2005 cover 153 countries, including nearly all developing countries and all African countries except Libya and

Somalia.⁶¹ Third, PEFA's methodology can be replicated to help assess progress over time. Finally, PEFA is increasingly being used at the subnational level to assess the PFM performance of state, provincial, regional, and local governments, including districts and municipalities.⁶² Today, most development agencies use the PEFA framework to diagnose PFM systems and assess associated fiduciary risks.

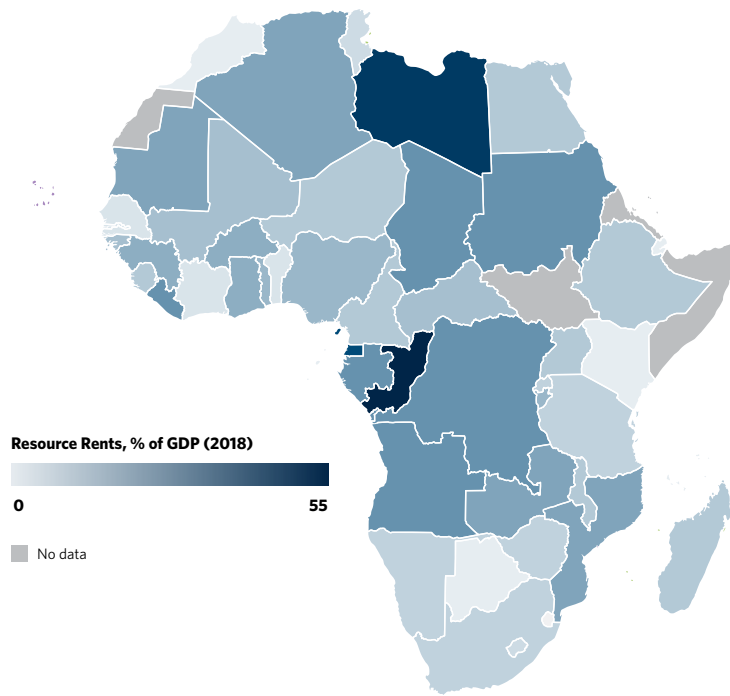
However, there are some limitations in using PEFA to assess fiscal diversification. For instance, according to Sierd Hadley and Mark Miller, not all elements of the framework are universally relevant, and indicators do not always capture which systems are deficient or why.⁶³ Furthermore, PEFA ratings continue to be used as ends in themselves—to determine what systems should look like—rather than as means to achieve specific policy objectives. Thus, the ratings inadvertently incentivize reforms that change how systems look but not how they function.⁶⁴ More could be done to interpret which of the PEFA ratings matter more in different contexts, say in low-income vs. middle-income economies, and why. Overall, since PEFA is rooted in a multidonor initiative, the framework has a normative and prescriptive bias toward measuring and conforming to so-called best practice processes in finance and other relevant ministries rather than measuring the outcomes of these PFM reforms. To better capture fiscal diversification, the framework would need to factor in government revenues and expenditures to help assess issues like sustainability or potential for economic transformation in relevant sectors.

Why do the Dimensions and Measures of Economic Diversification Matter?

These dimensions and measures of economic diversification matter because they determine the menu of policy options for a country. Structural differences, such as natural resources wealth and government effectiveness, have implications for the specific challenges of economic diversification in any country. Many of these structural characteristics are on full display in Africa. According to World Bank data, twenty-three African countries are classified as low-income, thirty are middle-income, and one, Seychelles, is high-income. In terms of natural resource endowments, twenty of the fifty-one African countries that have available data are considered resource-rich (with resource rents accounting for 10 percent or more of GDP) and thirty-one are considered resource-poor (see figure 8). Finally, the quality and effectiveness of governance vary greatly across the continent, with twenty-eight of the fifty-four countries scoring a 50 or more on the Ibrahim Index of African Governance, which has a maximum value of 100, and the remaining twenty-six scoring below 50. These structural differences should be considered when measuring and interpreting the economic diversification outcomes of countries, as they have critical policy implications.

FIGURE 8

Resource Dependence Levels Vary Dramatically Between African Countries



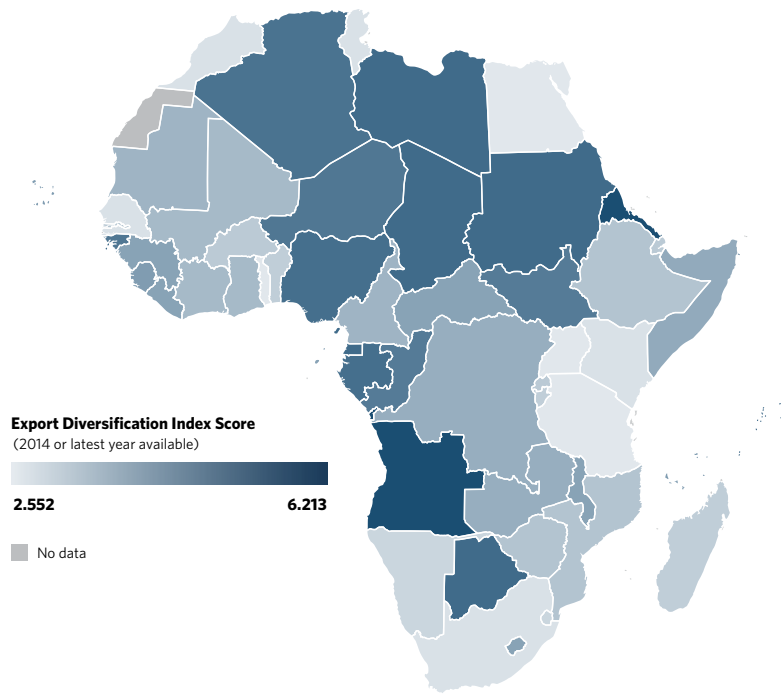
SOURCE: Authors' illustration using data from the World Bank's World Development Indicators database, <https://databank.worldbank.org/source/world-development-indicators>, accessed September 10, 2020.

Figure 9 maps African countries' respective scores on the latest iteration of the IMF's EDI.⁶⁵ As discussed above, the EDI employs the Theil Index to measure the diversification of a country's exports by comparing it to that of the world as a whole, in terms of the products exported and export destinations.⁶⁶ Higher values in the EDI (and darker shades in the map) denote lower levels of diversification, while lower values in the EDI (and paler shades in the map) reflect higher levels of diversification. Zero reflects an export structure as diversified as that of the world as a whole. A highly diversified country typically scores between 1 and 2 on the index, while a country with little export diversification scores between 5 and 7. As figure 9 demonstrates, African countries have highly varied export diversification levels. While a handful of East African countries (the five original members of the East African Federation), Egypt, South Africa, Togo, and Tunisia are highly diversified, resource-dependent countries are not.

Economic diversification is closely correlated with income, and for a long time, economists assumed the relationship was linear.⁶⁷ However, in a 2003 paper, Jean Imbs and Romain Wacziarg identify a

FIGURE 9

Most African Countries Have Low Levels of Export Diversification



SOURCE: Authors’ illustration using data from the International Monetary Fund’s database, <https://data.imf.org/>, accessed September 10, 2020.

U-shaped relationship between the level of concentration in a country’s production structure and its per capita GDP.⁶⁸ In their words, countries follow “stages of diversification,” whereby their economies are generally undiversified at low-income levels but diversify—up to a point—as they grow.⁶⁹ Then as countries reach a high-income level, their economies specialize again. Peter Schott explains this phenomenon as an old production “cone,” whereby an economy resists further diversification because of incumbency advantages, such as an established clientele for the goods and services it produces or political ties.⁷⁰ As exports diversify, the total number of active cones may also rise, but over time, the comparative advantage shifts further away from old cones as the country’s endowment structure and the way it is employed in the economy changes. As these old cones die, diversification drops.

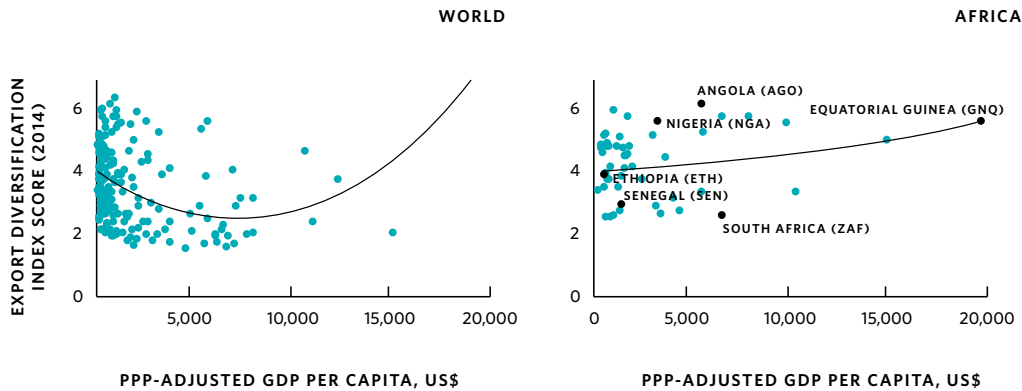
Thus, according to this literature, a high level of diversification among middle-income countries is a temporary phenomenon. This also aligns with the idea of a “middle-income trap,” conceptualized by Homi Kharas and Harinder Kohli, in which countries that achieve middle-income status subsequently stagnate and fail to achieve high-income status.⁷¹ Imbs and Wacziarg point out that diversifi-

cation is maximized at a GDP per capita level of around \$7,000–\$11,000, depending on the measurement tool and data applied.⁷² Cadot and others found that the re-concentration of exports occurs at a GDP per capita of \$25,000 (at purchasing power parity).⁷³ According to Cadot and others, this U-shaped relationship results from the increased productivity and decreased trading costs that accompany economic growth.⁷⁴ This finding has received further support in subsequent literature.⁷⁵ Similarly, other studies linking income and export diversification point to a U-shaped relationship between the two.⁷⁶

Figure 10 plots per capita GDP at purchasing power parity (PPP) figures compiled by the World Bank and the IMF's EDI. As opposed to Figure 6, which demonstrates an inflection point at a per capita GDP of roughly \$25,000, Figure 10 shows that re-specialization seems to take place at per capita GDP levels of just over \$50,000. With regard to African countries, the figure shows that no diversification appears to take place as income levels increase. As the next paragraph explains, this is likely due to the outsized dependence on natural resources of many middle-income African countries. For instance, natural resources account for more than 20 percent of GDP in five of the ten African countries that have a PPP-adjusted GDP per capita of more than \$5,000. Equatorial Guinea is the clearest outlier in Figure 10, owing to its small population of 1.3 million people and therefore high income per capita. It has by far the highest GDP per capita level among African countries and is heavily reliant on oil exports. Therefore, it is unlikely to fit the pattern described by Imbs and Wacziarg and Cadot and others, whereby economic diversification arises from increased productivity and decreased trading costs that accompany economic growth.⁷⁷

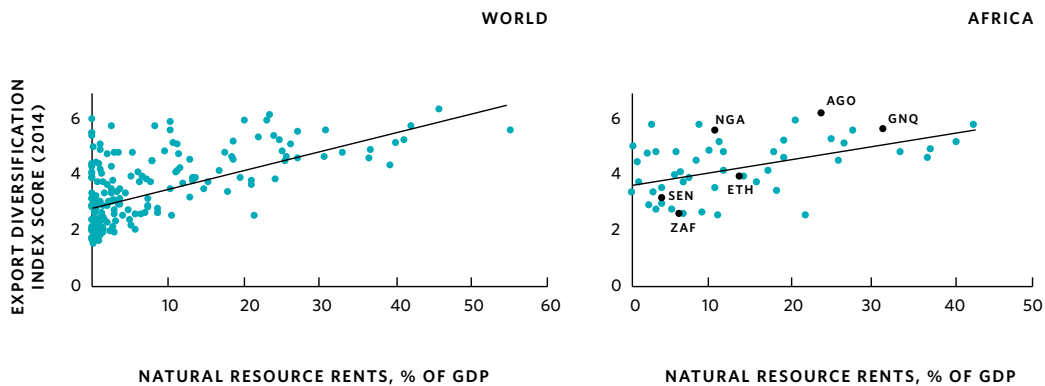
Economic diversification levels also vary significantly with resource endowments. A large volume of literature convincingly demonstrates that resource-rich countries tend to be less diversified economically than their resource-poor counterparts.⁷⁸ More specifically, though mineral- and hydrocarbons-rich countries generally seek to reduce their resource dependence, relatively few succeed due to the enormous difficulties associated with the process. As outlined by Alan Gelb, a central question facing these countries is “why diversify in the first place?”⁷⁹ Economic diversification entails clear and substantial long-term benefits—economic growth and poverty reduction, protection against volatility, and governance improvements, just to name a few. But governments might be reluctant to reduce dependence on those extractive resources industries in which they have a strong national comparative advantage. This might be due to economic constraints, as the transition can be difficult, costly, and replete with resonating fiscal risks, especially in countries afflicted by the Dutch Disease (in other words, uncompetitive economies resulting from overvalued currencies).⁸⁰ Investments aimed at catalyzing the development of nonresource sectors take time, often decades, to yield results. Therefore, domestic political support for diversification policies is needed. The global policy consensus may also impede such measures. As Ha-Joon Chang and Amir Lebdoui argue, the global policy consensus for resource-rich countries tilts toward fiscal stabilization and revenue management rather than structural transformation and diversification.⁸¹

FIGURE 10
GDP per Capita and Diversification Have an Inverse U-Shaped Relationship



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org/>, accessed September 14, 2020.

FIGURE 11
Natural Resource Dependence Is Negatively Associated With Diversification



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org/>, accessed September 14, 2020.

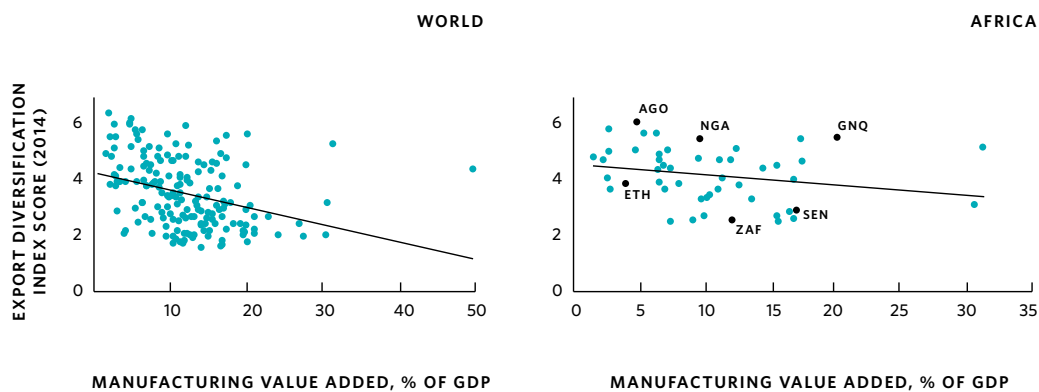
Figure 11 plots World Bank–reported natural resource rents as a percentage of GDP and the EDI. They distinctly show that, as countries' dependence on natural resource rents increases, their export diversification levels decrease. This is consistent with what Nour Alsharif, Sambit Bhattacharyya, and Maurizio Intartaglia found—that a notable negative relationship exists between oil dependence and economic diversification.⁸²

Figure 12 plots manufacturing value added as a percentage of GDP and the EDI. The data demonstrate a clear positive relationship between the two. In other words, as countries' manufacturing value added as a share of GDP grows, so does their export diversification. This is unsurprising, given the results presented above and the fact that resource dependence and manufacturing value added are expected to be negatively correlated.

Governance is also closely correlated with economic diversification. But while governance is widely accepted to be a key determinant of economic growth,⁸³ it remains underexplored in the economic diversification literature. Figure 13 plots government effectiveness and export diversification. The measure of government effectiveness used is from the World Bank's Worldwide Governance Indicators and reflects "perceptions of the quality of public services, the quality of the civil service, and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."⁸⁴ The data show a strong positive correlation between government effectiveness and export diversification, both worldwide and among African countries specifically. This phenomenon is hypothesized to take place in various ways, such as through the improvement of governments' administrative or bureaucratic capabilities, the decreased potential for state capture by actors from specific economic sectors, and the empowerment of new economic interest groups that might demand greater accountability. Favorable institutional conditions are necessary for economic diversification—but not sufficient.⁸⁵ As Alan Gelb's discussion of Botswana demonstrates, impressive reforms may not lead to diversification

FIGURE 12

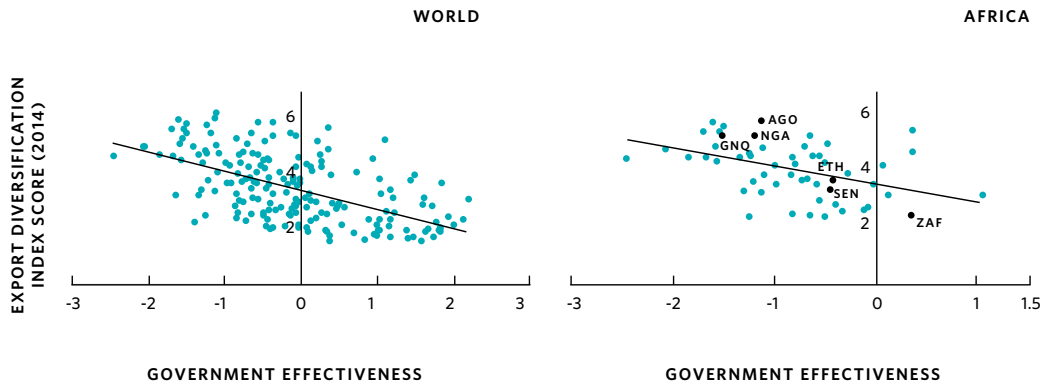
Manufacturing Value Added Is Positively Associated With Diversification



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org>, accessed September 14, 2020.

FIGURE 13

Government Effectiveness and Diversification Are Positively Linked



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org>, accessed September 14, 2020.

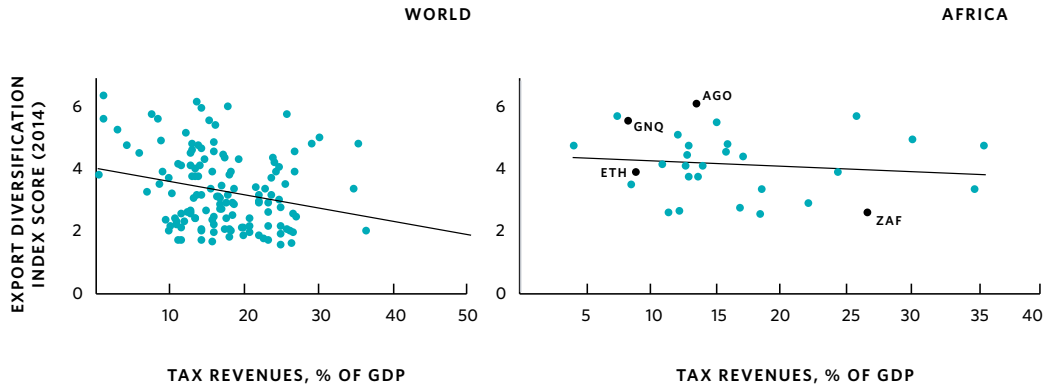
due to structural factors such as labor scarcity or lack of market access.⁸⁶ Consequently, only a few resource-rich developing countries have managed to successfully diversify economically. Ian Coxhead identifies only five such cases (Chile, Indonesia, Malaysia, Sri Lanka, and Thailand).⁸⁷

The concept of fiscal diversification as it relates to inducing or supporting structural economic change and transformation remains underexplored in economics literature, and analyses are constrained by data limitations. Drawing on available data, figures 14–16 show a positive correlation between tax revenue as a percentage of GDP, government spending as a percentage of GDP, and government subsidies as a share of government spending and export diversification. Various explanations can be provided. The data may be suggesting that African governments are not leveraging their fiscal tools in a way that leads to economic diversification. It could also be suggesting that governments, through taxation and spending, are crowding out economic actors from nondominant sectors. Of course, the impact of depending on natural resources for revenues and crowding out other sectors cannot be excluded. It is also possible that governments shield the dominant sectors of their economy from taxation or support them via government spending, which could reinforce economic concentration.

While exploring how country-specific characteristics are associated with diversification is useful, it does not account for subnational heterogeneity within countries themselves, which can sometimes be stark. It is common for countries to contain islands of relative economic diversification and produc-

FIGURE 14

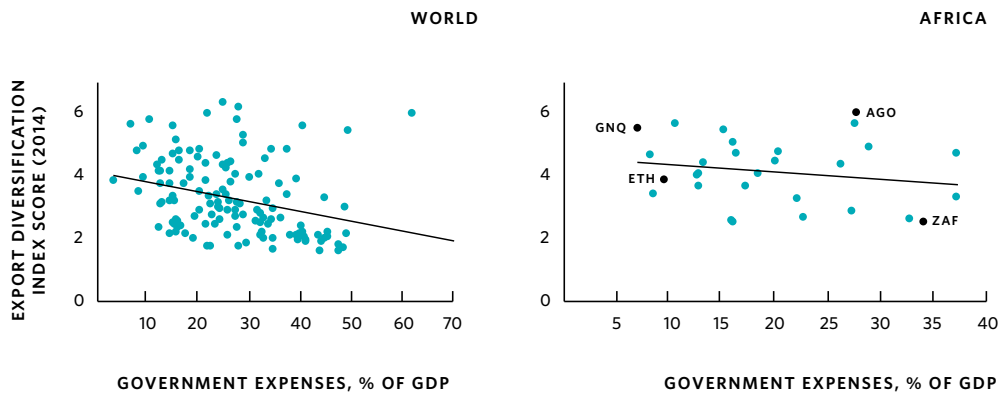
Tax Revenues and Diversification Are Positively Linked



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org>, accessed September 14, 2020.

FIGURE 15

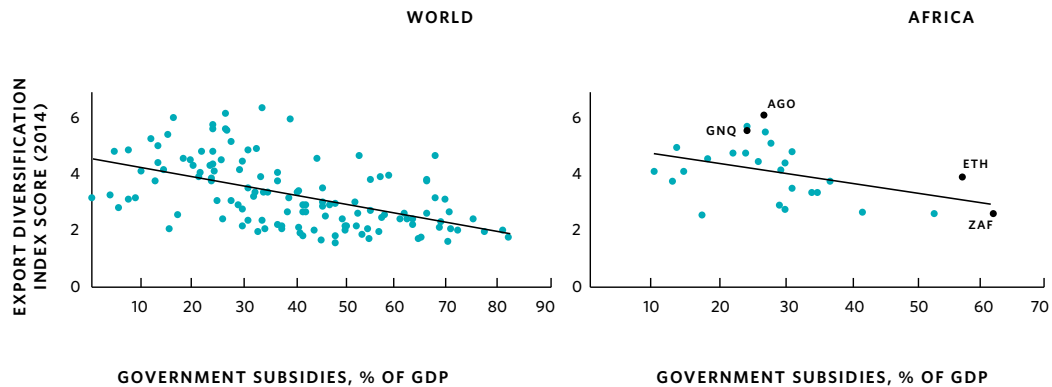
Government Expenses and Diversification Are Positively Associated



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org>, accessed September 14, 2020.

FIGURE 16

Government Subsidies Are Positively Associated With Diversification



SOURCE: Authors' calculations using data from the World Bank's World Development Indicators, <https://databank.worldbank.org/source/world-development-indicators>; and the International Monetary Fund's database, <https://data.imf.org>, accessed September 14, 2020.

tivity surrounded by a proverbial sea of low-productivity activity. This is particularly salient in Africa, which has high levels of interregional inequality at the subnational level.⁸⁸ In fact, according to Christian Lessmann and Andre Seidel, who employ worldwide satellite nighttime light data to construct a measure of regional inequality, Africa has the world's highest levels of regional and subnational inequality.⁸⁹ They also found that the African countries with the highest levels of interregional inequality are those with access to the sea, particularly in East and West Africa. These areas of productivity in African countries are often located along the coast while, further inland, huge swaths of land are used for subsistence farming. Commonly cited countries exhibiting this phenomenon are Benin, Côte d'Ivoire, Ghana, Nigeria, and Togo. Various factors contribute to this situation, such as frequent droughts inland, coastal regions' increased access to the sea, and historic patterns of inequality that have persisted in these countries.⁹⁰

Within other countries, economically productive and diversified areas, or growth poles, are clustered around the national capital, while the hinterlands predominantly engage in subsistence agriculture. This is the case in Ethiopia, Madagascar, and Rwanda. This phenomenon often takes place in countries that are home to special economic zones or export-processing zones, as the special tax-exempt status of such zones can make them more competitive than other areas. Both cross-country analyses and country-level policy recommendations are of limited utility in cases where stark interregional inequalities and corresponding diversification gaps persist. By looking at national-level measures of diversification like the ones presented in this paper, central governments may conclude that a lack of diversification is a problem at the national level when it may in fact be more predominant at a subnational level and necessitate different policy responses.

Conclusion

The literature surveyed in this paper make clear that economic specialization, as prescribed by classical international trade models, is not necessarily sufficient for sustained economic development. As articulated by Lagarde and Ndung'u, economic diversification, which is associated with structural transformation, is critical to the dynamism of African economies as they pursue increased productivity, per capita income growth, and shock resilience. Diversification is also associated with enhanced governance outcomes, though the literature that empirically explores the causal link between diversification and governance remains scant and inconclusive.

Indeed, multiple dimensions of economic diversification, including fiscal diversification, are underexplored and underemphasized in the economics literature—despite, for example, that government revenues and public spending targets can decisively shape a country's economic trajectory. Either of these three dimensions of diversification—GDP, exports, and fiscal—yields different insights. For example, the economies of major oil exporters might appear more concentrated when exports, rather than production, are used to assess diversification. Nigeria provides a striking example of that phenomenon—oil production accounts for roughly 10 percent of its GDP but close to 90 percent of its exports and 60 percent of its fiscal revenues.⁹¹

Two sets of indices are relevant to measuring economic diversification. The Theil Index has the potential to capture the fiscal dimension of economic diversification—along both the intensive and extensive margins. Yet, efforts to take advantage of this feature have so far been concentrated on trade diversification. The PEFA framework on PFM also has the potential to measure fiscal diversification. But to do so, the framework would need to be used to assess fiscal or expenditure policy to determine the extent to which spending is sustainable, can catalyze economic transformation in relevant sectors, and can achieve other economic policy objectives.

To identify the specific policy options for Africa, the structural characteristics of countries in the region should be taken into account to draw insights from these dimensions and measures of economic diversification. After all, Africa's fifty-four countries have vastly different income levels along with distinct endowment, governance, and institutional structures. Indeed, while some global trends are also at play among African countries—for instance the sharply negative relationship between resource dependence and diversification—others are not. More specifically, the relationship between per capita GDP and diversification follows a U-shape globally but not in Africa. Furthermore, while government effectiveness appears to positively correlate with diversification, additional studies are needed, as the relationship has not been empirically tested. Finally, due to subnational differences, especially along urban-rural or coastal-inland divides, the challenges of economic diversification can assume a spatial dimension in some African countries; this dimension merits further research.

Overall, more studies are needed to explore fiscal revenues and expenditures as significant indicators of economic diversification. That said, to better identify appropriate policy solutions, these improved definitions and measurements of economic diversification must be complemented by better data, including at the subnational level.

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Notes

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