

Growth Diagnostics and Competitiveness Study of the Manufacturing Sector in Tanzania



Bailey Klinger

Miguel Santos

Camila Arroyo

Ekaterina Vashkinskaya

May, 2023



Co-funded by the European Union



This report is part of an intervention supported by the Investment Climate Reform (ICR) Facility. The ICR Facility is co-funded by the European Union (EU), the Organization of African, Caribbean and Pacific States (OACPS) under the 11th European Development Fund (EDF), the German Federal Ministry for Economic Cooperation and Development (BMZ) and the British Council. The ICR Facility is implemented by GIZ, the British Council, Expertise France, and SNV. This specific intervention is led by the Growth Co-Lab on behalf of SNV.

The contents of this publication are the sole responsibility of the author and do not necessarily reflect the views of the donors or the implementing partners.

The ICR Facility supports public and private stakeholders in African, Caribbean and Pacific (ACP) countries in creating a more conducive, sustainable and inclusive business environment and investment climate.

More information: www.icr-facility.eu

Implemented by



This report was written by Growth Co-Lab at the London School of Economics and Political Science



Acknowledgments

This report has been prepared by the Growth Co-Lab team composed of Bailey Klinger (Research Partner Facilitator), Miguel Santos (Director Growth Co-Lab), Ricardo Hausmann (Harvard University), Douglas Barrios (Director, Policy Research Growth Lab), Camila Arroyo (Policy Officer), Ekaterina Vashkinskaya (Policy Officer), Ana Abad (Research assistant) and Fernando Pino (Research Assistant). The team has benefited from the support of the Confederation of Tanzania Industries, particularly Leodegar Tenga, Anna Kimaro, and Isack Msungu for their support in conducting field research. The team also received key support from the European Commission, particularly Janet Mortoo, the World Bank Tanzania Country Office team, particularly Rob Swinkels, and SNV, particularly Frederic Bustelo. The team also received key support from the Ministry of Investment, Industry and Trade (MIIT) in the coordination and facilitation of the study. The team was particularly supported by Dr. Wilson Lugano, Eng. Caroline Lyimo, and Yusuf Mwiye. The team also received crucial databases from the National Bureau of Statistics, and the Bank of Tanzania. The researchers composed of Xinshen Diao, Mia Ellis, Margaret McMillan, and Dani Rodrik provided useful discussions as well as the ASIP panel data, which greatly facilitated the work done by the consultants.

Overview

The Tanzanian economy experienced a significant acceleration over two decades, growing at a compounded annual growth rate of 6% between 1998 and 2018. Within the context of such a positive performance, it is noteworthy that the manufacturing sector did not increase its share of gross domestic product (GDP), which lingered below 10% throughout the same period. The formal manufacturing sector is capital-intensive and highly productive but stagnant, while employment in Tanzania remains concentrated in agriculture and – to a lesser degree – services. Despite having attractive nearby opportunities for diversification, manufacturing exports are unsophisticated and their contribution to the export basket remains small. This study deploys the Growth Diagnostic framework within Tanzania’s manufacturing sector to promote a better understanding of the reasons why the country has failed to achieve its industrialization goals.

Growth Diagnostics is a methodology initially proposed by Hausmann, Rodrik, and Velasco (2005), as a framework to prioritize reforms that address the most pressing constraints preventing growth. The authors proposed a simple framework where investment and economic growth are determined by the returns to factor accumulation, the appropriability of these returns and the costs of financing. In a world where production factors tend to be more complements than substitutes, the factor in the shortest relative supply – the most binding constraint – is the one with the highest estimated growth payoff and shall be prioritized within the allocation of policy attention and government resources. The framework has evolved into a set of data-driven tests examining all key production inputs, including finance, human capital, infrastructure, government failures at the macroeconomic and microeconomic level, as well as coordination and information failures.

Growth Diagnostics exercises are better conceived as iterative processes, fertile ground for active collaboration among domestic government, private stakeholders, and technical experts. Data-driven insights and findings derived from econometric analysis are successively discussed, until a common diagnosis and an internally consistent policy plan is reached. In this study, we have deployed the Growth Diagnostic framework to identify the most binding constraint within the manufacturing sector in Tanzania.

Growth diagnostic findings

The most binding factor constraining returns to investment in manufacturing in Tanzania is the availability and quality of electricity supply. Electricity is the number one challenge faced by large firms, as electrical outages are frequent and expensive for the manufacturing sector. Firms plan their production schedules and decide on plant locations based on power reliability. Yet the country has specialized in manufacturing subsectors more intensive in the use of electricity because tax and trade policy have been used to partially offset the infrastructure challenges. Moreover, there is significant evidence that investments in electricity generation have somewhat reduced this constraint over time, and there is a pipeline of new generation projects that – if completed successfully – could further alleviate it. In terms of other infrastructure, Tanzania seems to have made significant strides in improving the quality of transportation and communications infrastructure, and while there are some inefficiencies and room for improvement – especially related to air transportation – the country does not seem to be performing worse off than its peers.

Microeconomic failures such as access to land, labour regulations, and red tape seem particularly relevant for international investors and exporters. Despite its low level of income, formal wage levels in Tanzania are not a competitive advantage to attract international investment. The taxation system is stuck in an equilibrium with relatively higher tax rates, a plethora of exemptions, and an overall low tax collection. Land acquisition is particularly complicated for foreign investors, as the current legislation does not allow direct ownership. Moreover, the implementation of Export Processing Zone (EPZ) and Special Economic Zone (SEZ) schemes has failed to provide serviced land, and in practice have had little impact, with many firms in these zones facing steeper regulatory burdens. As foreign investors and manufacturers for export are important for new investment and manufacturing growth, these constraints are particularly important. Other microeconomic failures, such corruption and crime, macroeconomic failures such as inflation and exchange rate volatility, and market failures are all discarded as potential constraints.

Our diagnostic tests indicate that access to finance is not the most binding constraint in Tanzania today. Sectors less intensive in the use of finance do not seem to be thriving in Tanzania, but rather the opposite. Tanzania is surprisingly capital intensive for its level of income, and the segments of the broader economy and manufacturing sector that are more intensive in finance tend to be larger and grow faster, incentivized by tax and trade policy. Most tellingly, changes in the cost and supply of finance through time are not associated to corresponding changes in investment or output, neither for the economy broadly nor for the manufacturing sector in particular.

This does not mean that all is well in the country's financial system. Tanzania enjoys a high savings rate, but those savings do not make it into the financial system. Given that capital flight is not persistent or even large in Tanzania, that is likely a result driven by the needs of the large cash-based informal economy. That results in low levels of credit to the private sector despite a reasonably competitive banking system. Real interest rates are persistently high, and the limited supply of credit is a common complaint of firms in the country. This is particularly harmful to smaller firms who can't finance internally through retained earnings or tap into foreign savings. Improvements to financial intermediation and access to international finance would address what may become a binding constraint in the future, if and when restrictions associated to electricity supply are released and demand for investment in manufacturing resumes.

While we have uncovered evidence suggesting that the manufacturing sector requires an increased supply of workers with vocational training and continued access to skilled foreign workers, human capital is not holding down returns to investment in manufacturing. Educational attainment is expanding, the returns associated to schooling are shrinking, and are particularly low in the manufacturing sector. The unemployment rate among those with secondary education is high, and for those with tertiary education is rising quickly in the face of increasing supply, indicating that lack of demand for skills might be more of a problem than their supply. Moreover, the availability of skills is one of the least-mentioned major constraints that Tanzanian firms complain about. Fewer firms are offering their own training to compensate for insufficient public training, and there is no relationship between sector dynamics and educational attainment.

In terms of investors' ability to appropriate the returns to their investment, the strongest evidence points to the role of trade policy in compensating firms for other constraints. This allows existing manufacturers to capture a large share of domestic value added, but they remain uncompetitive in the export market. Taxation is relatively higher on labour and lower on capital, skewing returns away from the country's relative labour abundance and towards its scarce capital. This is reinforced by trade policy which supports capital and electricity-intensive firms, which thrive in the protected domestic economy while remaining uncompetitive in international markets. Such a policy also increases operating costs for other local firms who can't import lower-cost inputs. These set of policies go a long way in explaining puzzling features of Tanzania's economy.

Tanzania's Manufacturing Syndrome

The structure of Tanzania's manufacturing sector today has been shaped by decades of inward-oriented policies. We have uncovered significant evidence suggesting that import substitution (now referred to as localization) continues to be at the core of Tanzania's industrial policy and shapes the incentives for the manufacturing sector today. The subscription to international agreements and trade blocks coexists with an environment that imposes a high regulatory burden on trading industries and restricts trade by means of tariff and non-tariff barriers, achieved by filing numerous exceptions to those treaties that offer protection for individual products and entire domestic industries.

Tanzania has managed to develop an inward-oriented manufacturing sector that has made a significant contribution to employment and value added, but remains uncompetitive from an export standpoint. Higher degrees of protection for sub-sectors within manufacturing are associated with higher contributions to value added but lower contributions to exports. The problem is not the efficiency of these policies to deliver growth in the past, but rather that a) the space for further manufacturing growth through import substitution industrialization (ISI) is small

and insufficient to meet the stated goals in terms of structural transformation and share of manufacturing in GDP, and b) growth has been concentrated among a small number of highly productive capital-intensive firms have added few new employment opportunities.

Protective policies are biased towards energy and capital-intensive sectors and display a clear anti-export bias. Sectors that enjoy higher levels of protection and represent large shares of value added tend to be more capital intensive and display a moderate to high intensity in the use of energy. That in turn helps in explaining the findings of Diao et al. (2021), who documented that the most productive firms in Tanzania are capital-intensive but do not expand employment, whereas the least productive firms within manufacturing did manage to create employment at low levels of wages. The energy and capital-intensive bias of Tanzania's manufacturing is particularly relevant because these are two areas that display significant symptoms of binding constraints.

Aside from these areas, there are also challenges to appropriability of returns coming from government failures, particularly microeconomic risks from taxes, red tape, and land availability. The signals for these constraints are not as strong as for electricity, but they seem particularly binding for international investors and exporters, and appear to further orient production towards inwardly focused sectors that are capital- and electricity-intensive – in a labour-abundant country with expensive finance and electricity shortages.

Efforts to promote export competitiveness in the manufacturing sector by means of EPZs and SEZs have failed to address the underlying constraints and resulted in significant corporate and withholding tax holidays for protected firms. EPZ and SEZ were established with the goal of promoting investment and exports and offered various benefits that included 10-year corporate and withholding tax holiday, VAT exemptions on raw materials and utilities, on-site customs inspection, eased immigration processes for high-skill foreign workers, unconditional transferability of profits, and access to one-stop-service center by EPZA. The most important constraints firms were facing – access to reliable electricity, serviced land, and relief from excessive regulatory burdens – have not been addressed by these zones, and according to various sources, even deteriorated in the case of red tape. In time, many firms have filed and become SEZs as stand-alone units, allowing them to benefit from tax benefits without either contributing to promoting economies of agglomeration nor increasing exports.

Failure to address the most binding constraints has in turn created a rationale for upholding protection, which in turn reinforces the capital and energy-intensive bias of the manufacturing sector. While protective trade policies have enabled firms to thrive in the domestic market, the persistence of the constraints identified renders them less competitive in the international arena. That persistence requires continuous protection for these firms to survive in the face of otherwise cheaper imports, and for government to maintain current domestic value added and employment in manufacturing. As a result, Tanzanian manufacturing remains uncompetitive in global markets, unable to tap into international demand to further its growth, yet unable to move away from current partners of protection. These trends have led to a stable but inefficient equilibrium, where growth and productivity are highly constrained by the size of the domestic market but must be maintained because of the high potential social and economic costs of lifting trade protection.

General policy recommendations

- **Rethink the incentives provided to manufacturing firms and craft an internally consistent plan to articulate the various relevant policy elements.** The strategy should consider the manufacturing sub-sectors in Tanzania with the highest export growth potential and the most binding constraints that are preventing investment in these sectors. There are examples of countries that have protected certain industries in the domestic market without generating an anti-export bias. Thus, the strategy might not necessarily imply the rapid removal of tariff and non-tariff barriers, but it does entail revising what sectors are protected and what are the set of underlying incentives that are consistent with Tanzania's goals for industrialization and structural transformation.

- **In revising the incentives framework, the government must strike the right equilibrium and make parallel progress along two distinct policy dimensions.** On the one hand, it must remove or alleviate the electricity constraints that are endemic to all manufacturing sectors as well as other constraints that might be hindering productivity in specific sub-sectors, such as access to serviced land, finance, regulatory inefficiency, and red tape. On the other hand, it would have to consider gradually phasing out tax holidays and trade protections that were put in place to compensate domestic producers for those constraints as they are addressed. In the process, some additional incentives could be provided such as eliminating tariffs on intermediate inputs for exporting manufacturing firms.
- **As these issues are hard to address at the country level, special economic zones have the potential to become complete solutions for export-oriented investments.** Government efforts should be focused in implementing effective interventions to address the shortcomings identified in the 2019-2024 Strategic Plan for EPZA.
 - **Target high-export growth potential sectors:** We provide an initial roadmap based on the Economic Complexity framework, prioritizing clusters on chemicals (including plastics in primary forms, lubricants, polyamides, hydraulic fluids, make-up preparations, dental hygiene products, and cleaning products, among others), machinery and equipment (manufacture of machinery for mining, quarrying and construction, pumps, bearing, gears, among other products), medical instruments, and textiles.
 - **More and better electricity:** It is important to secure the provision **reliable and competitive electricity supply** that affects manufacturing more broadly, plus other factors of production that might be hindering the prospects of specific sub-sectors. The most successful examples of these type zones tend to incorporate private investors either as direct owners of the zones or by means of term-concessions, granted by open bids that uncover information and reduce the likelihood of mismatches between the allocation of zones and availability of specific inputs, such as labor (skilled or unskilled) and trade infrastructure.
 - **This initial roadmap must be validated with domestic stakeholders and can potentially be filtered by criteria that is relevant to the specific context of Tanzania.** Two obvious candidates are: 1) **Electricity intensity:** While the country completes the investment and regulatory framework required to remove the electricity constraint, it is wise to prioritize manufacturing industries that are less intensive in the use of energy, and 2) **Environmental equilibrium:** To promote manufacturing industries that are consistent with environmental standards, the environmental metrics at the product level coming US Environmentally Extended Input-Output (USEEIO) matrix can be used.

