



Structural Transformation and Export Diversification in Southern Africa



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All references to dollars (\$) are to United States dollars, unless otherwise stated.

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1. INTRODUCTION

What determines economic disparities among countries and how can we move forward to reduce these income gaps? The development economics literature has studied how countries get rich since the time of Lewis (1954). This literature primarily attributes economic development to the process of structural transformation – economies grow as resources shift towards progressively more productive sectors. The speed at which this transformation occurs, in turn, determines why some countries get rich faster than others.

The forces of structural transformation operate at two levels. At the aggregate level, the transformation occurs as resources are reallocated from low-productivity agriculture to high-productivity industry, and eventually from industry to services after a certain income threshold is achieved (Kuznets, 1973).¹ In the early phase of development, manufacturing plays a particularly important role in fostering those linkages through which the nexus between growth and structural transformation is sustained (UNCTAD, 2016a). At the microeconomic level, significant productivity differences exist within each of the three broad sectors. Whether the economy transitions to producing more dynamic activities within a sector is conditional on the institutional environment and the know-how that is accumulated through comparative advantage in the production of similar goods. This suggests that development is a path-dependent process that requires deliberate policy choices to usher in economic transformation.

Recently, the role of structural transformation in promoting sustainable growth has gained renewed interest, as reflected in the promotion of sustainable and inclusive industrialization under Sustainable Development Goal 9 of the 2020 Agenda for Sustainable Development (United Nations Economic and Social Council, 2017). This is attributed to many developing countries either having failed to diversify and deepen their production structure, as in the case of African nations, or experienced premature deindustrialization, as has been the case of Latin American countries (UNCTAD, 2016a).

This paper analyses the structural transformation and export structures of five Southern African economies – Mauritius, Mozambique, South Africa, the United Republic of Tanzania and Zambia. The economic transformation is assessed in terms of both domestic

output and international export composition. The focus on export structures is motivated by three factors. First, recent literature on structural transformation has shown export structure to be a good predictor of economic growth and therefore one of the possible explanations of cross-country income disparities (Hausmann et al., 2007; Hausmann et al., 2011). Second, countries generally export those goods where they have a comparative advantage, hence examining the export structure can help to understand the underlying knowledge or institutional advantages that make a country competitive (Hausmann and Klinger, 2007; Hidalgo et al., 2007). Finally, in the absence of disaggregated, cross-country production data, export data provide a useful approximation of the productive structures in an economy.

The rest of the paper is structured as follows: Section 2 summarizes the structural transformation literature. Section 3 gives an overview of the economic and export trends of the five economies under scrutiny. Section 4 analyses structural change and export structures for each of them. In section 5, we propose an experiment of regional integration, which aims at understanding how export diversification opportunities would change if the five countries would act as a single economy. Section 6 concludes.

2. RELATED LITERATURE

The first generation of growth models used two distinct approaches to explain the growth phenomena (McMillan and Rodrik, 2016). The first approach has its roots in development economics and focused on the dual characteristic of the economy (Lewis, 1954; Ranis and Fei, 1961). According to these models, the economy comprises traditional (agriculture) and modern (industry) sectors. The traditional sector employs primitive technology and remains backward. The modern sector, on the other hand, is characterized by capital accumulation, innovation and productivity growth. Economic growth therefore depends on the rate at which labour and other productive resources are shifted from the traditional and low-productivity sector to the modern one – a process of “structural transformation”. Structural transformation is particularly beneficial for developing countries because their structural heterogeneity – that is, the combination of significant intersectoral productivity gaps in which high-productivity activities are few and isolated from the rest of the economy – slows their development. Economic activities also differ in terms of the strength of their linkages with the rest of the economy. In developing economies, the weak linkages between high- and low-productivity activities that make up the

¹ Following UNCTAD (2016a), industry is defined as a composite of manufacturing, mining and quarrying, construction and utilities.

bulk of the economy reduce the chances of structural transformation and technological change.

In this framework, structural transformation can generate both static and dynamic gains. The static gain is the rise in economy-wide labour productivity, as workers are employed in more productive sectors. Dynamic gains, which follow over time, are due to skill upgrading and positive externalities that result from workers having access to better technologies and accumulating capabilities.

The second approach to economic growth is founded in the neoclassical growth models of Solow and its later variants (Solow, 1956; Grossman and Helpman, 1991). According to these models, various economic activities are structurally similar and can be aggregated into a single representative sector. In their set-up, growth depends on the incentives to save, capital accumulation (both physical and human) and innovation by developing new products or processes and economic growth is seen as essentially a process of “within-sector transformation”.

Empirical literature focused mainly on the long-term growth trends in the developed countries. Herrendorf et al. (2013), for example, use data on 5 non-European Union and 15 European Union countries from 1970 to 2007, and establishes the typical pattern of structural transformation. The share of the agricultural sector decreases with the level of development, while the share of the services sector increases at all levels of development. The share of the manufacturing sector, on the other hand, follows a hump-shaped pattern. The manufacturing share increases until a certain level of development is achieved and decreases thereafter. In the same period, Total Factor Productivity growth is observed in all three broad sectors of the economy, suggesting a contemporaneous transformation that occurs within each sector. In particular, it is the agriculture sector that experiences the largest productivity growth, which frees up resources for the manufacturing and services sectors.

More recently, the structural transformation literature has abstracted from the broad sectoral dichotomies, concentrating on the complexity of productive structures that are embedded in an economy (Hausmann and Klinger, 2007; Hausmann et al., 2007; Hidalgo et al., 2007). The intuition is that countries cannot produce goods for which they do not possess the underlying knowledge or capabilities. This puts learning, capabilities and technological change at the centre of the structural transformation processes. This literature sees production possibilities as a space in which economies move. More specifically, the

“product space” is an illustration of all goods exported in the world, where the distance between two goods is defined by the probability of producing one of the goods if an economy already produces the other. In this framework, structural transformation entails moving from a good that countries already produce to another one that is close enough to it, where “close enough” is defined based on the knowledge and capabilities needed to produce a certain good. Hence, in the product space, goods are close if the knowledge used to produce them is similar, and goods are far away if producing them requires completely new sets of skills. This ultimately configures a network of goods, a sort of map in which economies move from one point to another, leading to diversification and production of increasingly complex goods.

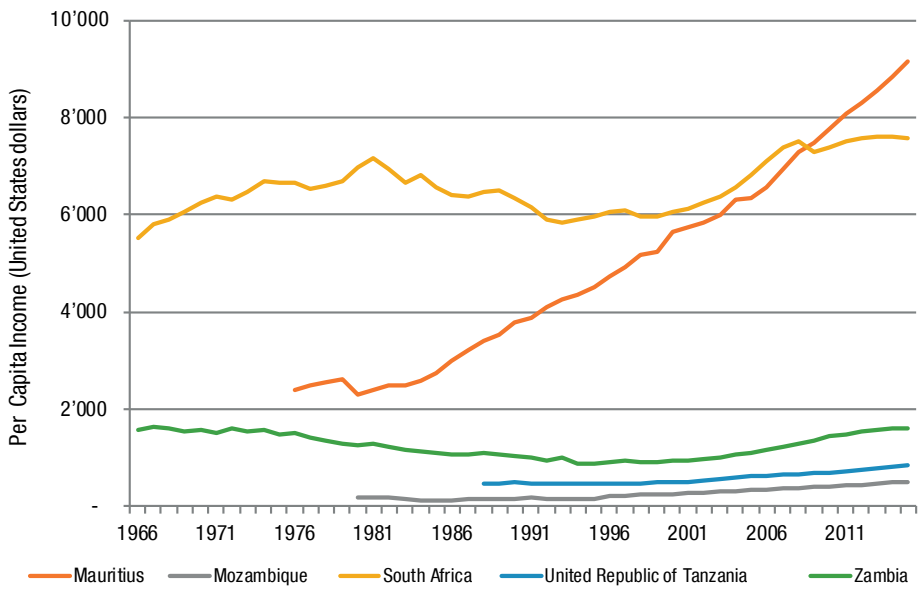
3. TRENDS OF ECONOMIC AND EXPORT GROWTH IN THE REGION

The economies under assessment have some common attributes. Except for Mauritius, they are rich in natural resources, particularly in extractive resources. Their workforces are predominantly employed in agriculture, although they have been evolving into service-led economies. Their export basket is dependent on few commodities and, generally, manufacturing growth has been difficult to achieve. Mauritius and South Africa are the two exceptions, having developed a stronger manufacturing sector and more diversified export basket. Mauritius in particular is an anomaly. Scarce in natural resources, it has followed the trajectory of East Asian economies in industrializing rapidly. Its manufacturing sector has generated considerable employment, while industrial policies have created new exporting opportunities (see box).

Significant per capita income variation exists among these five economies (figure 1). Due to rapid economic growth, Mauritius overtook South Africa in the late 2000s and became the richest economy of the group. South Africa has witnessed periods of economic growth, but did not experience the same catch-up industrialization process that has been observed in Mauritius. In contrast, Zambia, the United Republic of Tanzania and Mozambique have achieved limited economic growth, with per capita income stagnating at low levels.

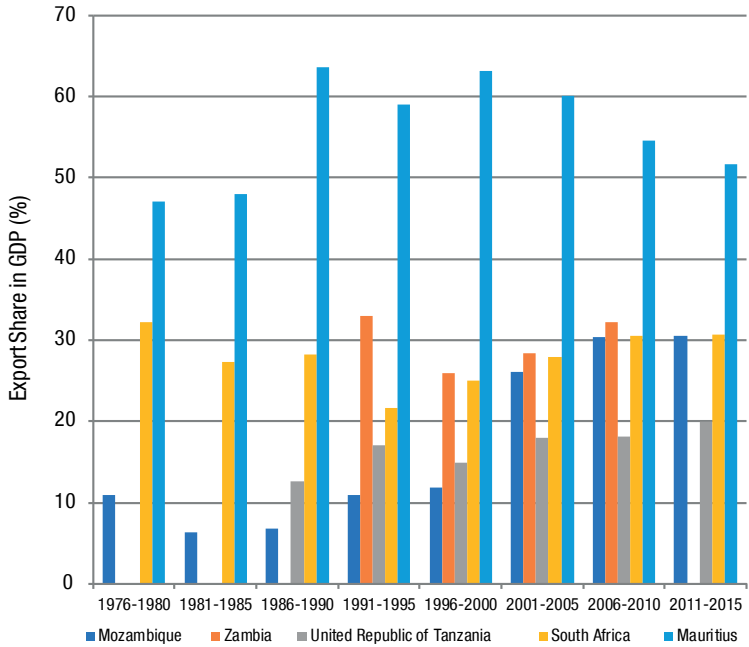
The Mauritian structural transformation process has been accompanied by export growth, with exports having reached 65 per cent of the country's GDP in 1990. The role of exports in the other four economies has been more limited (figure 2). In South Africa and Zambia, export share has hovered around 30 per cent

Figure 1 Incomes per capita, 1966–2015



Source: Authors' elaboration based on World Development Indicators.
 Note: Gross domestic product (GDP) per capita at constant 2010 United States dollars.

Figure 2 Exports, as a share of GDP, 1976–2015

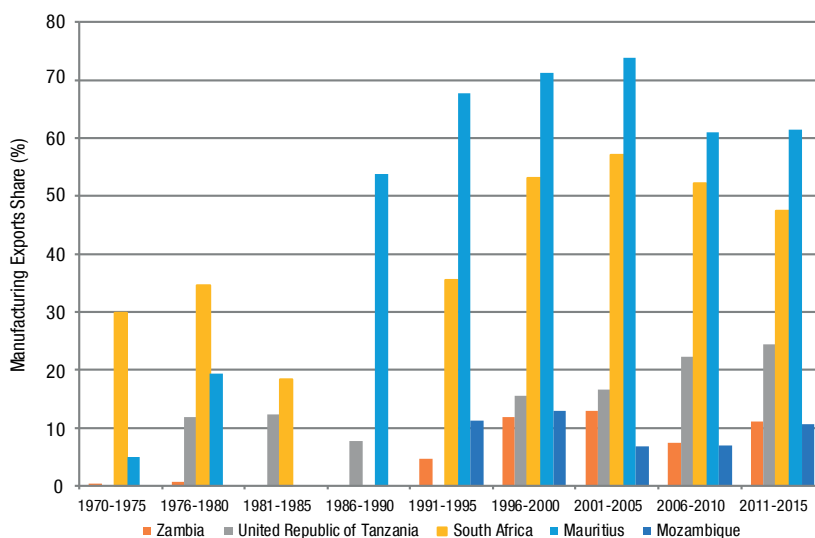


Source: Authors' elaboration based on World Development Indicators.

of GDP, while in the United Republic of Tanzania it reached a peak of only around 20 per cent in 2012. Mozambique has experienced a rapid increase in its export share since the 1990s, perhaps driven by the surge in the international demand for commodities.

To better understand how structural transformation has affected export growth in these economies, figure 3 depicts manufacturing exports as a share of total merchandise exports. Mauritius and South Africa stand out from the rest of the group. In

Figure 3 Manufacturing exports, as a share of merchandise exports, 1970–2015



Source: Authors' elaboration based on World Development Indicators.

Mauritius, the share of manufactured goods in total exports increased from 5 per cent in the 1970s to 74 per cent in the early 2000s. In contrast, South Africa has maintained a high share of manufacturing

exports since the 1970s. The remaining three economies started off from low manufacturing exports bases and have not been able to achieve significant growth.

4. STRUCTURAL TRANSFORMATION AND EXPORT DIVERSIFICATION OPPORTUNITIES

This section analyses the structural change and export diversification opportunities of Mauritius (section 4.1), Mozambique (section 4.2), South Africa (section 4.3), the United Republic of Tanzania (section 4.4) and Zambia (section 4.5).

4.1. Mauritius

Mauritius has undergone a successful process of structural transformation over the last five decades; the productive resources were first reallocated from agriculture to manufacturing, and then from manufacturing to services after reaching a relatively high per capita income level (UNCTAD, 2016a).

Figure 4 illustrates the structural transformation process in Mauritius for the period from 1970 to 2012.

Mauritius' successful diversification from sugar to textiles

Mauritius is a case of successful catch-up based on exports. Export growth has been at the core of its industrial strategy since the early stages of development. The country managed to diversify its export basket

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