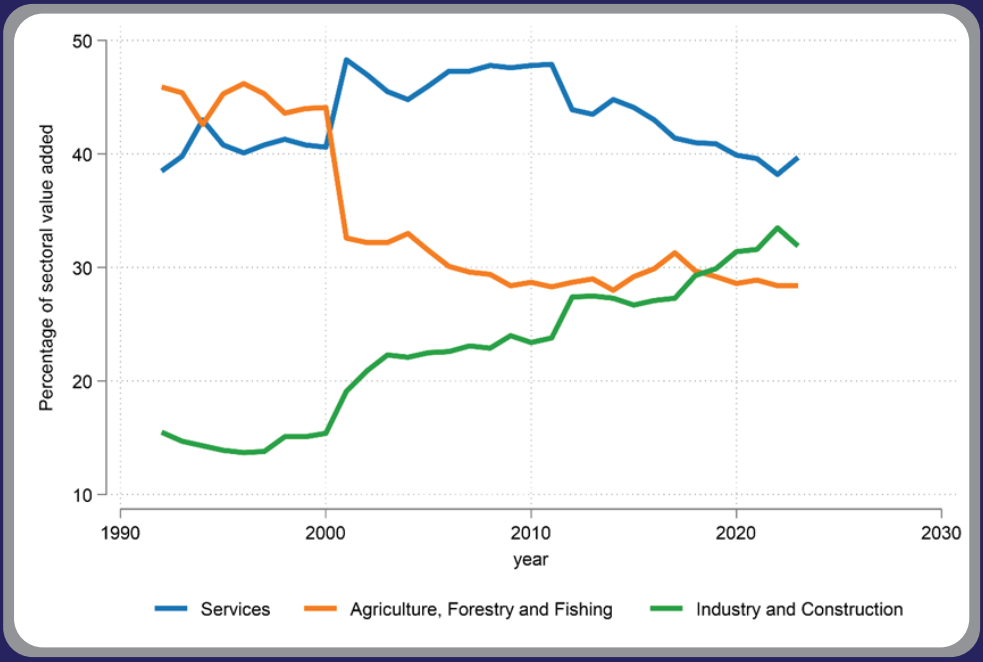
The role of the services economy and trade in economic structural transformation and development trajectory in Tanzania

Asiya Maskaeva & Mgeni Msafiri



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1. INTRODUCTION

1.1 Background

Tanzania has not made significant progress in achieving inclusive growth-enhancing structural transformation despite considerable investment since 2011, and more broadly, the last 40 years (NBS, 2012; BOT, 2024; KPMG, 2023). In terms of sectoral transitioning, the economy has prematurely deindustrialized, with manufacturing's contribution to gross domestic product (GDP) declining from 11.4 per cent in 1972 to 7.8 per cent in 2021 in favour of services (and mining). Furthermore, the remarkable economic growth performance achieved over the last decade was accompanied by an average annual growth in labour productivity of approximately 4.1 percent. More than three-quarters of this labour productivity growth is attributed to structural change (Ellis et al., 2018). The remainder is attributable mainly to within-sector productivity growth in the agricultural sector. The growth attributable to structural change is almost entirely explained by a rapid decline in the agricultural employment share and an increase in the non-agricultural private sector employment share (Diao et al., 2016). However, two-thirds of employment growth in the private non-agricultural economy is characterized by small and mostly informal firms or individuals in low-productivity, low-innovation, and limited-growth sub-sectors, including trade and services (Ellis et al., 2018). Trade services encompass retail, wholesale, and the food and beverage sector, which in Tanzania accounts for the largest share of the informal sector, comprising fifty-five percent of informal businesses (Steiler, 2021). Although these service sectors positively affect the overall labour market structure in Tanzania by absorbing labour from agriculture, their inherent value addition is minimal, thus limiting their savings and expansion potential.

The potential of the service economy and trade for economic transformation, growth, poverty eradication, and job creation are recognized in successive development blueprints in Tanzania, including in its long-term perspective plan (2010/11-2024/25) and the forthcoming national development vision to 2050. Data shows that the share of services in GDP is growing. Some service sub-sectors, such as arts and recreation, accommodation and food services, transport and communication, finance, and insurance, are among the fastest-growing and often involve cross-border transactions; however, many countries focus on manufacturing goods or non-tradable services only.

Cross-border trade in services, particularly in commercial services (i.e., communications and information technology, finance, and other business services, which mainly relate to business consultancy), is on the rise, mainly due to digitalization. Nevertheless, there is limited analytical attention to the increased role of services in global value chains (GVCS) and their interconnectedness with the downstream industries. Services are often domestically produced and then exported indirectly as components of other goods or services at the final stages of the value chain or exported as a final good.

The expansion of global value chains over the past two decades has increased the gap between export value and domestic value-added, reducing the relative contribution of exports to the country's economic growth, particularly in Africa (REPOA, 2022; Chung, 2015). Thus, policies now need to target creating value-added rather than increasing gross exports and focus on enhancing the competitiveness of input and production activities. In particular, regulatory reform is necessary in the service sector to eliminate unnecessary obstacles to competitiveness.

The primary objective of this paper is to provide a comprehensive overview of Tanzania's position in the global economy, including its level and changes, through the lens of Gross Value Chains (GVCs), with a focus on the service sector. Studying the Tanzanian experience is not only interesting for its policy implications, but also because Tanzania is representative of small, open economies that rely mainly on trade. In particular, it has been involved in global supply chains since its independence, utilizing this strategy as a core component of its economic growth. Despite this long history, the country lacks relevant statistics on the extent of Tanzania's engagement in vertical linkages across countries and the consequences of such engagement.

1.2 Objectives

1.2.1 Main Objective

The primary objective of this study is to investigate the impact of changes in the composition of services and trade sub-sectors on economic growth and transformation in Tanzania.

1.2.2 Specific Objectives

The specific objectives of the study are:

i) To conduct a decomposition analysis of services trade (including exports) to establish Tanzania's trade profile.

ii) To examine the determinants of the increasing share of services in GDP and the trends in the growth of its key subsectors.

iii) To conduct a detailed analysis of the role of services in value chains - drawing on new world input-output tables and value-added trade databases.

iv) To examine how services affect downstream sectors, focusing on the existence of Global Value Chains (GVCS) and analysis of trade-in-value-added data to help understand dynamic structural change and deindustrialization.

v) Based on a thorough analysis of data, policy recommendations on how to optimize backwards and forward linkages between the service, industry, and agriculture sectors.

2. ROLE OF SERVICES IN THE ECONOMY AND GLOBAL VALUE CHAINS: LITERATURE REVIEW

2.1 The Role of Services in the Economy

Services play a crucial role in the economy, contributing significantly to GDP, employment, and productivity (Heuser & Mattoo, 2017). Over the past few decades, economies have shifted from manufacturing-based structures to service-oriented models, particularly in advanced and emerging markets. Empirical studies highlight the increasing role of services in driving economic growth. Research suggests that as economies develop, the share of services in GDP increases, often surpassing that of manufacturing and agriculture. For example, Dabús et al. 2021 examined the structural transformation of economies, showing that the expansion of the service sector is linked to sustained economic growth. Services account for an increasing share of global GDP, with industries such as finance, healthcare, education, and technology driving economic growth.

Fisher (1933) and Clark (1940) introduced the concept of the service sector as a distinct economic activity. It became part of the economy, alongside the primary (agriculture, fishing) and secondary (mining and manufacturing) sectors, and is referred to as the residual tertiary (immaterial service) sector. Furthermore, the International Standard Industrial Classification (ISIC-rev.4[1]) incorporated the suggestions of Fisher and Clark in its classification of the services sector as follows: wholesale and retail trade, hotels and restaurants, transport, storage and communication, financial intermediation, real estate, renting and business services, public administration and defence, education, health care and social work, and community, social and personal services

However, in the empirical literature (Miles et al., 1995; Andersen et al., 2003), changes in service activities, particularly concerning the characteristics of their users, have prompted broader classifications of service products. These classifications are typically organized into the six categories (see Table 1).

Table 1. Classification of service products

Service category	Type of service products
Business Services	Finance, insurance, real estate, and other business services such as research and development, and advertising. These primarily cater to intermediate demand.
Personal Services	Hotels and food catering services, repair and maintenance services, motion pictures, amusement and recreation, private households, and personal care
Collective Services	Healthcare, education, and activities provided by non-profit organizations.
Government Services	Public administration, defence and military operations, law enforcement, regulatory services, and the implementation of public policies and programs at various levels of government

[1] https://unstats.un.org/unsd/classifications/isic/revision

Distributive Services	Transport (including land, water, and air passenger services), communication and information services, utilities (e.g., electricity, water supply), and wholesale trade
Retail Services	Services provided through retail shops

Source: Authors' composition based on Andersen B. and Corley M. (2003)

A range of empirical studies have examined the role of services in African economies, emphasizing their influence on economic growth, trade, and structural transformation. For instance, Pesce et al. (2019) review empirical evidence on the importance of services, particularly financial and infrastructure services, in supporting Africa's economic development. The authors highlight how a competitive and efficient services sector can drive overall growth and contribute to broader development goals. In another study, the researchers Hoekman et al. (2022) explored how service trade policies affect industry performance across African economies. Their findings suggest that liberalizing services trade can significantly enhance the performance of manufacturing sectors, with the benefits increasing with both the intensity of services inputs and the quality of governance. Wamboye (2022) found that Africa's development is increasingly driven by the services sector, which accounts for approximately 50 percent of total output and employs a significant share of the labour force in both Sub-Saharan Africa and North Africa.

Thus, services have been recognized as making substantial contributions to GDP, employment, trade, and structural transformation across the African continent. Ranging from financial and infrastructure services to ICT and logistics, a dynamic and competitive service sector enhances productivity, strengthens industrial performance, and fosters inclusive growth. As African economies continue to diversify and deepen their integration into global value chains, service-led development emerges as a vital pathway toward achieving long-term economic resilience and sustainable development.

2.2 Services and Global Value Chains

The integration of services into Global Value Chains has reshaped international trade. Studies provide strong empirical evidence that services such as finance, logistics, and IT enhance the efficiency of global production networks (Heuser & Mattoo, 2017; Coto-Millán *et al.*, 2016; Hess et al., 2006). Studies have highlighted that economies with strong service sectors tend to exhibit higher competitiveness in global markets (Andersen et al., 2003).

For example, Coto-Millán et al. (2016), using stochastic frontier analysis across 34 countries, found that improvements in logistics and ICT significantly enhance technical efficiency. Specifically, they estimated that a one percent increase in logistics performance results in a 0.59 percent increase in technical efficiency. Coe et al. (2019) examined the evolution of global production networks, highlighting the critical roles of finance and logistics in shaping international trade patterns and the broader economic geography.

While substantial research exists on how services enhance efficiency in global production networks, studies specifically using input-output analysis to examine services within Global Value Chains (GVCs) remain relatively scarce. Some existing research examines the structural role of services in production systems using input-output frameworks; however, much of the literature focuses on manufacturing and trade flows rather than the nuanced contributions of services. For example, Zhao et al. (2021) examined how service inputs, including logistics and financial services, impact eco-efficiency in manufacturing industries.

Knez et al. (2021) presented an extended approach to value chain analysis within an international input-output framework. It introduces a new measure of value chain participation and an extended typology of value chains, including the domestic value chain, to better capture the fragmentation of production at both global and domestic levels. The World Bank's report on Services Trade and Global Value Chains highlights the growing role of services in international trade but does not deeply integrate input-output methodologies (Heuser & Mattoo, 2017). The limited availability of input-output studies on services in GVCs suggests an opportunity for further research, particularly in areas such as service-driven value creation, intersectoral linkages, and productivity spillovers.

3. METHODOLOGY

This study combines traditional intersectoral linkages (the home market effect) with the role of services trade in Global Value Chains (GVCs) (the global/interregional market effect), as measured by participation and position in GVCs indexes, along with an analysis of trade-in-value-added data to help understand dynamic structural change and deindustrialization in Tanzania. To the best of our knowledge, this type of analysis has never been conducted in Tanzania until now.

3.1 Decomposition analysis of services trade (including exports)

The Input-Output modelling approach is used to address this objective. Services are final products or inputs supplied by other firms in the production process. Thus, Input-Output Tables (IOTs) can help identify their contribution to value added in output or exports (Francois & Julia, 2008). The starting point for analysing the contribution of services trade to global value chains is the decomposition of value added in exports by its origin. This approach involves following the Leontief model and examining the origin of value-added in the final demand of countries (Leontief, 1936). The resulting decomposition, identified as 'exports of value-added', is the value-added contributed by a given country and industry to final demand abroad. Such decomposition does not depart from the foundations of input-output analysis as it multiplies the Leontief inverse by a vector of final demand. It can provide results at the country level (exports of value-added to the world), bilaterally (exports of value-added to a given partner) and by industry (but based on the industry of origin of value-added in the exporting economy).

The following steps are employed to analyse the decomposition of Tanzania's services trade (including exports).

1. Following the mathematical framework of Miroudot and Ye (2017), we identify the relationship between gross exports and final demand in the IOT and explain how it can be used to express the domestic and foreign value-added in exports (consistent with GDP and net of any double counting). Additionally, we apply OECD methodology on Trade in Value Added (TiVA) indicators.
2. We employ the Ghosh (1998) methodology to define value-added trade flows and decompose gross exports into domestic value-added and foreign value-added components. Ghosh (1998) introduced the "supply-driven" input-output model, where value-added serves as the exogenously specified driving force within the framework. As the Ghosh model describes the generation of value-added in successive rounds, it seems more appropriate to trace flows of value-added in exports.

Consequently, the decomposition of gross exports into domestic and foreign value added, based on the National Input-Output tables and GTAP 3 Africa database, is performed as specified in Equations (1), (2), and (3).

Domestic value-added (DVA) content of exports, by service industry i in country/region (in this case, Tanzania) c to the world, represents the exported value added that has been generated anywhere in the domestic economy (i.e., not just by the exporting industry), equation 1.

$$DVA_{c,i} = V_c \times B_{c,c} \times EXGR_{c,i,p} \quad (1)$$

Where $DVA_{c,i}$ – Domestic value-added content of exports

V_c – Vector with domestic value-added shares of output for each industry i in country c,

$B_{c,c}$ – Leontief inverse matrix

$EXGR_{c,i,p}$ – vector of gross exports from country c to partner country p

Foreign value-added (FVA) content of gross exports captures the value of imported intermediate goods and services that are embodied in a domestic industry's exports. The value added can come from any foreign industry upstream in the production chain, equation 2.

$$FVA_{c,v} = V_c \times B_{c,i} \times EXGR_{c,i} \quad (2)$$

Where $FVA_{c,v}$– Foreign value-added (FVA) content of gross exports

Direct domestic value-added (DVX) content of exports measures the direct value-added contribution made by service industry i in the country (e.i., Tanzania) c to the production of goods and services exported by industry i to the rest of the world, see equation 3

$$DVX_c = V_c \times B_c \times EXGR_c \quad (3)$$

Additionally, for the computation of inter-sectoral linkages disaggregated by backward and forward linkages, the Hypothetical Extraction Method (HEM) and Partial Extraction Method (PEM) based on Dietzenbacher and van der Linden was employed in this study.

3.2 Analysis of the role of services in value chains - drawing on new world input-output tables and value-added trade databases

Two approaches are used to analyse the role of services in value chains. The **first approach** relies on the construction of annual global input-output tables. These are based on official national Input-Output Tables (IOTs) and national Supply and Use Tables (SUTs). National IOTs and SUTs reflect the interrelationships between domestic industries and between industries and final demand categories (households, government, investment, and exports as well as changes in inventories). They also reflect how intermediate imports are used in the production of goods and services, and how imports of final goods are ultimately consumed.

Several multi-region IoT initiatives are being undertaken by organizations worldwide (see Appendix 1). However, only the Global Trade Analysis Project (GTAP) database includes Tanzania. While most multi-regional IOTs employ an analytical approach, the WTO-OECD database utilizes a statistical method to generate Trade in Value Added (TiVA) indicators from the System of National Accounts (SNA), IOTs/SUTs, and trade data.

Since Tanzania's IOTs/SUTs are not included in the WTO-OECD database, TiVA indicators were calculated in this study based on the GTAP database. Currently, the Economic Commission for Africa (ECA), in collaboration with the Organization for Economic Co-operation and Development (OECD) and the World Trade Organization (WTO), is undertaking a project to develop an African Continental Input-Output Table (AfCIOT) for TiVA and GVC Analysis in

Africa. The AfCIOT model adheres to the best-practice statistical approach employed by the WTO-OECD model. In its 2021 edition, the WTO-OECD ICIO database covers 66 target countries (plus the Rest of the World), 45 unique industries, and all years from 1995 to 2018. The AfCIOT model currently comprises 16 African countries (Tanzania is not yet included). At the same time, the remaining 38 are aggregated into one element called the Rest of Africa (RoA), and the countries from the OECD model are grouped as the Rest of World (ROW).

Following the approach of the WTO-OECD model and the UNECA AfCIOT methodology[2], we used the GTAP Africa 3 database for TiVA and GVC Analysis for Tanzania, which is the **second approach** to calculate TiVA indicators. GTAP data has already been successfully used to understand the role of GVCs in the recent global trade slowdown (UNECA, 2023).

Then, to examine the role of services in the value chains, the following Trade-in-Value-Added (TiVA) indicators were calculated from the modified GTAP Africa 3 database.

- Backward (foreign value-added content of exports) and forward (domestic value added in partners' exports and final demand) participation in GVCs as percentages of the total gross exports of the value-added source of Tanzania.
- Services content of gross exports by exporting industry, by type of service and value-added origin.

Thus, from these key TiVA indicators, the analysis provides insights into Tanzania's position in Global Value Chains (GVCs), the strength of Regional Value Chains (RVCs), and country-specific industry-level analysis.

3.3 Determinants of the services share in GDP

A time-series econometric approach is used to examine the drivers of services sector expansion in Tanzania. The study estimates the Autoregressive Distributed Lag (ARDL) model for the period 1990 to 2023. In this model, the dependent variable (share of services in GDP) is a function of its lagged values, the current and lagged values of other independent variables, including GDP per capita, labour productivity growth, trade openness, gross capital formation, and foreign direct investment.

The generalized ARDL (p,q) model takes the following form (equation 4)

$$Y_t = \beta_{0i} + \sum_{i=1}^{p} \alpha_i Y_{t-i} + \sum_{i=1}^{q} \gamma'_i X_{t-i} + \varepsilon_{it} \quad (4)$$

Where Y'_t is a vector of the dependent variable, X_t is a matrix of independent variables which can be purely I (0), I (1), or cointegrated, β is constant, α and γ are coefficients, $i = 1, \dots, k$, $p \; and \; q$ are optimal lag orders, ε_{it} is a vector of error terms which follows a white noise process (i.e, errors are serially uncorrelated and independently distributed).

Considering the nature of the variables (a mix of I (0) and I (1) variables), and the long run relationship found by the bounds cointegration test, the study estimates the ARDL Error Correction (ARDL–ECM) model. It also includes a dummy variable that accounts for a break in

[2] TiVA (uneca.org)

the time series, identified using Gregory Hansen statistics, as well as the interaction of this break dummy with other variables. Thus, the estimated ARDL-ECM model takes the following specification (equation 4):

$$\Delta ServGDP_t = \eta_0 + \sum_{i=1}^{k} \vartheta_{1i}\, \Delta \mathrm{Serv}GDP_{t_{t-i}} + \sum_{i=1}^{k} \vartheta_{2i}\, \Delta LAB_{t-i} + \sum_{i=1}^{k} \vartheta_{3i}\, \Delta GFCF_{t-i} + \sum_{i=1}^{k} \vartheta_{4i}\, \Delta GDPPC_{t-i} + \sum_{i=1}^{k} \vartheta_{5i}\, \Delta TRADE_{t-i} + \sum_{i=1}^{k} \vartheta_{6i}\, \Delta FDI_{t-i} + \beta_1 D_s + \beta_2 (D_s * LAB_{t-i}) + \beta_3 (D_s * GDPPC_{t-i}) + \beta_4 (D_s * GFCF_{t-i}) + \beta_5 (D_s * TRADE_{t-i}) + \alpha ECT_t + \epsilon_{1t} \quad (5)$$

Where *k, m, n, p, q,* and *r* are lag lengths of the variables; Δ is the difference operator, and $servGDP$ represents the services' share of value added. Because the result of the Z_t test (Table A in the Appendix 2) shows that the dependent variable (services share) undergoes a structural break in 1999, the dummy variable Ds is introduced in equation 5 to represent the structural break. The dummy variable (Ds) takes the value of 0 until 1999 and 1 thereafter for the services share and other explanatory variables that were found to be significantly affected by the structural break. The ECT_t is the lagged value of the error correction term (the cointegration equation), which measures the speed of adjustment from short-run shocks to long-run equilibrium. A negative and significant α verify the existence of long-run causality between the variables of interest.

A pre-estimation unit root test is done using the Augmented Dickey-Fuller (ADF) test (Table A2, appendix 2). The Pesaran, Shin, and Smith (2001) ARDL Bounds Test is employed to investigate the potential long-run relationship between the study variables, and the Final Prediction Error (FPE) criterion is utilized to determine the optimal lag length for the ARDL model (Table A3 and A4 in Appendix 2). Post-estimation tests for autocorrelation, heteroscedasticity, and model stability are performed using the Breusch–Godfrey LM test for autocorrelation, White's test for homoscedasticity, and the CUSUM model stability test, respectively.

3.4 Data types and sources

The study used secondary data to address the objectives. First, Tanzania mainland input-output tables for 2015 and 2019 (updated from 2015) were used. The aggregated 2015 and 2019 IoTs data for the Tanzania Mainland is presented in Appendix 3A and 3B. Tanzania Mainland has not updated the SUTs/IOTs since 2015. Therefore, for this study, the 2015 SUTs/IOTs for the Tanzania Mainland were updated to 2019, with a focus on information from national statistics. The Generalized RAS method was used to balance the SUTs/IOT after transferring the data. The updated and balanced 2019 IOT was then converted into the 2019 Inverse Input-output table.

Second, is the modified GTAP Africa 3 which includes data for 51 regions (42 African regions, plus seven other aggregated regions (Oceania, East Asia, South and Southwest Asia, North America, Latin America, Western Europe and Middle East, and the Rest of the World.) – see Appendix 4) and 65 industries of the GTAP 11 Data Base. We aggregated 65 industries into 24 industries, achieving the highest level of disaggregation within the services sector. Finally, we split GTAP Africa into Tanzania IOT, SSA – IOT, Other Regions (OR) – IOT, and Rest of the World (ROW). We assume that a world is composed of only four regions (i.e., Tanzania, SSA, OR, and

ROW – see Appendix 5-7), each with 24 sectors used to calculate foreign value added (FVA) and domestic value added (DVA) in the context of exports, as well as other relevant indicators.

Third, time-series data for the period 1990-2023 (33 years) are sourced from various sources, as outlined in Table 2.

Table 2: Time-series data used

Variable	Measurement	Data source	Expected sign
Service Output	Service sector GDP (percent of value added, VA) at market prices	NBS	
Labour productivity growth	Annual growth rate of output per worker (GDP constant 2021 international $ at PPP) (percent)	SDG Labour Market Indicators (ILOSDG)	+
Level of investment	gross fixed capital formation (percentage of GDP)	WDI	+
Real income	GDP per capita (constant LCU)	NBS	+
Foreign demand and internationalization	trade openness (trade as a percentage of GDP)	WDI	+
Foreign investment	Foreign direct investment (FDI) inflows (percentage of GDP)	WDI	+

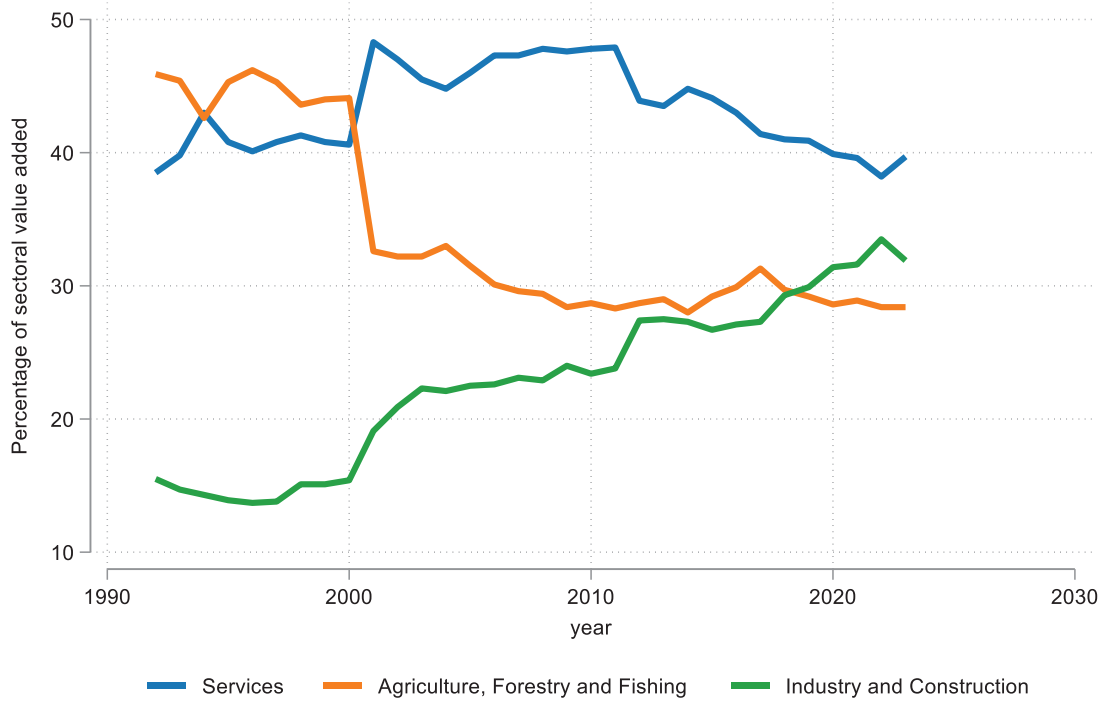
Source: authors' construction

4. FINDINGS

4.1 Evolution of service sector growth

The service sector in Tanzania has remained a dominant sector in the economy, recording the highest share of value added (VA) since the 2000s. During this period, the share of agriculture in VA recorded a sharp decrease from 44.1 percent in 2000 to 32.6 percent in 2001, while the share of services increased from 40.6 to 48.3 percent of VA during the same period (Figure 1)[3], which resulted from not only the revision in the national accounts, but also actual changes in the relative shares. This occurred as the share of agriculture continued to decline while that of industry and services increased, showing the signs of structural transformation. The sustained growth in the services sector between the 1990s and 2012 was followed by a period of deceleration, as the shares of industry and construction sectors recorded an increasing trend. The growth of the industry and construction sector is attributed to the rapid expansion of the construction sector, driven by massive public investments in the roads, railways, air, and energy infrastructure. However, the year 2023 witnessed a divergent trend in the services and industry and construction sectors, as the share of services started to pick up, while that of industry exhibited a slow decline.

Figure 1: Evolution of sectoral shares as a percentage of value added, 1992 - 2023



Source: National Bureau of Statistics

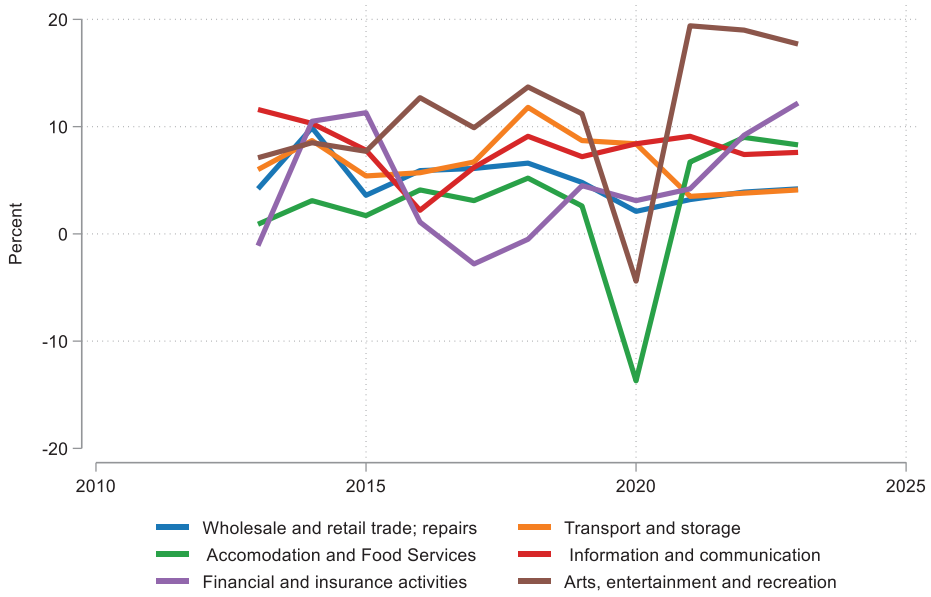
Over the last decade, from 2012 to 2023, the services sector recorded an average annual growth rate of 5.9 percent. The highest growth rate was 9.3 percent, recorded in 2014, before slowing to 4.3 percent in 2020 due to the impact of the COVID-19 pandemic. In 2023, the

[3] However, it is important to note that these sectoral contributions are affected by GDP rebasing for different years 1992, 2001, 2007 and 2015.

sector grew at an average rate of 5.8 percent, showing signs of economic recovery from the external shocks (NBS, 2024)[4].

In Tanzania, several service sub-sectors, including wholesale and retail trade, repairs, transport and storage, public administration and defence, financial and insurance, and real estate, significantly contribute to the country's GDP. In 2023, these sub-sectors' share of GDP was 8.5, 7.8, 4.3, 3.8, and 2.8 percent, respectively (Appendix 8). Nevertheless, service sub-sectors with the highest growth potential include Arts, entertainment, and recreation, which grew from an average rate of 7.1 percent in 2013 to a high of 19.4 percent in 2021, before slightly decreasing to 17.7 percent in 2023 (Figure 2). Similarly, finance and insurance activities recorded impressive growth, increasing from a low of -1.1 percent in 2013 to a high of 12.2 percent in 2023. Accommodation and food services also experienced a higher growth rate, increasing from 0.9 percent in 2013 to 8.3 percent in 2023, driven by a booming tourism sector.

Figure 2: Average Annual Rates of Growth of Services sub-sectors GDP at 2015 prices



Source: National Bureau of Statistics (NBS)

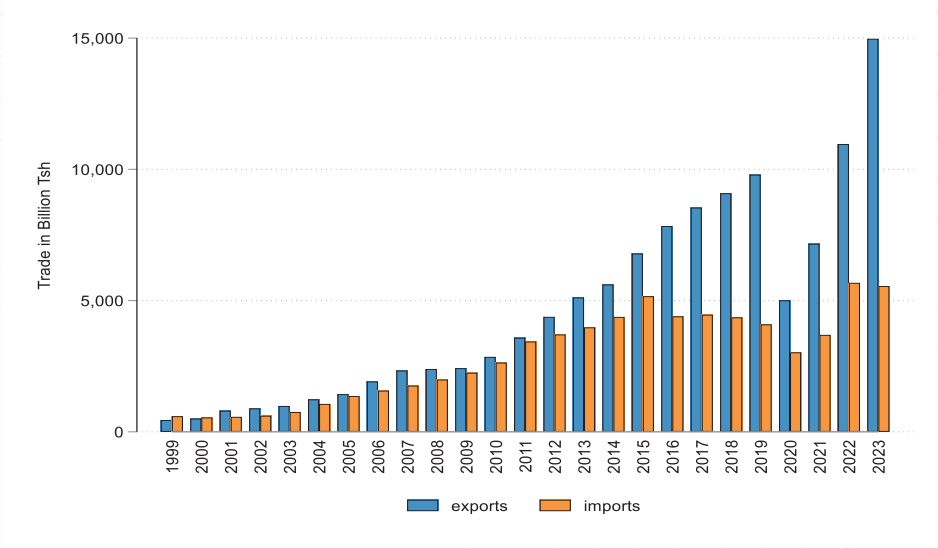
4.2 Tanzania's Services Trade Overview

Tanzanian service exports reached an all-time high of TZS 14,973 billion (approximately USD 6.3 billion) in 2023, representing a 36.7 percent increase from 2022. For about two decades, since 2001, Tanzania has consistently recorded a services trade surplus, which has increased over time, with a moderate setback during the COVID-19 period, due to the slowdown in travel and tourism activities (Figure 3).

Service imports declined to TZS 5,549.8 billion (USD 2.3 billion) in 2023, from their peak of TZS 5,165.6 billion (USD 2.6 billion) in 2015 (Figure 3). Despite the increasing trend in imports over the last years, export growth has significantly outpaced import growth even during the pandemic period.

[4] https://www.nbs.go.tz/statistics/topic/annual-national-accounts-publications

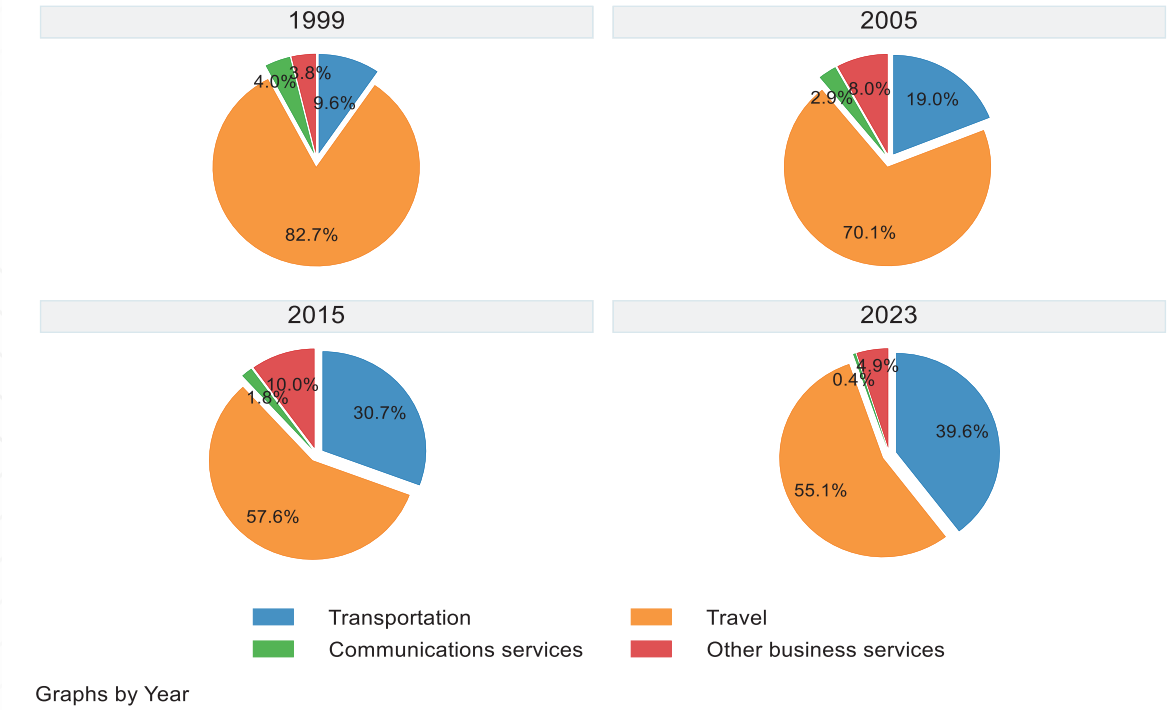
Figure 3: Trade in services, 1999 - 2023



Source: Bank of Tanzania

The composition of service exports has shown moderate changes over the last 20 years, with the share of travel decreasing from 82.7 percent in 1999 to 55.1 percent in 2023. The transportation share increased from 9.6 percent to 39.6 percent during the same period, while that of other business services increased from 3.8 percent in 1999 to 10 percent in 2015, before slowing down to 4.9 percent in 2023. Major service exports in Tanzania are travel and transportation, which accounted for approximately 86 percent of total exports in 2023. Communications services exports exhibit a consistent decline trend, from 4 percent in 1999 to 0.4 percent in 2023 (Figure 4). Exports of computer and information services started to gain momentum in 2020 following the COVID-19 pandemic (Appendix 9).

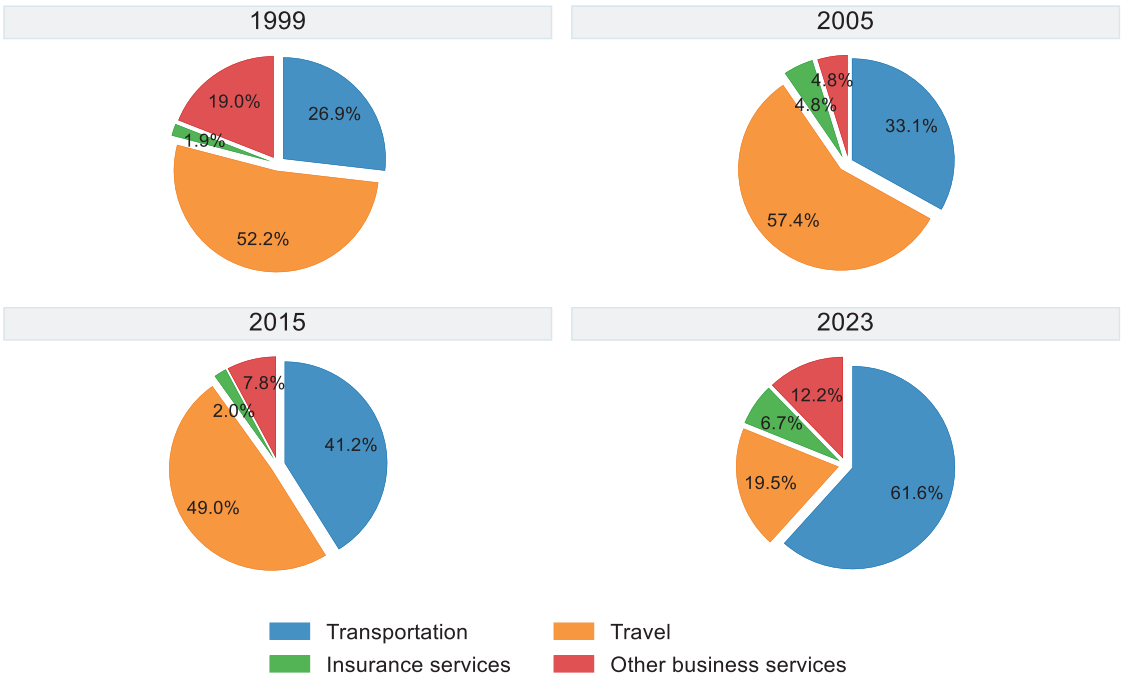
Figure 4: Share of major industries in the top 4 major exports



Source: Bank of Tanzania

Over the last 20 years, the structure of service imports has recorded substantial changes. Figure 5 shows that the share of transportation increased from 26.9 percent in 1999 to almost a third of total service imports, at 61.6 percent in 2023, while travel services, which constituted the largest share of imports in 1999, decreased from 52.2 percent to 19.5 percent in 2023. Other sectors with significant imports include other business services, whose contribution decreased by seven percentage points, while the share of insurance services increased by 4.8 percentage points between 1999 and 2023. The structure of Tanzania's services trade is similar to that of most countries worldwide, with transportation, travel, and other business services being the dominant sectors.

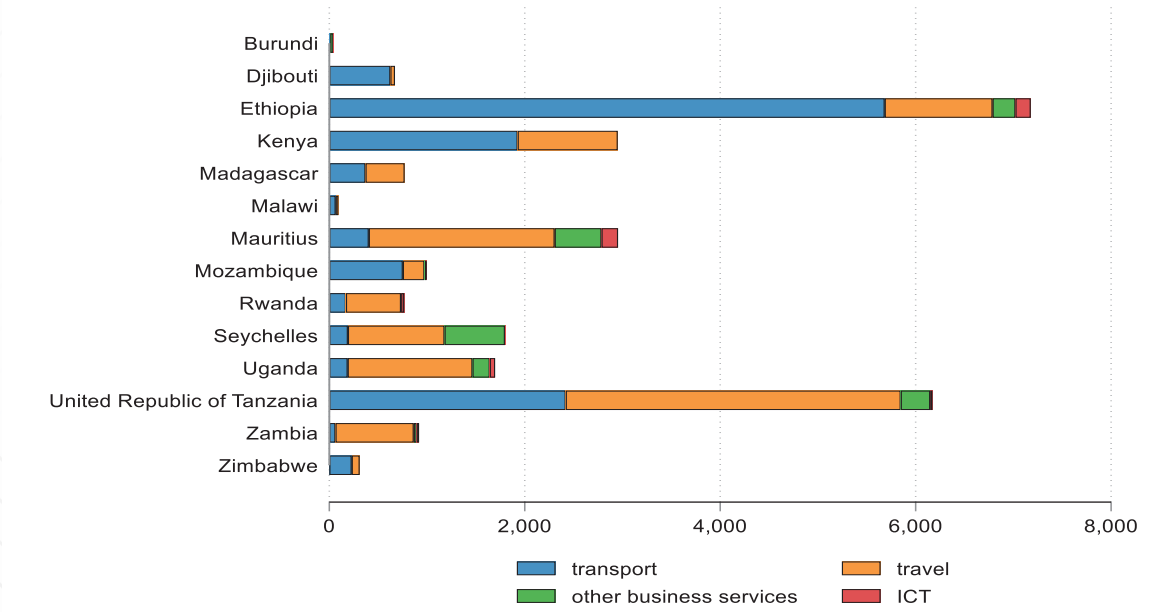
Figure 5: Share of major industries in the top 4 major imports



Source: Bank of Tanzania

Tanzanian service exports, particularly in the transportation and travel sub-sectors, are comparatively higher than those of most Eastern African countries (Figure 6). In 2023, Ethiopia recorded the highest transportation exports, while Tanzania recorded the highest exports in travel services among other countries in the same year. This highlights the potential of the travel sub-sector, primarily comprising tourism activities, in driving Tanzanian exports and overall economic growth.

Figure 6: Services exports by category for selected Eastern African countries, 2023



Source: UNCTAD statistics
Notes: For some countries, data for 2023 for other business services and ICT sectors are not reported.

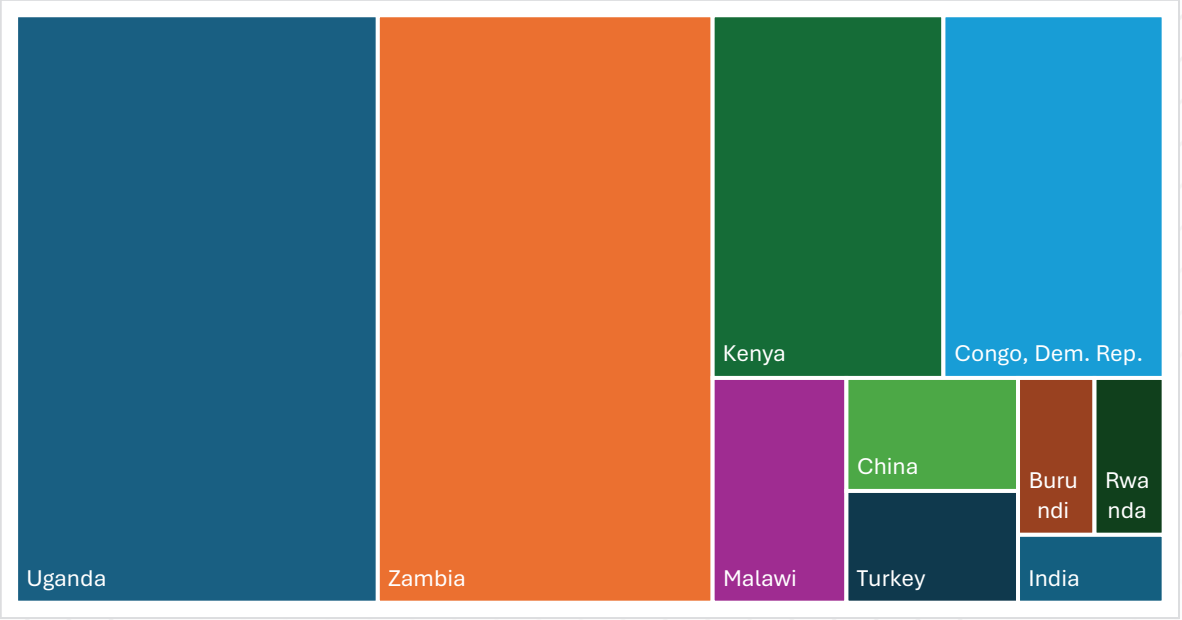
Destination markets for Tanzanian service exports have remained relatively stable over time, with the United States, China, and Switzerland leading the way. Hong Kong is the new entrant in the list of top 10 destination markets, replacing the Netherlands (Appendix 10). There are notable differences among key partners for key service sub-sectors, transportation, and travel services.

Tanzania is the international gateway for several of its landlocked neighbouring countries. Burundi, Rwanda, Uganda, the Democratic Republic of Congo, Zambia, and Malawi are all dependent to some extent on the country's transport network for their access to global markets. This explains the significant transportation exports to these neighbouring countries that share a border with Tanzania. For instance, in 2022, the top 10 export destinations for transportation services were Uganda, Zambia, Kenya, the Democratic Republic of Congo, and the Republic of Congo. Rep. and Malawi[5] (Figure 7). Key import partners for transportation services include China, Japan, India, South Africa, and the United Kingdom (Appendix 11).

While the earnings from travel exports increased significantly by more than six times between 1999 and 2023, their share in total service exports declined. This was accompanied by the increased share of transportation exports and the emergence of other sectors, such as computer and information services. Travel covers goods and services acquired from an economy by travellers for their use during visits of less than one year in that economy for either business or personal purposes. It includes local transportation, as well as goods and services consumed by travellers, such as lodging and meals [6]. In Tanzania, most of the travel export earnings are derived from the tourism industry, whose key source markets include the United States, Italy, Germany, Zambia, and the United Kingdom as of 2023 (BOT, 2023b).

5 https://wits.worldbank.org/CountryProfile/en/Country/TZA/Year/2022/TradeFlow/Export/Partner/all/Product/86-89_Transport
6 https://databank.worldbank.org/metadataglossary/world-development-indicators/series/TX.VAL.TRVL.ZS.WT

Figure 7: Top 10 export partners for Transportation services, 2022

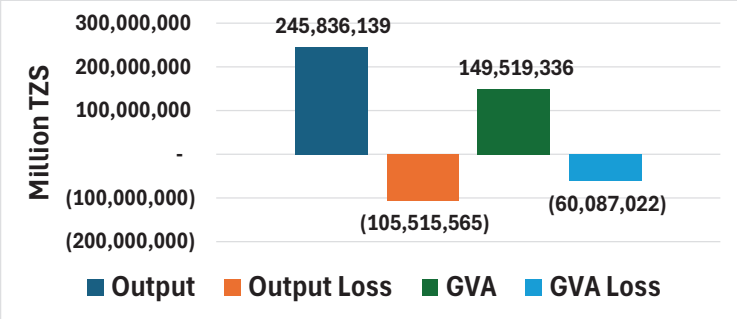


Source: World Integrated Trade Solution (WITS)

4.3 Inter-Sectoral Linkages in the Services Industries

We begin our analysis by first identifying the sectors that, from a linkages perspective, are key to the overall economy. Second, by shifting our focus to service sub-sectors, we pinpoint those sectors that are closely linked to other sectors in the economy. Third, we zoom in for an in-depth examination of the identified significant inter-sectoral linkages by conducting Hypothetical Extraction Method (HEM) analyses on those sectors that were found to be key to the services sector. A HEM analysis entails extracting each aggregated economic sector to understand its respective importance for the economy from the perspective of production linkages. The extraction of the service sector from the economy resulted in the following losses to total output and Gross Value Added (GVA) (Figure 8).

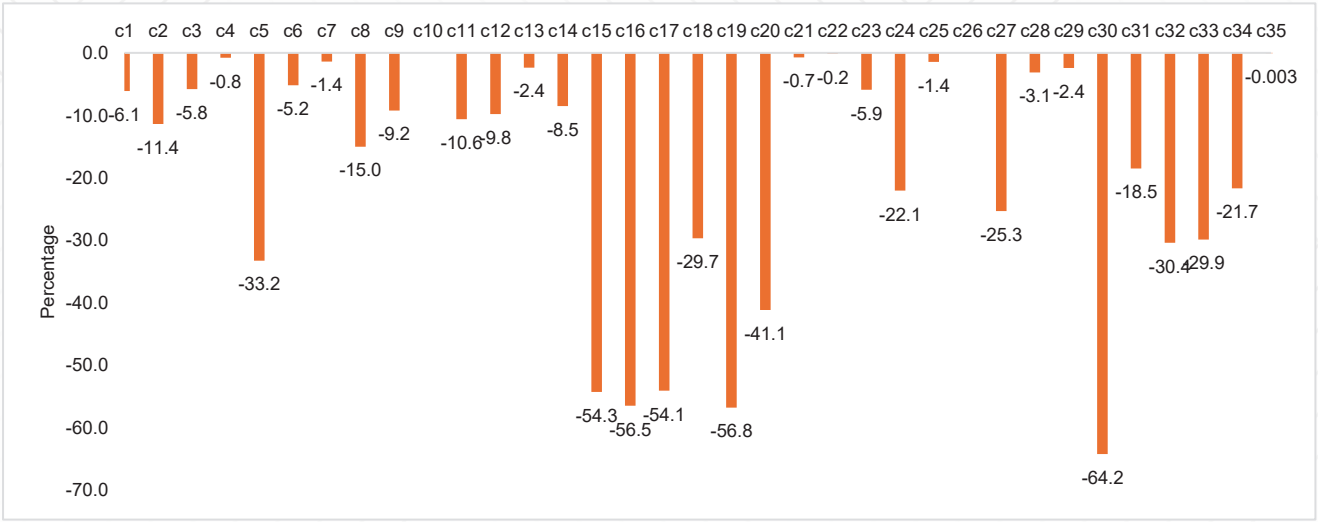
Figure 8. Total output, GVA, and their loss after eliminating the services sector, 2019 in Million TZS)



Source: Authors' calculation based on the 2019 IOT for Tanzania

Figure 8 shows that eliminating the total services sector results in a loss of 43 percent of the economy's total output, equivalent to TZS 105,515,565 million. The cost of eliminating the total services sector from the economy is reflected in the output reduction of all sub-sectors of the economy (Figure 9). This figure shows a percentage decrease in total economic output of the respective sectors following the extraction of services. Sectors which exhibit the most significant reduction in output due to elimination of total services sector are Repair and installation services of machinery and equipment (c30), Manufacture of rubber and plastics products (c19), Manufacture of coke and refined petroleum products (c16), Printing and reproduction of recorded media (c15), Manufacture of chemicals and chemical products (c17), and Metal ores (c5). In other words, these sectors exhibit the highest reduction in output due to their higher dependence on the services sector. Figure 9 also shows that, compared to manufacturing, the agriculture sector relies less on the services sector for production. Overall, the results indicate that the economy is heavily reliant on services. Beyond output loss, the extraction of services would trigger widespread unemployment, halt industrial production reliant on service inputs, and reverse progress made toward structural transformation and economic resilience.

Figure 9. Sectors' Output Reaction to eliminating the total services sector



Note: legend of sectors in the Tanzania economy based on 2019 IOT and ISIC codes: Products of agriculture, hunting and related services c1, Products of forestry, logging and related services c2, Fish and other fishing products; aquaculture products; support services to fishing c3, Coal and lignite c4, Crude petroleum and natural gas c5, Metal ores c6, Other mining and quarrying products c7, Manufacture of food products c8, Manufacture of beverages c9, Manufacture of tobacco products c10, Manufacture of textiles c11, Manufacture of wearing apparel c12, Manufacture of leather and footwear c13, Manufacture of wood and of products of wood and cork c14, Manufacture of paper and paper products c15, Printing and reproduction of recorded media c16, Manufacture of coke and refined petroleum products c17, Manufacture of chemicals and chemical products c18, Manufacture of basic pharmaceutical products c19, Manufacture of rubber and plastics products c20, Manufacture of non-metallic mineral products c21, Manufacture of basic metals c22, Manufacture of fabricated metal products, except mach.&equip. c23, Manufacture of computer electronic and optical products c24, Manufacture of electrical equipment c25, Manufacture of machinery and equipment n.e.c. c26, Manufacture of motor vehicles, trailers and semi-trailers c27, Other transport equipment c28, Furniture c29, Other manufactured articles n.e.c. c30, Repair and installation services of machinery and equipment c31, Electricity, gas, steam and air conditioning c32, Natural water; water treatment and supply services c33, Sewerage services; waste collection, treatment and disposal services c34, Construction c35.

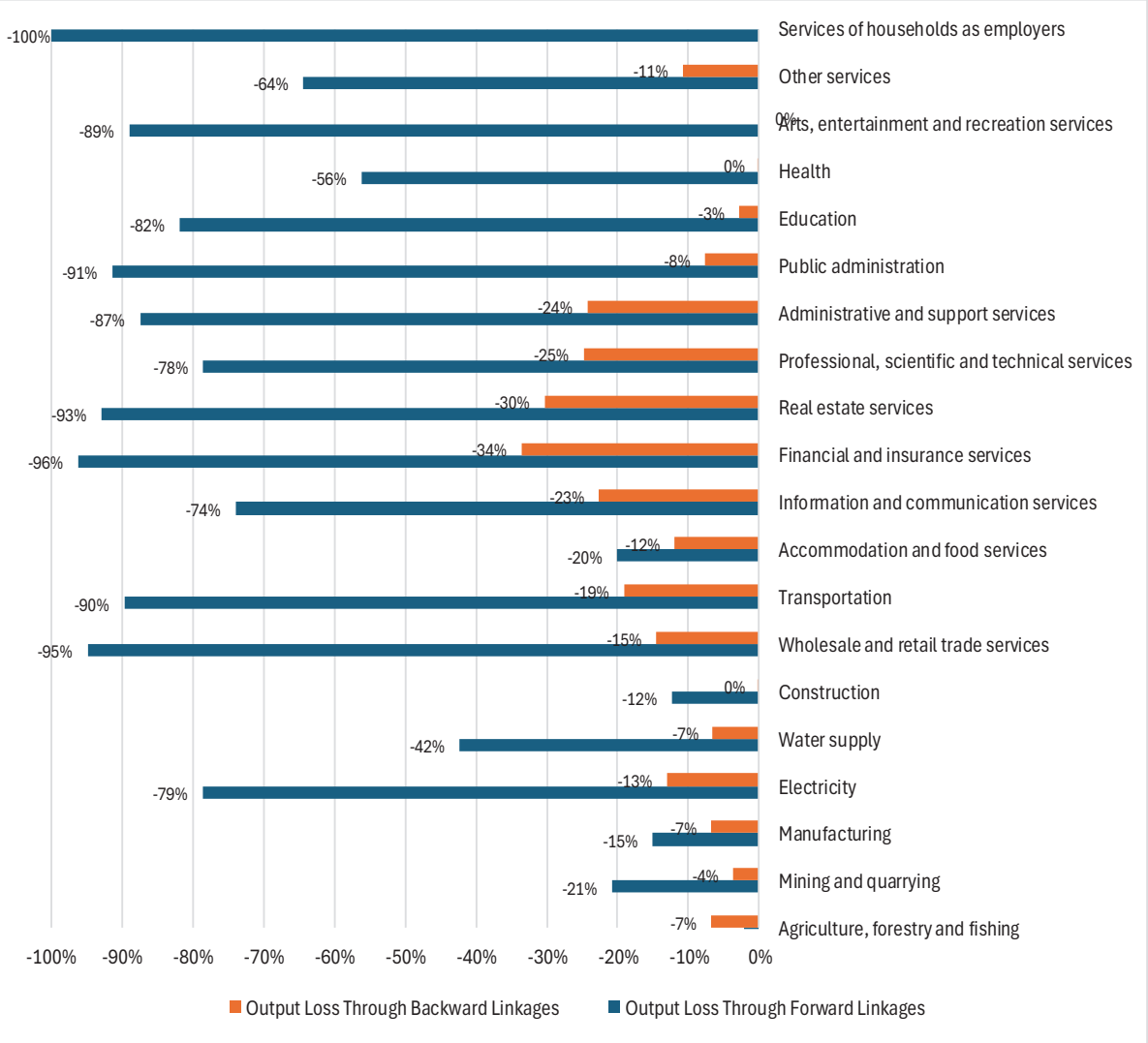
Source: Authors' calculation based on 2019 IOT for Tanzania

The services sector is deeply embedded in the Tanzanian economy's production networks, contributing to output not only directly but also indirectly through forward and backward linkages. The hypothetical removal or disruption of the services sector would result in considerable output loss across multiple industries. Figure 10 illustrates the output loss through forward and backward linkages in the service sector.

Forward-linkage loss refers to the decline in output (or output decline) of downstream sectors (those that purchase services as inputs) resulting from a decline in the value-added of services or a reduction in demand for primary inputs, such as when service firms lay off workers or profits are reduced. According to Figure 10, the sectors with the highest output loss due to a decline in the services sector input demand are electricity (79 percent), water (42 percent), mining (21 percent), and manufacturing (15 percent), in addition to the total services sector. This suggests that these downstream sectors mainly depend on services for intermediate inputs. This means that disruptions or adverse shocks to the services sector impose significant output reduction risks on these sectors, particularly in electricity and water.

On the other hand, backward-linkage loss refers to the decline in output (or output decline) of upstream sectors (those that supply inputs into services) due to a decline in final demand for services, which may result from a policy change or external shock. In this case, the notable output losses are observed in electricity (13 percent), agriculture (7 percent), manufacturing (7 percent), and mining (4 percent). This suggests that these upstream industries supply most of the intermediate input required in the services sector. This backward dependence implies that disruptions in the economy, such as supply chain bottlenecks, resource shortages, or infrastructure failures that hurt the services sector, can lead to broader economic impacts, heavily affecting the sectors that supply their inputs to the services sector. Since services account for 12 percent of GDP in terms of backward linkages, safeguarding the stability and efficiency of these foundational industries is essential for maintaining economic resilience and continuity.

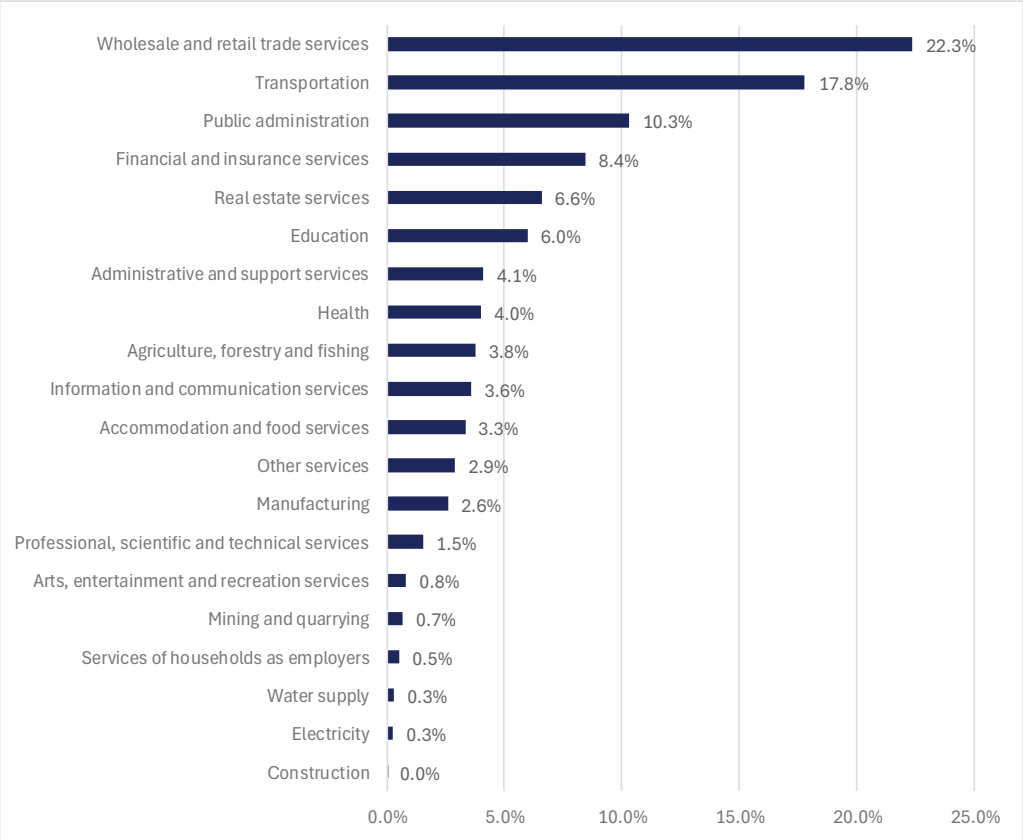
Figure 10. Output loss through Forward and Backwards linkages of the service sector in the Tanzanian economy, in proportion of the sector's output



Source: Authors' calculation based on 2019 IOT for Tanzania

Overall, the inter-sectoral linkages in the services industries underscore the mutual dependence between services and other economic sectors. This interconnected nature suggests that strengthening key upstream industries, which are electricity and agriculture, and maintaining efficient forward linkages (improving the utilities sub-sector) can enhance economic resilience, competitiveness, and long-term growth. Figure 8 also shows that the gross value-added loss amounts to TZS 60,087,022 million, which is equivalent to 40 percent of the GDP. This implies that the services sector is a crucial component of the Tanzanian economy. The impact of eliminating the entire services sector on value added across various sub-sectors of the economy is illustrated in Figure 11.

Figure 11. Sectors' Value-Added Reaction to eliminating the total services sector in percentage of the total GVA loss



Source: Authors' calculation based on 2019 IOT for Tanzania

Eliminating the services sector significantly reduces value added not only in services themselves (i.e., Wholesale – 22.3 percent, Transport – 17.8 percent, Financial and insurance services – 8.4 percent, and others) but also in other sectors (i.e., Agriculture – 3.8 percent, Manufacturing – 2.6 percent, Mining – 0.7 percent) that rely heavily on service inputs for their operations and productivity, and also supply inputs to the services sector.

Therefore, a hypothetical elimination of the service sector would result in:

- A sharp decline in GDP. As services account for a substantial share of total output in the Tanzanian economy, removing them could lead to a reduction of up to 40 percent in GDP.
- Disruption of production across all sectors. Key sectors of the economy, such as manufacturing, agriculture, and trade, depend on services like transportation, finance, ICT, and professional support. Their removal would severely hinder operations and output.
- Massive employment losses. Given that the services sector is a major employer, particularly in urban areas, its elimination would result in widespread job losses, leading to increased unemployment and socioeconomic instability.
- Collapse in trade and investment flows. Many services, such as logistics, communication, and financial services, facilitate cross-border trade and investment. Without them, regional and global economic integration would stall.

4.4 Determinants of the Service Share in GDP

Changes in the structure of the economy, as new sectors emerge while old industries decline, describe the process of economic development. Reallocation of resources among sectors leads to changes in the structure of production and employment, driven by differences in productivity growth or sectoral variations in income elasticities of demand. (Foellmi & Zweimüller, 2008). Theoretical explanations of services sector expansion include the three-sector hypothesis by Fisher (1935) and Clark (1940), Engel's law by Engel (1857), Baumol's cost disease by Baumol (1967), Kuznet's structural change theory by Kuznet (1955), and the de-industrialization hypothesis.

The Clark-Fisher hypothesis states that economic development will lead to the emergence of a service sector, with the majority of the labour force joining after the development of the agricultural and industrial sectors. Engel's law posits that an increase in income is associated with a decline in the budget share of food and an increase in the budget for goods and services. Baumol's cost disease hypothesis posits that, although productivity is lower in services, wages rise due to spillovers from manufacturing, thereby contributing to the increasing share of services in GDP. According to Kuznets, a shift from agriculture to services is driven by economic growth fuelled by urbanization and technological advancements. The deindustrialization hypothesis posits that advanced economies shift labour-intensive manufacturing jobs to less developed countries, taking advantage of the abundant and cheap labour supply. These theories contribute differently to the understanding of the determinants of the service sector growth in Tanzania.

4.4.1 Short-run determinants of services share in GDP

This section estimates the drivers of the services sector output as a percentage of value added. The estimations showing the short-run drivers of service sector growth are reported in Table 3. The ARDL model specification accounts for structural breaks observed post 1999 as the services share significantly increased while that of agriculture substantially decreased (Figure 1). The model fits the data well, as evidenced by the high adjusted R-squared value of 0.893, indicating that approximately 89 percent of the variation in services sector GDP is explained by the variables included in the model. Moreover, all estimated models passed the post-estimation tests, implying that the models are stable and provide consistent results for the drivers of the services share in GDP.

Table 3: ARDL Short-run results

Variable	Coefficient	Std. err	t statistic	Prob>t
Ln GDP per capita_pre1999	-7.044	3.527	-2.000	0.063*
Labour productivity growth_pre1999	-1.681	0.548	-3.070	0.007**
Trade openness	-0.149	0.064	-2.340	0.044**
Gross fixed capital formation_pre1999	-0.155	0.071	-2.200	0.043**
Trade openness_pre1999	-0.096	0.054	-1.770	0.096*
1999_dummy	-11.089	1.946	-5.700	0.000***
Labour productivity growth _post1999	1.510	0.617	2.450	0.026**

Source: Authors' calculations

Results show that, before 1999, the share of the services sector in GDP was negatively affected by the size of income (GDP per capita), labour productivity growth, trade liberalization, and

the level of capital stock (Gross fixed capital formation). Prior to 1999, the Tanzanian economy was characterized by a significant share of the agriculture sector, followed by services, and lastly industry (Figure 1). During this period, the services sector was relatively underdeveloped, and trade liberalization was in early stages following the structural adjustment programmes adopted in the 1980s. Trade liberalization efforts primarily targeted primary commodities and basic manufacturing exports, resulting in sluggish growth in the service sector. This was the period of low economic growth. However, several reforms for a growing service sector were established, including liberalization of exchange, trade regimes, initiation of financial system reforms, and privatization of public enterprises (Nord et al., 2009).

According to the results in Table 3, Labour productivity growth has a negative impact on the services sector's expansion in the short run. The overall net effect of labour productivity growth in the study period is slightly negative, at -0.17 (= -1.681 + 1.510), implying that as labour productivity increases, the services share shrinks in the short term. During the 1990s, labour productivity was higher in manufacturing than in agriculture and services. Moreover, increased labour productivity due to population growth in Tanzania is linked to the expansion of labour-intensive low-productive sectors, mainly informal services and rural-based agriculture (Kahyarara, 2019). The low labour productivity in the services sector thus leads to a decline in the share of services in GDP, despite a slight increase in the absolute value of services GDP.

Prior to 1999, Gross fixed capital formation was also found to have negatively affected the services share in GDP in the short term. Between 1990 and 1993, Gross fixed capital formation increased by over 50 percent of GDP due to a significant rise in locally denominated costs of imported machinery and equipment resulting from devaluation. This period also witnessed some increase in housing investments and economic infrastructure due to high investments in construction (Gibbon & Raikes, 1995). Despite this increase, the services' share in GDP was still lagging behind that of agriculture. Regarding the size of income, despite a slight increase in GDP per capita during the 1990s, much of the household income was spent on food items, about 71 percent in 1991/92, implying a relatively less demand for services output (Bank of Tanzania, 2004; Gibbon & Raikes, 1995).

Similarly, trade openness has a negative impact on the share of services in the short run. A counterintuitive negative effect of trade openness on the services share is explained by the high concentration of goods exports, such as cash crops and minerals, compared to services. This causes trade liberalization efforts to boost other sectors initially. Moreover, Tanzanian export services are less diversified, dominated by tourism and transportation sectors, and less competitive; thus, in the short term, the industry slowly takes advantage of the international market.

A negative and statistically significant 1999_dummy coefficient confirms that a structural break occurred around 1999, implying a substantial difference in the service sector share before and after 1999. The negative sign indicates that the services share was systematically lower before 1999, exhibited by a trend shift (Figure 1).

4.4.2 Long run determinants of the services share in GDP

Long-run estimates of the determinants of services share in GDP are reported in Table 4. Over the long run, the services sector's share in GDP demonstrated an increasing trend, particularly after 1999, before starting to decline in 2013 (Figure 1). The study provides estimates for the baseline model (Model 1), which includes labour and physical capital as explanatory variables.

Model 2 incorporates the natural log of GDP per capita to test the income effect. Model 3 presents results that include macroeconomic variables. In contrast, Model 4, which we focus our interpretation on, includes structural breaks in the year 1999, representing economic take off following liberalization and various reforms since the 1980s and 1990s. A negative and highly significant coefficient in the cointegrating equation (-0.96) implies that the share of services in GDP indeed has a long-run relationship with the studied variables, and that there is a high speed of adjustment to a long-run equilibrium following a shock.

Results suggest that, over the long term, the level of income, measured by GDP per capita, and gross fixed capital formation are negatively correlated with growth in the service sector. On the contrary, trade liberalization and foreign direct investment are found to drive the performance of the service sector. In contrast, labour productivity growth is found to have a negligible impact on the share of services in GDP. The significant structural break identified in this study highlights the evolving structure of the Tanzanian economy, where deeper reforms and shifting sectoral patterns have altered the way economic variables influence the services share in GDP over time.

Table 4: Long-run Error Correction Model Results

	ARDL (1,0,0)	ARDL (1,0,0,0)	ARDL (1,0,0,2,0,2)	ARDL (1,1,1,1,1,1,1,0,0,0,1)
Variable	**Model 1- Baseline**	**Model 2 - Income size effect**	**Model 3 - Extensions**	**Model 4 - with structural breaks**
Cointegrating equation	-0.64*** (0.138)	-0.52*** (0.138)	-0.60*** (0.179)	-0.96*** (0.144)
Labour productivity growth	0.551** (0.261)	0.913** (0.285)	0.191 (0.617)	-0.013 (0.482)
Gross fixed capital formation (GFCF)	-0.04 (0.034)	0.119 (0.074)	0.16 (0.139)	0.457** (0.164)
ln GDP per capita		-1.412** (0.59)	-3.632** (1.233)	7.17** (2.628)
Trade openness			0.074 (0.074)	0.466** (0.154)
FDI			2.324** (0.851)	
1999_dummy				3.122 (5.503)
Labour productivity growth _post1999				0.34 (0.649)
Trade openness_post1999				-0.288* (0.151)
Ln GDP per capita_post1999				-10.438** (2.898)
GFCF_post1999				-0.505** (0.169)

Constant	15.24 (5.646)	14.329** (5.25)	18.765** (5.759)	34.085*** (6.968)
R-squared	**0.7252**	**0.7718**	**0.6792**	**0.893**

Source: Authors' calculations

Greater trade openness was associated with a higher share of services in the long run prior to 1999. Even though the effect of trade openness diminishes after 1999, the net long-run effect of trade liberalization remains positive, at 0.178 (= 0.466 – 0.288). The government adopted various trade liberalization measures during the 1990s, including the 1996 Economic Recovery Program, which aimed to eliminate cost-price distortions and introduce import liberalization measures. This initiative allowed private sector competition in the marketing and processing of cash crops since 1994. Additionally, the export licensing system and foreign exchange surrender were abolished by 1993/94, among other measures. As a result, trade liberalization induced a pronounced shift in income from the public sector and areas of the private sector toward farmers, small enterprises, and the informal sector, which contributed to the rising share of services to GDP (Kanaan, 2000). Moreover, trade liberalization has supported the growth of the information and communication (ICT) sector, which is the primary catalyst for the expansion of the services share. For instance, the removal of duty on computers and peripherals in the year 2000 widened the use of ICT equipment and increased the competitiveness of the sub-sector[7].

Increasing FDI inflows are found to have a positive impact on the services share over the long run (model 4). The variable was excluded from Model 4 due to concerns about multicollinearity. By 2001, data on major foreign affiliates in Tanzania showed that services are the second largest sector for FDI in Tanzania after mining, most likely much more ahead of the manufacturing sector (UNCTAD, n.d.). As of 2022, FDI inflows remained concentrated in mining and quarrying, finance and insurance, and manufacturing, together representing 88 percent of total flows. Higher investments in finance and insurance resulted from increased investment in digital financial services, which was linked to government initiatives aimed at enhancing financial inclusion. Other service sub-sectors that recorded a significant increase in FDI inflows include information and communication, accommodation, and food services (BOT, 2023a).

On the contrary, Table 4 shows that increasing per-capita income significantly boosted the share of services in GDP during 1990–1999. However, the net long-run effect of -3.27 (= -10.438 + 7.17) suggests that an increase in GDP per capita is detrimental to the service sector's performance. Although GDP per capita recorded an increasing trend in Tanzania, a significant share of households' income is spent on food rather than non-food items. Tanzanian GDP recorded impressive growth over the last decade. In 2020, Tanzania's GNI per capita increased from $1,020 in 2018 to $1,080 in 2019, which exceeds the 2019 threshold of $1,036 for lower-middle income status[8]. Yet, in 2018, total household expenditure was still dominated by food (59.9 percent), a four-percentage-point increase from 55.9 percent recorded in 2001, creating insufficient demand to boost the services sector (National Bureau of Statistics (NBS), 2019). Notable is the increasing spending on productive and durable assets compared to services such as health, education, water, and transportation services, which do not adequately support the overall growth of the services sector (Bank of Tanzania, 2004).

[7] https://www.foreign.go.tz/services/opportunities-for-investment-in-tanzania
[8] https://blogs.worldbank.org/en/africacan/what-does-tanzanias-move-lower-middle-income-status-mean

Gross fixed capital formation is also found to have a positive and significant impact on the long-run share of services during 1990–1999, by 0.5 percentage points. This is because the accumulation of capital in other sectors, such as industry, helped the service sector. However, the long-term impact from 2000 to 2023 shifted to negative, resulting in a net negative marginal impact of capital of -0.05 percentage points (0.457 - 0.505). The net negative long-run impact of physical capital on the services share is consistent with the structure of the Tanzanian services sector, which is labour-intensive (informal sector), with significant physical capital investments being in the construction and manufacturing sectors (Newfarmer et al., 2018). This finding resonates with other research, which found that large formal manufacturing firms in Tanzania and Ethiopia tend to invest in more capital-intensive techniques due to the adoption of the global technological standard in their production processes (Diao et al., 2021). This makes them less labour-intensive compared to the services sector.

The long-term contribution of Labour productivity growth to the expansion of the service sector is lower during 1990–1999, while its effect becomes slightly positive during 2000–2023, albeit insignificant. This implies that labour productivity gains neither boost nor hinder the service sector's output. Structural change in Tanzania has not been associated with a growth in labour productivity, primarily due to the higher concentration of informal service activities, particularly in the wholesale and retail trade sectors. Although their study focused on manufacturing firms, (Diao et al., 2021) found that small firms, which mostly absorb employment similar to the services sector, do not exhibit labour productivity growth.

4.5 Decomposition of Total Service Exports

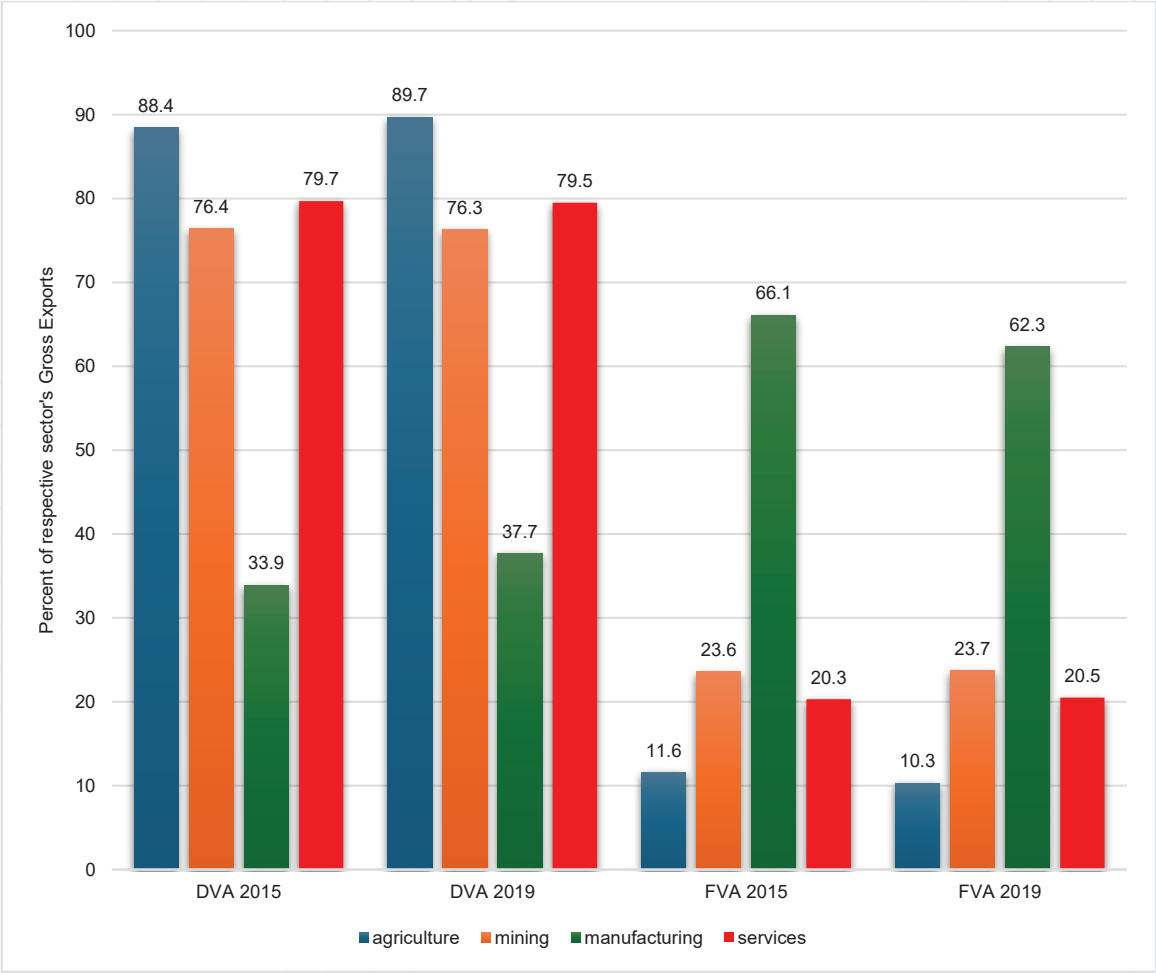
The decomposition of service exports based on the 2015 and 2019 Tanzanian input-output (IOT) tables is presented in Figure 12. Generally, Tanzania depends more on domestic value added (DVA) compared to imported contents (FVA) for the production of both export goods and services. The share of DVA in gross exports represents the value-added gains a country derives from its exports. Research shows a declining trend in the DVA content of exports for most countries, particularly developing countries (Banga, 2014; Kee & Tang, 2016). In Tanzania, the DVA content in the gross exports of the agricultural and manufacturing sectors increased between 2015 and 2019 (Figure 12). This may be attributable to an increase in domestic linkages and the corresponding decline in the use of imported inputs. For example, most agri-food processing industries, which dominate the manufacturing sector in Tanzania, rely primarily on domestic raw materials for production, which adds to the domestic content of manufacturing exports (Mazungunye & Punt, 2022; URT, 2010). Conversely, DVA has decreased slightly in the mining and services sectors, creating opportunities for production fragmentation (Banga, 2014; Kee & Tang, 2016).

Sectoral decomposition revealed a mixed composition. Notably, the highest domestic content is in the primary sectors, i.e., agriculture and mining, at 88.4 percent and 76.4 percent, respectively, in 2015, similar to 2019. This reflects high dependence on local natural resources and labour, a common phenomenon in resource-rich countries, including Tanzania. Conversely, manufacturing sector exports reveal a high level of foreign content, suggesting a dependence on foreign intermediate inputs with limited local content.

The service sector, similar to the primary sector, has a higher proportion of domestic content in its exports compared to foreign content, at nearly 80 percent in both 2015 and 2019. Like many lower- and middle-income countries, Tanzania's exports of "traditional" services —

namely, travel, transportation, and business services — rely heavily on local labour, which increases the domestic value added of these exports.

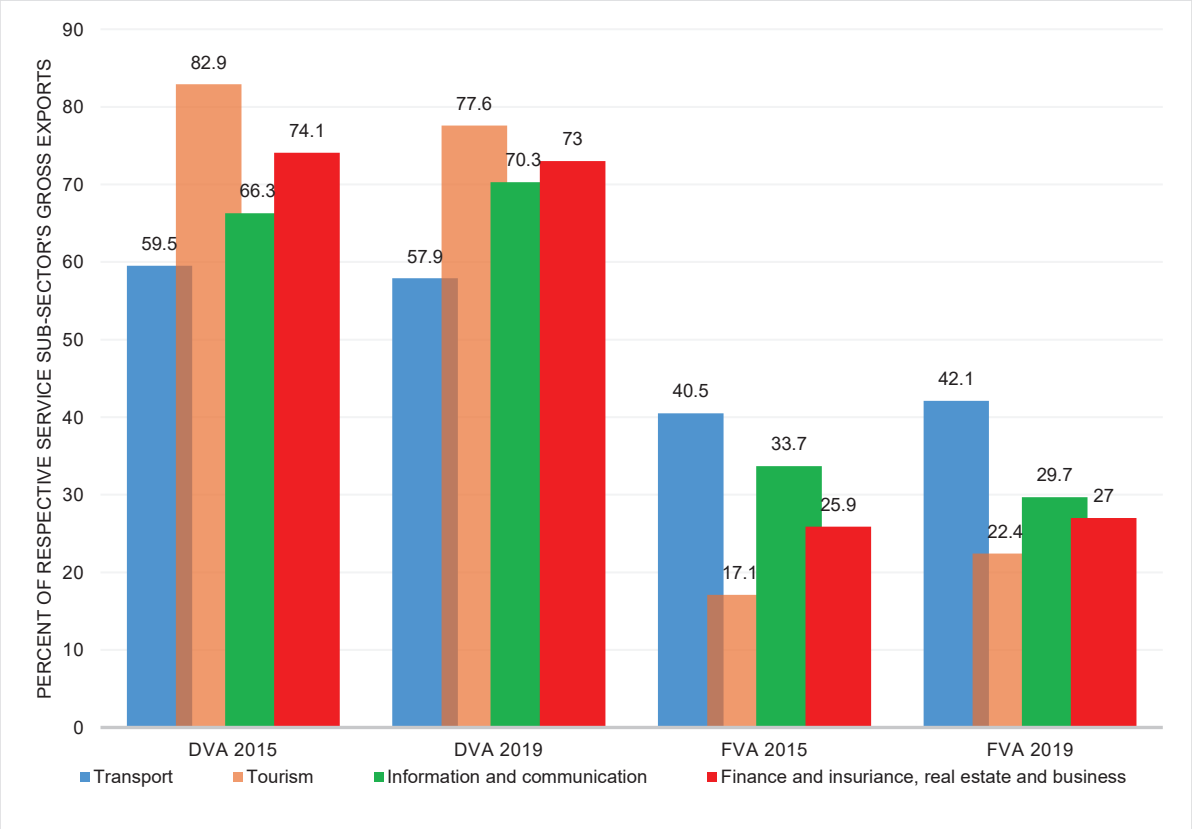
Figure 12: Domestic and Foreign value added of gross exports by Sector



Source: Authors' computation using 2015 and 2019 Tanzania I-O tables

The decomposition of gross exports of service sub-sectors reveals a similar pattern to total service sectors, albeit with slight differences (Figure 13). The tourism sub-sector embeds the highest domestic value added, 82.9 percent in 2015, followed by insurance, real estate, and business services. In Tanzania, tourism can be broadly defined to include the provision of goods and services necessary to maintain tourists' internal transport, accommodation, and restaurants catering specifically to tourists, as well as certain retail goods such as arts and crafts (Kweka et al., 2003). The tourism sector is primarily local, labour-intensive, providing more than 1.4 million direct and indirect jobs, mostly to women, which explains the high domestic value-added content of its exports. (World Bank, 2021). In 2019, the DVA content of transport, tourism, finance and insurance, real estate, and business services exports slightly decreased compared to 2015, while that of Information and communication recorded an increase. This implies a substitution of more FVA content for the transport, tourism, and finance sub-sectors, manifesting a rising trend in the fragmentation of production and increasing integration of the country into global value chains.

Figure 13: Domestic and Foreign value added of gross exports by Service sub-sectors



Source: Authors' computation using 2015 and 2019 Tanzania I-O table

Figure 13 also shows that the transport sub-sector has relatively less DVA content compared to other sub-sectors, specifically 59.5 percent and 57.9 percent in 2015 and 2019, respectively. This signifies the importance of foreign value addition in the gross exports of this sub-sector. Transport covers all transport services (sea, air, land, internal waterway, pipeline, space and electricity transmission) performed by residents of one economy for those of another and involving the carriage of passengers, the movement of goods (freight), rental of carriers with crew, and related support and auxiliary services. Also included are postal and courier services[9]. The transport system in Tanzania consists of five modes: roads, rail, water, air, and pipelines. The modernization of infrastructure, supported by high levels of investment, has increased the importance of imported intermediate inputs for building and maintaining transportation infrastructure. As the construction industry in Tanzania is at a relatively infant stage, most of the required skills in the transportation sector are imported from abroad (AFDB, 2013). Moreover, most inputs are capital- and technology-intensive, especially in maritime, railway, and air transport services, which are primarily imported. This highlights the need to develop industrialization policies that encourage the production of intermediate inputs, such as machinery and equipment.

[9] https://databank.worldbank.org/metadataglossary/world-development-indicators/series/BX.GSR.TRAN.ZS

4.6 Analysis of the Role of Services in Value Chains

4.6.1 Gross Exports in terms of Value-Added

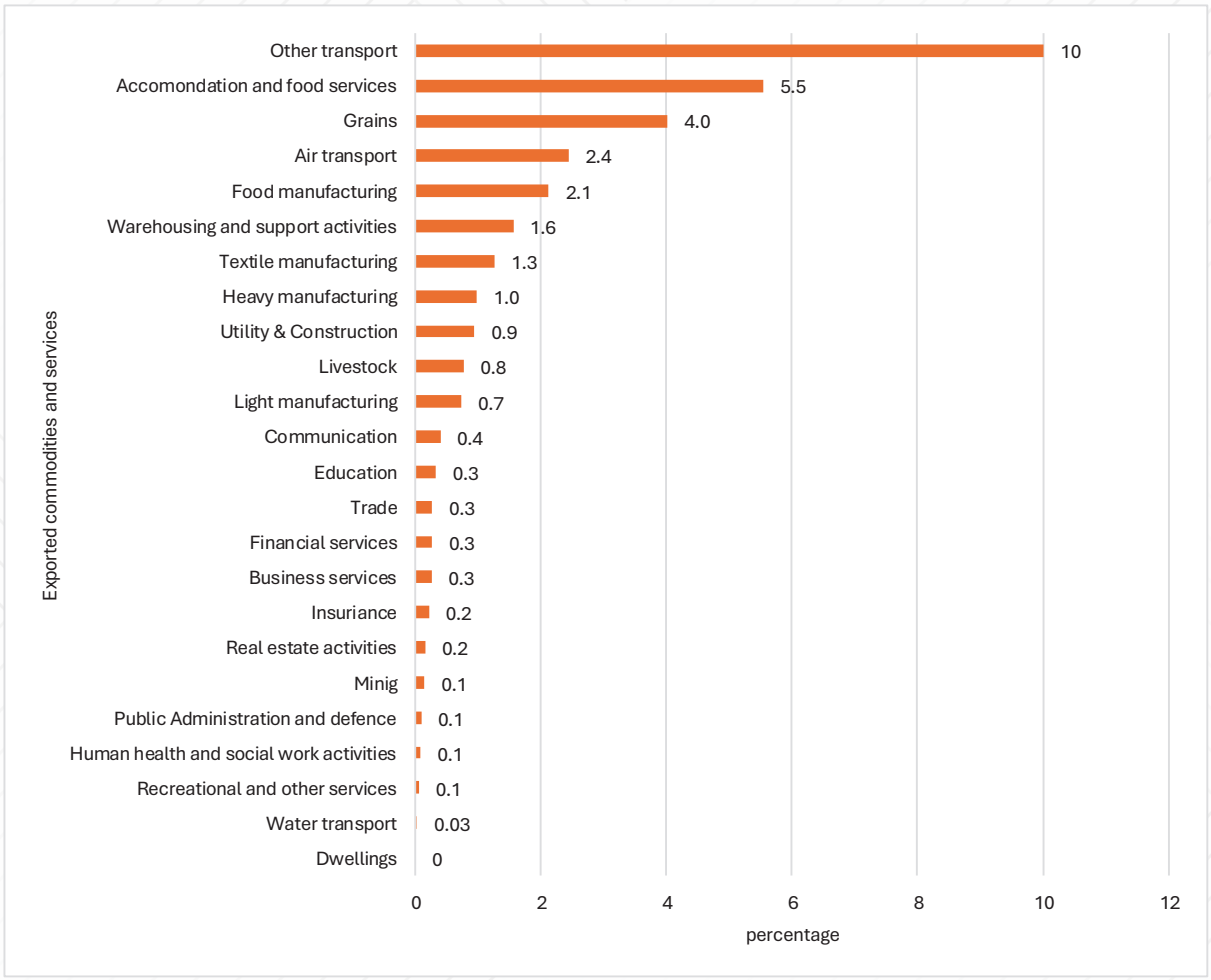
To analyse the role of the Tanzanian economy's services sector in the Global Value Chain (GVC), we apply multi-country input-output tables (GTAP Africa). GTAP data has already been successfully used to understand the role of GVCs in the recent global trade slowdown (UNECA, 2023).

GVC describes the people and activities involved in the production of a good or service, as well as its supply, distribution, and post-sales activities (also known as the supply chain), when these activities must be coordinated across geographies. GVC is similar to the Industry Level Value Chain but encompasses operations at the global level. We employ a multi-stage approach to measure the Tanzanian services sector's participation in GVC.

Multiple studies have found that the share of services in trade in value added is both large (significantly larger than the share of services in gross trade) and increasing (OECD, WTO, and World Bank Group, 2014). However, the total foreign value added in Tanzania's exports accounts for only 4 percent of the total exports across Sub-Saharan Africa. In comparison, the domestic value added in Tanzania's exports constitutes a significant 96 percent of the total exports across the region.

These findings are not surprising, given that Tanzania's share of total gross exports in Sub-Saharan Africa was relatively small, at around 1.3 percent in 2017. In 2023, Tanzania's total exports of goods and services amounted to approximately USD 13.98 billion. In the same year, Sub-Saharan Africa's exports of goods and services totalled USD 523.97 billion. Therefore, Tanzania's exports represented approximately 2.7 percent of Sub-Saharan Africa's total exports in 2023. Figure 14 shows that Tanzania’s exports to SSA are dominated by services, particularly other transport (10 percent), accommodation and food services (5.5 percent), as well as air transport (2.4 percent), followed by grains (4 percent) and food manufacturing (2.1 percent).

Figure 14: Share of Tanzania's gross exports of goods and services in Sub-Saharan Africa's gross exports

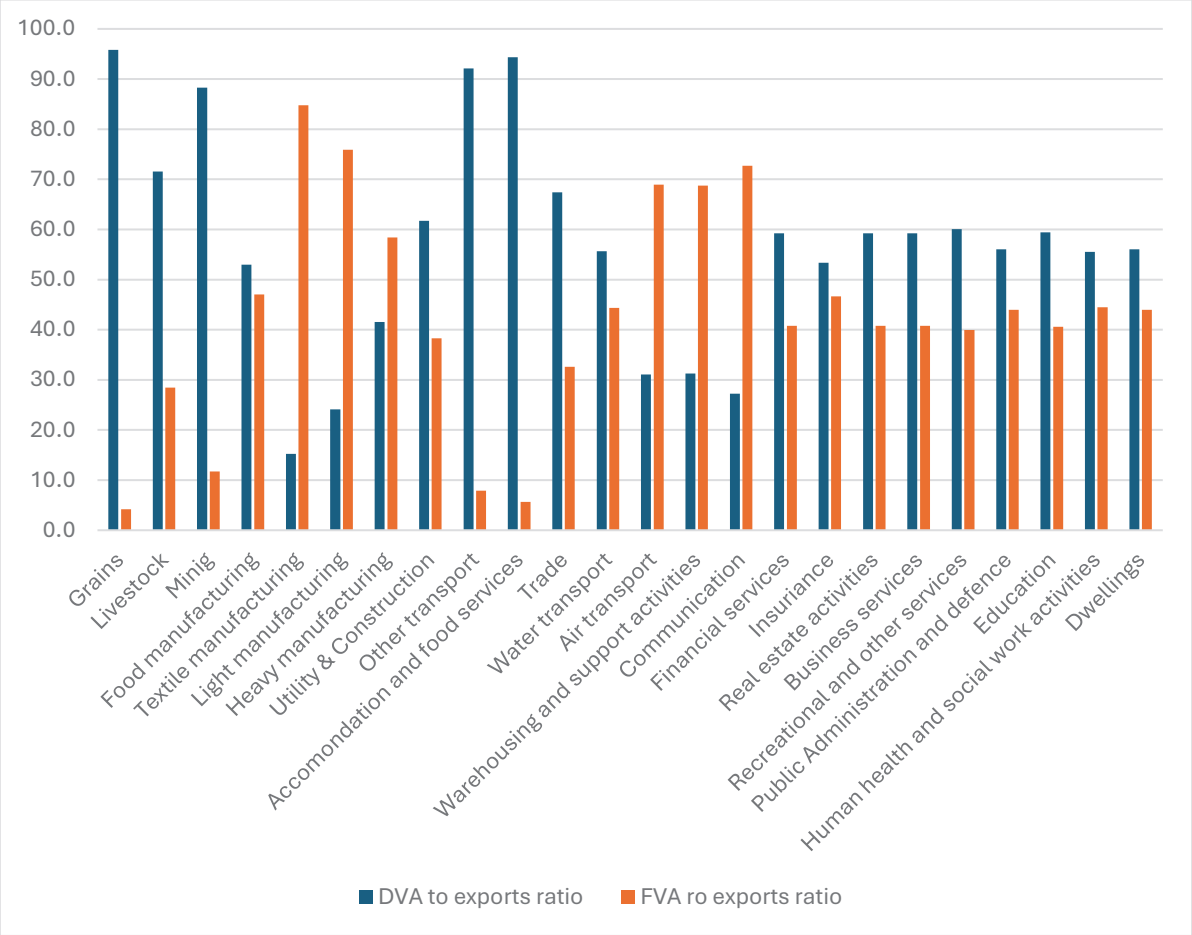


Source: Authors' calculation based on GTAP Africa, 2017

4.6.2 Trade in Value Added (TiVA) by industry

Based on the estimated DVA and FVA contents in gross exports by industry in section 4.5, we estimate the GVC Participation Index (DVA + FVA)/Gross Exports. This indicator illustrates the involvement of each sector in Regional/Global Value Chains (RVCs/GVCs) through both backward and forward linkages. Trade in value-added analysis by industry highlights significant variations across industries in Tanzania. Sectors focused on the extraction of natural resources, agriculture, and retail trade tend to have higher domestic value-added-to-gross-exports ratios, while manufacturing industries generally exhibit lower ratios. Figure 15 displays these ratios for the industries in Tanzania.

Figure 15. Domestic and Foreign value added in gross exports by industry in Tanzania.

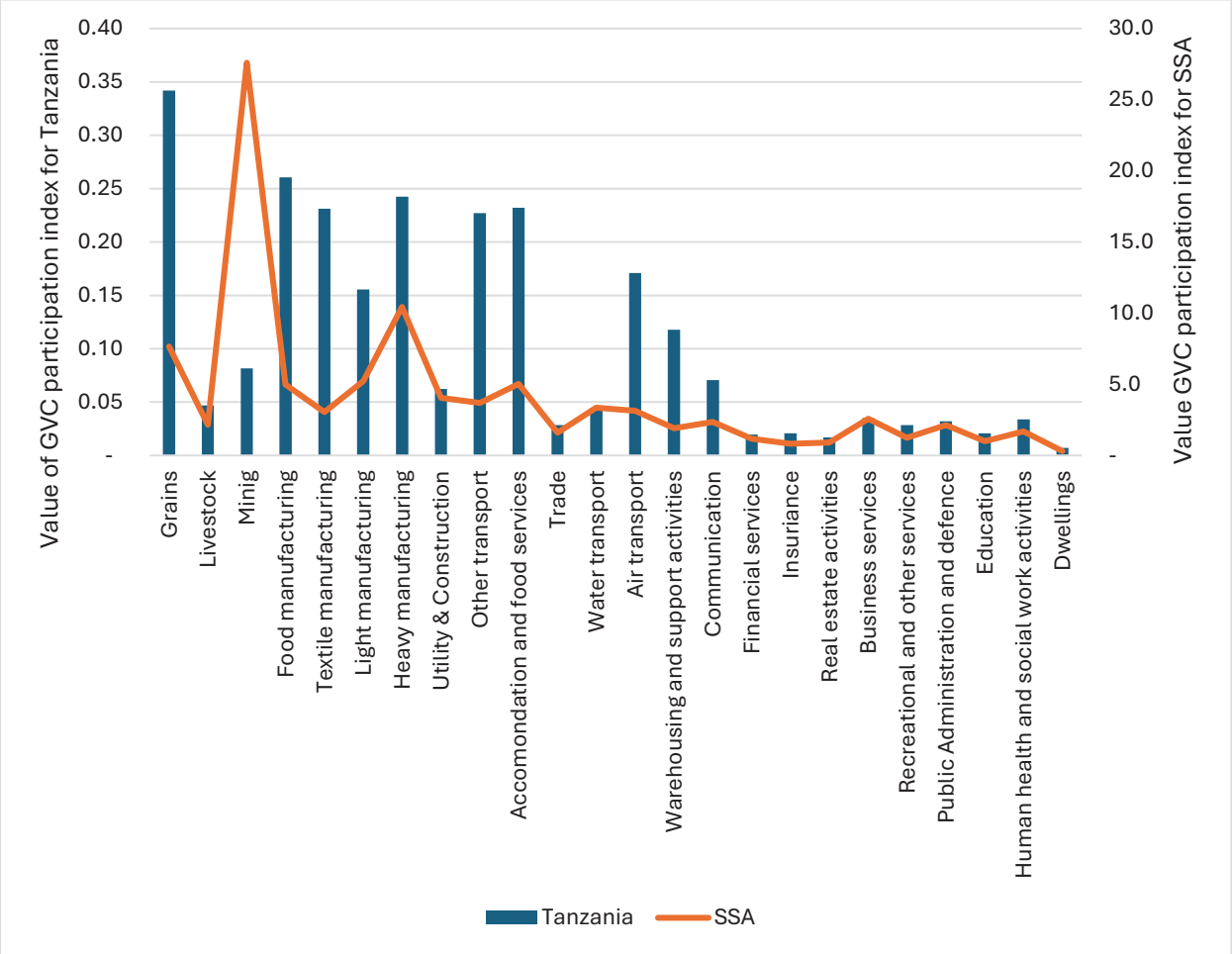


Source: Authors' calculation based on GTAP-Africa

Grain exports have a domestic value-added ratio of more than 90 percent in their gross exports, indicating that these exports are primarily locally produced. While textile, light, and heavy manufacturing have ratios of 15.2 percent, 24.1 percent, and 41.6 percent, respectively, suggesting that the manufacturing sector relies heavily on foreign inputs or value-added. The services industry shows an average ratio of 64.5 percent.

Tanzania's overall GVCs participation index within the SSA region stands at 2.5. The country shows a low GVCs participation index across all sectors (Figure 16), with the lowest indices observed in service industries such as financial and insurance services (0.02), education (0.02), and dwellings (0.01). This indicates that only 2.5 percent of Tanzania's domestic factor content is exported to direct importers. As a result, Tanzania is less integrated into global supply chains, primarily focusing on the production and export of final goods with limited reliance on global inputs or contributions to other countries' production processes.

Figure 16. GVC participation index for Tanzania and SSA



Source: Authors' calculation based on GTAP-Africa

Many countries in Sub-Saharan Africa tend to have lower GVC participation, with their exports often consisting of primary goods, such as agricultural products or raw materials, rather than intermediate goods. According to Mouanda-Mouanda (2019), most African countries have lower GVC participation depending on how much they rely on imports of intermediate goods for local production.

4.6.3 TiVA and trade in services

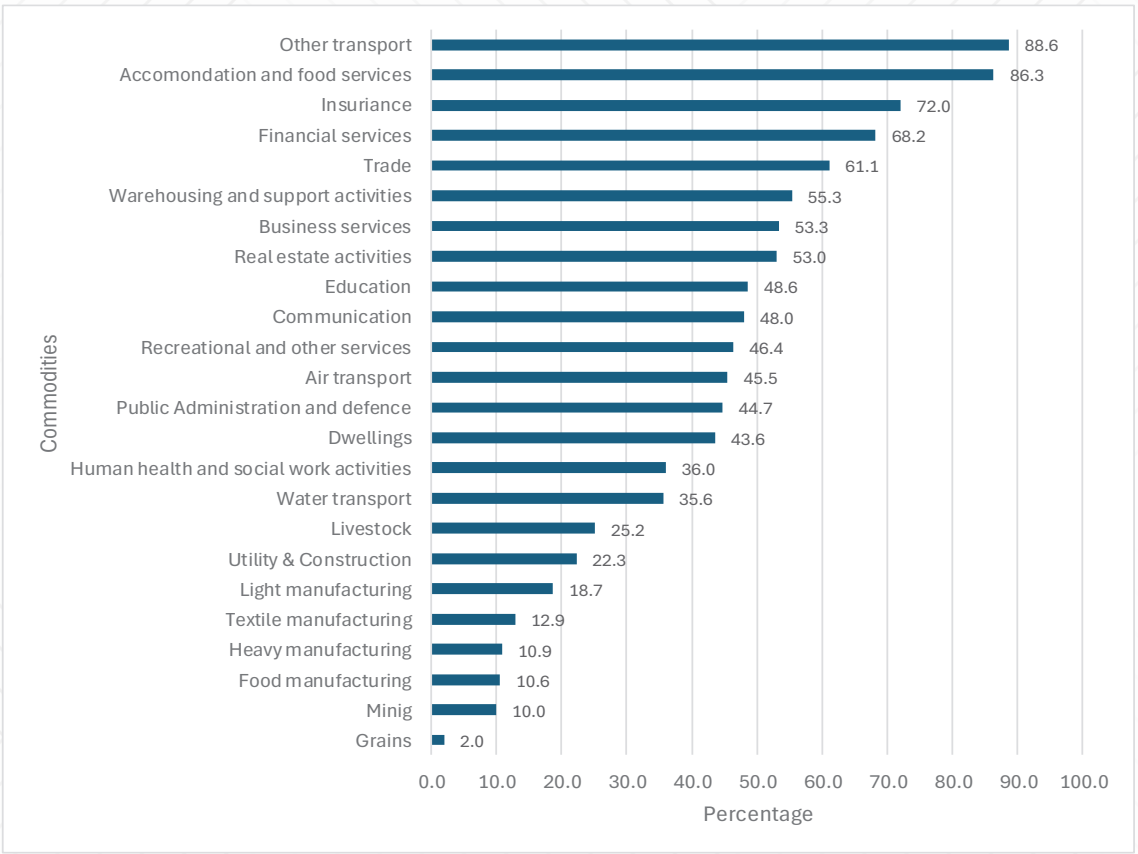
One advantage of the TiVA analysis is that it allows us to estimate the role of services in trade. Such an analysis might be important due to the effect of servicification. In this regard, the shares of domestic and foreign value added from services in gross exports are important indicators of the country's economic performance. Traditionally, we value goods without considering how upstream domestic economic activities, such as industries, contribute to their creation in the initial stages of production. Therefore, we underestimate the weight of services used in the design and commercialization of such goods. Analysis of TiVA is invaluable as it allows us to understand the contribution of services to domestic production and their value-added contribution to trade.

We quantify the value generated in the total services value chain, making it possible to:

- Identify which type of service activities add more value.
- Better understand the bilateral exchanges (the direct and indirect impacts of services);
- Identify source markets that generate more value added in the domestic economy.
- Understand how upstream domestic industries (backward linkages) contribute to service exports.
- Assess whether the increased participation in GVCs can be good for economic development and wealth.

According to the ESCAP report, the recognition of the value created, directly or indirectly, by services in the manufacturing and distribution of goods has become known as "servicification". The expansion of servicification is driven by several factors, most notably the reduction of barriers to trade in services and the spread of Global Value Chains (GVCs). Empirical evidence confirms that GVCs heavily depend on services to connect and coordinate activities across different economies. Moreover, the growing liberalization of trade in services, coupled with advancements in communication and transportation technologies, has enhanced the tradability of services, leading to an increased share of foreign services in industrial exports. Using data from GTAP-Africa, Figure 17 illustrates the proportion of value-added services embedded in Tanzania's exports by industry in 2017.

Figure 17: Services content in exports of Tanzania, by industry, 2017



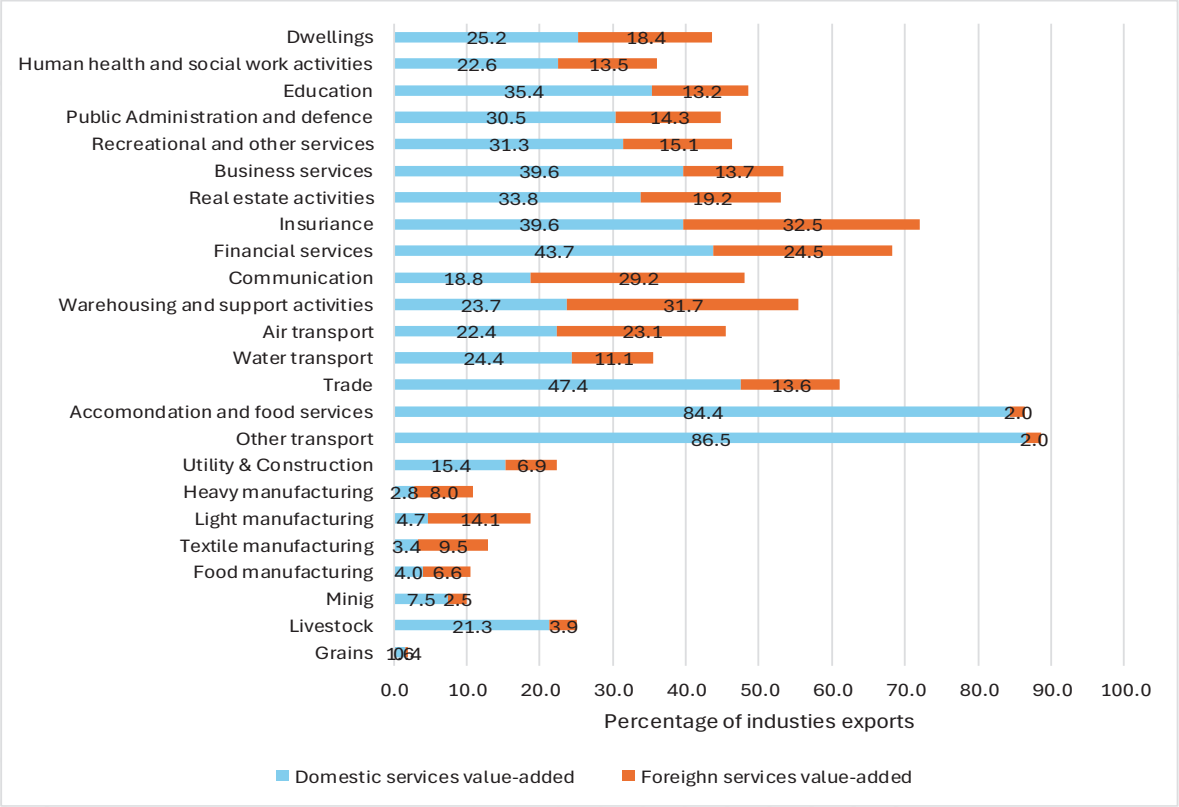
Source: Authors' calculation based on GTAP-Africa

Figure 17 shows that the share of services is not predominant in the primary and secondary sectors. For instance, in grain services, they account for 2 percent of total exports, while

livestock exports have a service share of 25.2 percent. In manufacturing, the service share is relatively modest, ranging from 10.6 percent in food manufacturing to 18.7 percent in light manufacturing. However, the share of services is notably higher in sectors such as Utilities and Construction (22.3 percent), Transportation (88.6 percent), Accommodation (86.3 percent), and Trade (61.1 percent). These findings align with global trends, where transport is identified as one of the most service-intensive industries (World Bank, 2013).

Domestic services account for an average of 27.9 percent of Tanzania's total exports, while foreign services contribute 13.7 percent. There is considerable variation across industries. Notably, the share of foreign services appears to be closely linked to GVC-related exports. For example, Figure 18 shows that the share of imported services is particularly high in sectors such as air transport (23.1 percent), warehousing and support activities (31.7 percent), ICT (29.2 percent), and insurance (32.5 percent), compared to other sectors, especially agriculture and mining exports.

Figure 18. Domestic and Foreign services value added in gross exports by industry in Tanzania



Source: Authors' calculation based on GTAP-Africa

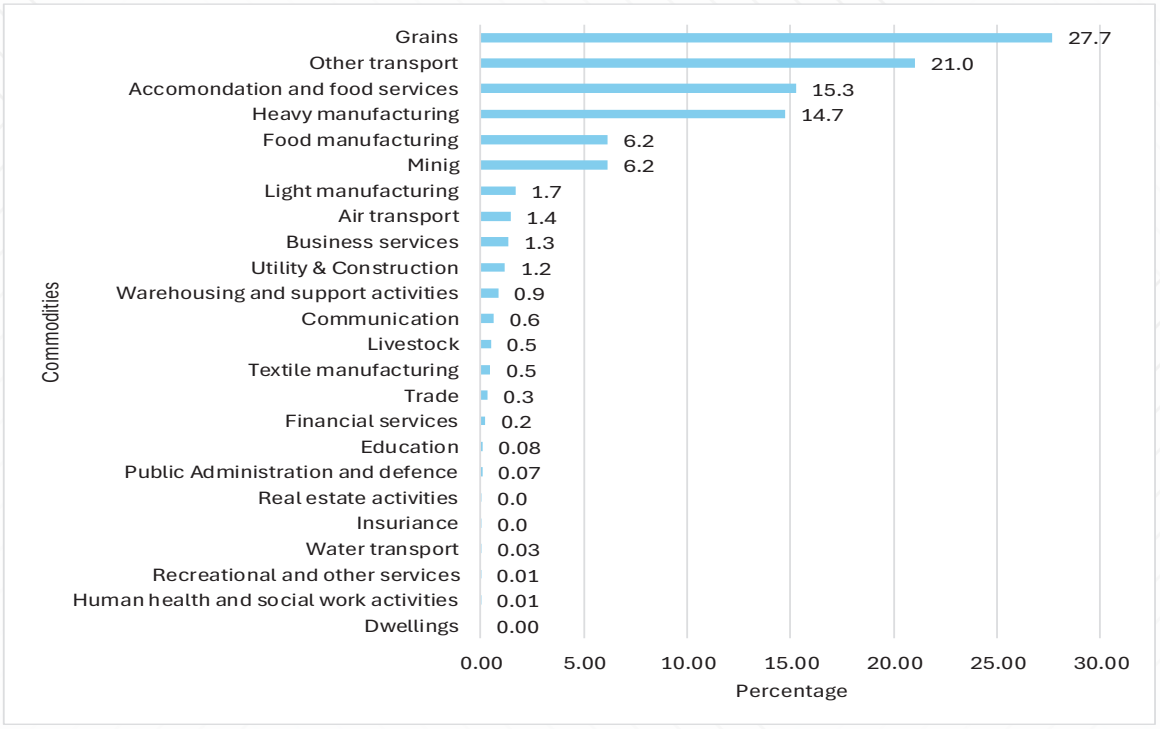
4.6.4 Impact of Service Sectors on Downstream Industries: Emphasis on Integration within Global Value Chains (GVCs)

Services have a significant impact on downstream sectors in global value chains (GVCs), as they provide essential support that enhances the efficiency, flexibility, and competitiveness of industries involved in production and trade. Downstream sectors refer to the stages of production and activities that occur after the initial stages of raw material extraction or primary manufacturing. In other words, the downstream sectors are sectors close to the final consumer

in the value chain. These sectors rely on services to manage logistics, financing, compliance, communication, and innovation, among other factors. Backward linkages (upstream participation[10]) and forward linkages (downstream participation) are included in the analysis.

In this section, we illustrate the impact of service sectors on downstream industries using the Indirect Domestic Value Added in Exports indicator. Industries may not directly export goods or services but still contribute to exports by providing essential inputs to export sectors. Indirect DVA represents the value-added contributed by upstream Tanzanian industries that supply intermediate goods or services to exporters. For example, when a grain exporter uses local trucks, warehousing, and business services to transport its product abroad, then the value of those services embedded in the final export comprises the total "indirect domestic value-added" for each exporting industry in the economy. Figure 19 illustrates the indirect[11] domestic value added by industry to gross exports through intermediate supplies to other sectors.

Figure 19: Contribution of indirect Domestic value-added in exports to gross exports in Tanzania, by industries, 2017



Source: Authors' calculation based on GTAP-Africa

[10] Backward linkages (upstream participation) is created between a purchasing industry and a supplying industry. Generally, it is understood as the linkages between an importing country and an exporting country. In other words, the industries in the importing country import intermediate products to be used in its exports. It is calculated by adding the foreign value added to the country's exports (FVA).
Forward linkages or downstream participation is created between a supplying industry and a purchasing industry that uses the supplier's output as input. It can be understood as the linkages between an exporting economy and an importing economy whose industries use the exports (supply) as inputs to generate output for exports. In other words, the industries of the exporting country provide inputs into exports of the industries in the importing countries. It is calculated by the domestic value added in exports of other countries (DVX). Forward participation in the global value chain corresponds to the domestic VA embodied in foreign exports and commonly presented as a share (percent) of total gross exports of the value-added source country. It is considered as the contribution of intermediate goods and services that will be used by the destination economy in the production of goods and services for export.

[11] According to the OECD Trade in Value Added (TiVA) indicators, domestic value-added in exports can be broken down into:
- Direct DVA: Value-added generated by the exporting industry itself.
- Indirect DVA: Value-added contributed by upstream domestic industries supplying intermediate goods or services to exporters.

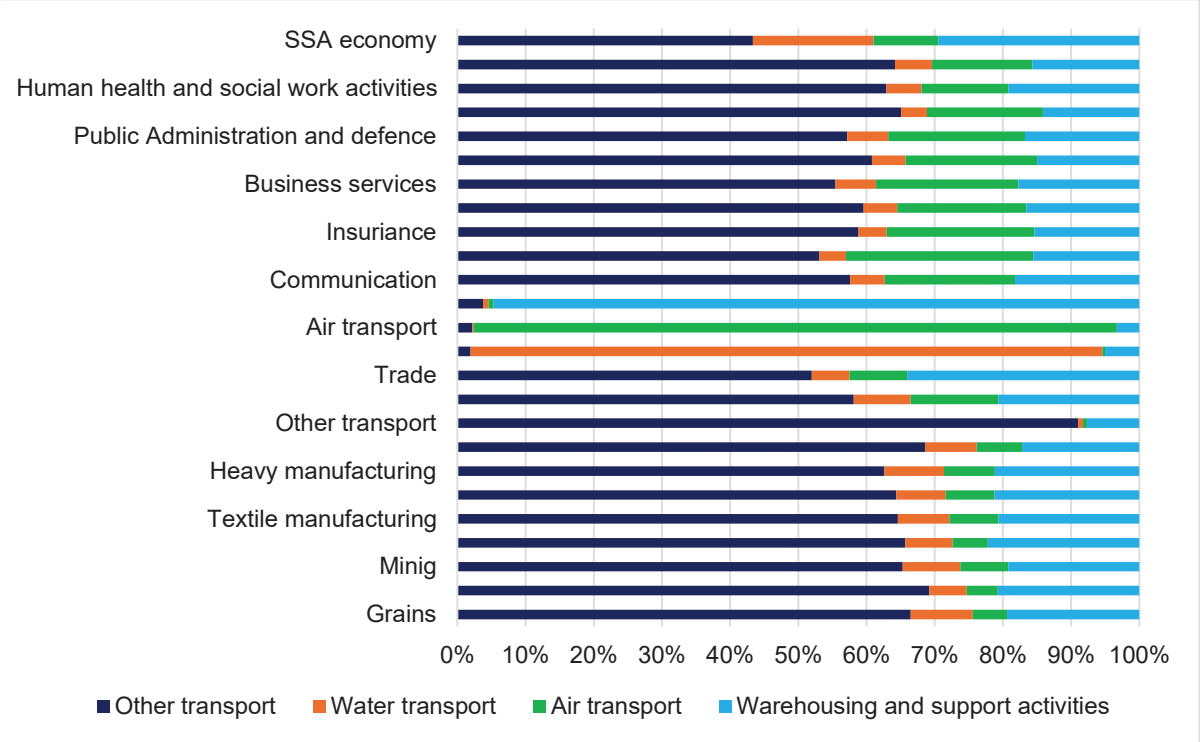
Figure 19 shows that transport services contribute 22.7 percent of the total services value added in gross exports, underscoring their vital role in supporting export-oriented sectors. Transport-related services (shipping, logistics, trucking) are the single most significant service input, with over one-fifth of total export value relying on them.

Accommodation and food services account for a 15.3 percent share, reflecting their significant contribution to tourism-related exports. In contrast, other services, such as ICT, professional, financial, and social services, contribute only 2.8 percent of the value added to gross exports. This low indirect domestic value-added (DVA) suggests that these sectors rely minimally on local supply chains. Instead, exports in these areas are driven more by imported inputs or direct production within the exporting entities themselves. Consequently, the domestic integration of high-value services in the export sector remains limited, highlighting a potential area for development in strengthening local service linkages and capabilities.

We then examine the composition of indirect domestic value added (DVA) in Tanzania's key service exports, including transport, finance and insurance, as well as other services such as ICT, professional, and social services. This is essential to understanding the extent of local economic integration in the export sector. Figure 20 breaks down, for each Tanzanian exporting industry, how its indirect domestic value-added in transport services is composed across four transport sub-sectors: Other transport (mostly road haulage and trucking), Water transport (inland shipping, coastal freights), Air transport (cargo flights, air logistics) and Warehousing & support activities (storage, freight forwarding, terminal operations).

Transportation services are essential for moving goods along the value chain. Efficient logistics, including shipping, trucking, air freight, and warehousing, ensure that raw materials and components are delivered to downstream manufacturers on time, and finished products reach markets efficiently. "Other transport" accounts for the largest share of the value of transport services embedded in exports. This implies that most industries in Tanzania rely on transport services (Figure 20). Goods-intensive sectors, such as grains, manufacturing, mining, and road transport, contribute more than 70 percent of their transport-service linkages. Likewise, service exports, such as communication and business services, rely on road transport to move inputs, including equipment.

Figure 20. Composition of indirect domestic value added in exports of transport services, by industry, percent

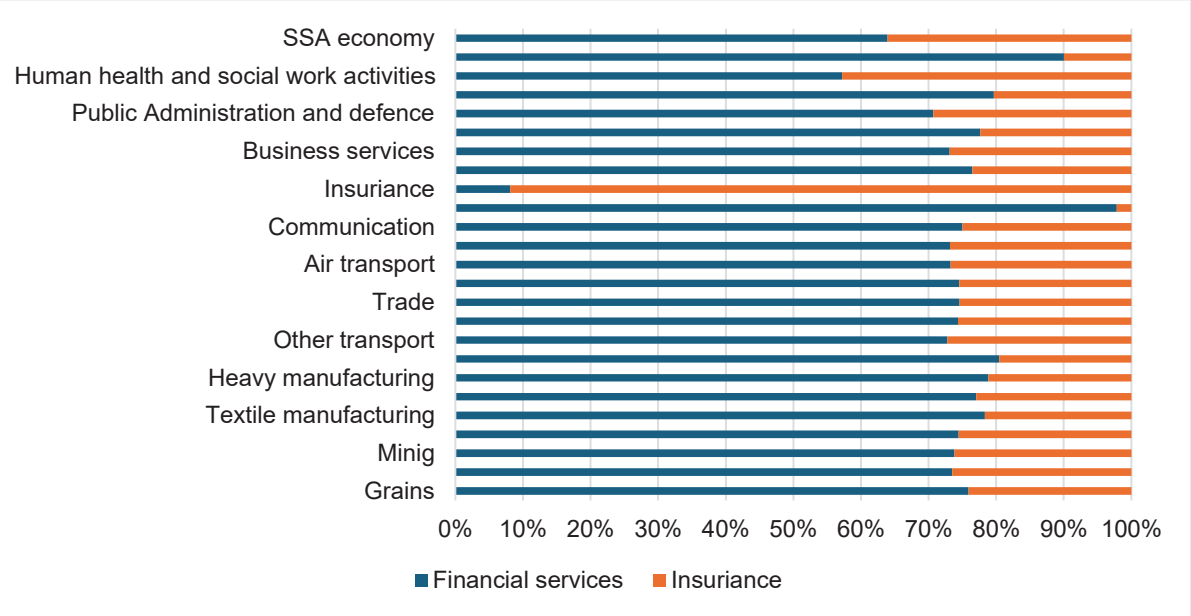


Source: Authors' calculation based on GTAP-Africa

Warehousing and support services account for around 10 percent of transport value-added in most industries. However, water and air transport account for relatively small shares, except for trade activities, reflecting their limited use in Tanzania's export logistics. If transport logistics are efficient, the factory can operate smoothly without disruptions, allowing for the timely delivery of finished goods to consumers. Smooth and cost-effective logistics help reduce delays, prevent bottlenecks, and lower production costs, ultimately improving the competitiveness of downstream industries. Delays or inefficiencies in transportation can result in production downtime, increased inventory costs, and missed market opportunities.

Financial services also play a crucial role in supporting businesses in downstream sectors by providing access to capital, managing risk, and facilitating cross-border transactions. This includes services such as trade financing, banking, and insurance. Figure 21 shows the forward linkages of financial and insurance services in gross exports across all industries in Tanzania.

Figure 21. Composition of indirect domestic value added in exports of financial and insurance services, by industry, percent, 2017

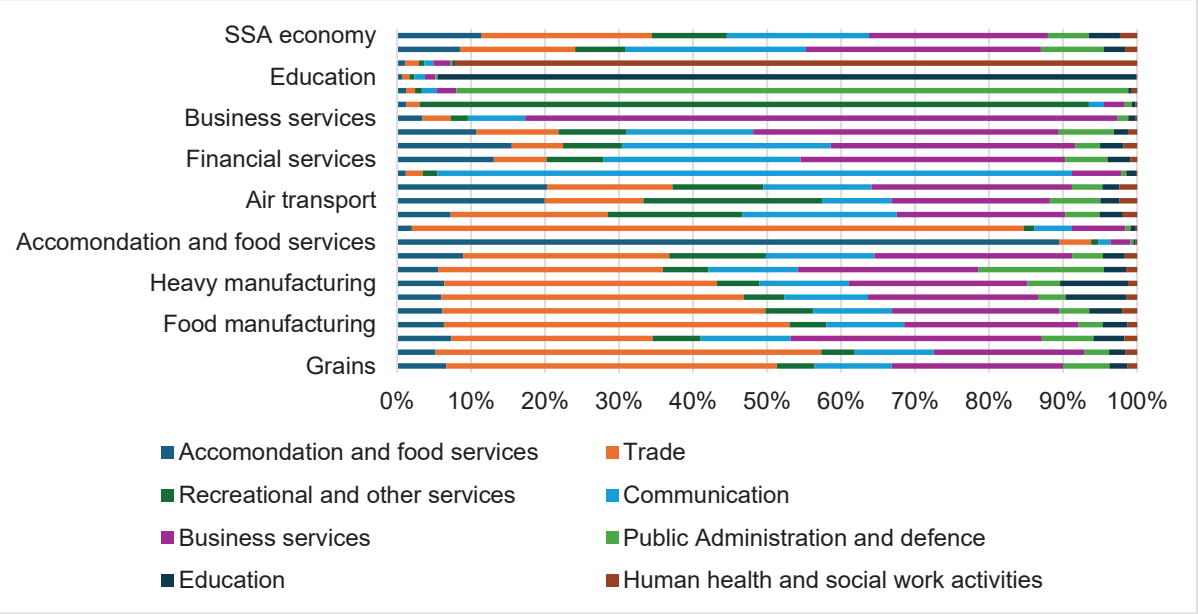


Source: Authors' calculation based on GTAP-Africa

For Sub-Saharan Africa (SSA), the contribution of Tanzania's financial sector services to value-added exports is less than 1 percent. Of the value added by Tanzania's financial services, 83 percent is consumed domestically, while 17 percent is embedded in the exports of other countries. Financial services enable downstream businesses to manage cash flow, invest in new equipment or technologies, and handle financial risks associated with international trade. These services also enable companies to access credit, allowing them to maintain operations during periods of growth or economic downturns.

For some downstream sectors, such as retail, accommodation and food services, and recreation, demand can be significantly influenced. As the population grows, demand for local goods and services increases, creating opportunities for downstream industries. Figure 22 shows the forward linkages of other services in gross exports across all industries in Tanzania.

Figure 22. Composition of indirect domestic value added in exports of other services, by industry, percent



Source: Authors' calculation based on GTAP-Africa

Figure 22 shows that, trade embed the largest share in the indirect DVA of exports reflecting its role in supplying inputs such as buying, marketing etc along value chains. Other services, such as tourism and hospitality services, also play a significant role in stimulating demand in downstream industries, including food and beverage production, local handicrafts, and entertainment services. This demand boosts production in downstream sectors, contributing to economic growth.

Generally, most of Tanzania's exports rely heavily on transport-related services, primarily land transport, storage, and warehousing, followed by accommodation and food services, due to the booming tourism sector. On the contrary, other services, such as ICT, professional, and financial services, have a low indirect DVA, suggesting that these high-value services are less embedded as inputs in Tanzania's exports. Thus, Tanzania remains one of the least integrated countries in GVCs, with its participation primarily driven by forward linkages, characterized by a high domestic value content in exports. Similarly, the foreign value-added content of exports (backward participation) remains relatively low. Backward GVC participation accounted for just 1 percent of Tanzania's GDP, compared to an average of 2.1 percent across Africa and 4.3 percent in Southern Africa.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary and Conclusion

This study provides evidence on the role of services in the Tanzanian economy within global value chains, both as integrative elements linking activities across African countries and as value-creating components in the broader context of the servicification of manufacturing. In Tanzania, the service sector has recorded the highest share of value added since the 2000s, with an average annual growth rate of around five percent from 2012 to 2023. The highest GDP-contributing service sub-sectors are wholesale and retail trade, repairs, transport and storage, public administration and defence, finance and insurance, and real estate. Nevertheless, service sub-sectors with the highest growth potential include Arts, entertainment, and recreation, finance and insurance, and accommodation and food services.

Before 1999, the share of the services sector in GDP was negatively affected by the size of income (GDP per capita), labour productivity growth, trade liberalization, and the level of capital stock (Gross fixed capital formation). However, in the long term, trade liberalization and foreign direct investment significantly contributed to the expansion of the service sector. Trade liberalization measures implemented during the 1990s, including the 1996 Economic Recovery Programme, eliminated cost-price distortions and promoted private sector development, particularly among farmers, small enterprises, and the informal sector, which contributed to the rising share of services in GDP. Furthermore, an increase in Foreign Direct Investments (FDI) inflows has led to higher concentrations of foreign capital in mining and quarrying, finance and insurance, and manufacturing, collectively representing 88 percent of total flows as of 2022. In addition, information and communication, accommodation, and food services also attracted significant FDI inflows, contributing to the expansion of these service sub-sectors.

Although GDP per capita recorded an increasing trend in Tanzania, a significant share of households' income is spent on food rather than non-food items. This increase, therefore, does not adequately support the expansion of the overall services sector. In addition, the structure of the Tanzanian services sector is labour-intensive (particularly in the informal sector), with significant investments in physical capital concentrated in the construction and manufacturing sectors. This partly explains why physical capital was found to negatively impact the services share in GDP. Moreover, labour productivity gains were found to have an insignificant influence on the services share of GDP as the service sector is dominated by low productive labour as labour is reallocated from agriculture due to structural change.

Service industries are interconnected with other industries through backward and forward linkages. A decline in the value-added of services or a reduction in demand for primary inputs would result in output loss of downstream sectors (those that purchase services as inputs). The highest output loss is experienced in electricity (79 percent), water (42 percent), mining (21 percent), and manufacturing (15 percent). This implies that, these sectors have the highest forward linkages with the service sector.

On the other hand, output loss of upstream sectors (those that supply input into services) due to a decline in final demand for services are primarily experienced in electricity (13 percent), agriculture (7 percent), manufacturing (7 percent), and mining (4 percent). Services account for 12 percent of GDP in terms of backward linkages, thus safeguarding the stability and

efficiency of these foundational industries is essential for maintaining economic resilience and continuity.

The growth of the service sector led to the expansion of service exports, as the country has been recording a services trade surplus since 2001. Travel and transportation services top Tanzania's service exports, similar to most countries worldwide, but comparatively higher than those Eastern African countries. Leveraging on the potential of transportation and travel service exports, especially in the regional blocks, can potentially boost the country's export receipts. When service exports are decomposed, findings reveal that Tanzania depends more on domestic value added (DVA) for production of both export goods and services particularly in primary sectors, agriculture and mining and services. This reflects high dependence on local natural resources and labour embedded in exports which align with high traditional Tanzania's exports, raw materials, mining products, travel, and transportation. The manufacturing sector has high foreign content, but DVA shows an increasing trend between 2015 and 2019, revealing an increase in domestic linkages and the corresponding decline in the use of imported inputs.

On the other hand, in 2019, the DVA content of transport, tourism, finance and insurance, real estate and business services exports slightly decreased compared to 2015 implying a substitution to more FVA content and increasing integration into the GVCs. While transportation services accounts for the largest share of Tanzania's service exports, the sector has relatively less DVA content compared to other sub-subsectors. This is due to high reliance on imported intermediate inputs for building and maintaining the transport infrastructure. Therefore, the domestic economy benefits relatively less which underscores the need to foster industrialization policies that would encourage production of the most intermediate inputs such as machinery and equipment.

Focusing on the GVCs integration, Tanzania's overall GVCs participation index within the SSA region stands at 2.5. The country shows a low GVCs participation index across all sectors with the lowest indices observed in service industries such as financial and insurance services (0.02), education (0.02), and dwellings (0.01). This indicates that only 2.5 percent of Tanzania's domestic factor content is exported to direct importers. As a result, Tanzania is less integrated into global supply chains, primarily focusing on the production and export of final goods with limited reliance on global inputs or contributions to other countries' production processes.

Services are not only embedded in the country's gross exports of final goods or services themselves, but they are also indirectly embedded in the intermediate inputs used to produce the final goods and services. The indirect domestic value added thus measures the value-added contributed by upstream domestic industries supplying intermediate goods or services to exporters. Thus, in supporting export-oriented sectors, transport-related services (shipping, logistics, trucking) are the single most significant service input, with over one-fifth of total export value relying on them. Accommodation and food services account for a 15.3 percent share, reflecting their significance in tourism-related exports, while ICT, professional, financial, and social services, contribute only 2.8 percent of the value added in gross exports. This low indirect domestic value-added (DVA) suggests that these sectors rely minimally on local supply chains. Consequently, the domestic integration of high-value services in the export sector remains limited, highlighting a potential area for development in strengthening local service linkages and capabilities.

Generally, Tanzania remains one of the least integrated countries into GVCs, with participation primarily driven by forward linkages, as its exports, which are mainly resource-based, serve as inputs in other countries' production. This also reflects the relatively high domestic value-added content of Tanzania's exports. By contrast, backward participation, measured by the foreign value-added content of exports, remains relatively low. Backward GVC participation accounted for just 1 percent of Tanzania's GDP, compared to an average of 2.1 percent across Africa and 4.3 percent in Southern Africa.

5.2 Recommendations

To optimize backward and forward linkages between the service, industry, and agriculture sectors in Tanzania, the following policy recommendations could be considered:

- **Promote Domestic Production of Intermediate Goods**

Tanzania Investment Centre (TIC) should provide targeted incentives, such as tax breaks, low-interest loans, and grants, to firms producing machinery, equipment, and other intermediate inputs. This will lower dependence on imports, deepen backward linkages with local suppliers, and build the domestic supply base for industry and agriculture.

- **Strengthening Local Supplier Capacity in Transport, Tourism, and Finance**

While encouraging integration into global value chains, the government should launch supplier development programmes-offering technical assistance, quality certification, and market linkages to domestic firms in the transport, tourism, and financial services sectors. This will ensure that rising foreign value-added content is complemented by robust local sourcing.

- **Channel Investment into Import-Intensive Service Sub-Sectors**

To capture more value domestically, public and private investors should prioritize financing joint ventures and capacity building in sectors with high imported-services content (e.g., business process outsourcing, specialized logistics). Matching grants and investment guarantees can stimulate local investment, ensuring that export gains remain within Tanzania.

- **Build High-Value Service Capabilities**

The government should establish innovation hubs and skills-development centres focused on ICT, professional services, financial technology, and health and education services. By fostering clusters of excellence with streamlined regulations and public-private partnerships Tanzania can enhance forward linkages that integrate these advanced services into export chains.

- **Enhance Transport Efficiency and Reduce Trade Costs**

Through the National Transport Master Plan, it is recommended that investments and reforms should be prioritized to:

1. Upgrade key road corridors and rail links to major ports.
2. Digitize and harmonize border-crossing procedures.
3. Streamline cargo handling and warehousing regulations. These steps will cut transit times and costs, directly improving the competitiveness of Tanzania's exports.

- **Leverage Fast-Growing Service Sectors for Exports**

The Tanzania Trade Development Authority (TanTrade) should develop sector-specific export strategies for the arts, entertainment, and recreation, as well as finance and insurance, and

accommodation and food services. Measures could include trade missions, digital marketing support, and regional trade-block partnerships to unlock new markets and increase export revenues.

- **Optimize Forward Linkages from Utilities**

Recognizing that electricity and water utilities predominantly feed into service industries, regulators and sector agencies should coordinate tariff structures and reliability investments to ensure stable and affordable utility supply, enabling downstream service and manufacturing firms to expand output and exports.

- **Deepen Domestic Linkages in Manufacturing**

Building on the observed rise in domestic value-added in manufacturing since 2015, the government should scale up "local content" requirements in public procurement, paired with supplier development grants, to further reduce reliance on foreign inputs and boost backward linkages.

- **Integrate Tanzania More Fully into Global Value Chains**

GVC integration strategy should be adapted that includes:

1. Identifying and attracting anchor investors in agro-processing and light manufacturing to establish export platforms.
2. Negotiating mutually beneficial trade facilitation agreements with key partners in the region.
3. Providing export processing zones with improved infrastructure and one-stop customs services. These initiatives will transform Tanzania from a traditional goods exporter to an active participant in multi-stage global production networks.

REFERENCES

AFDB. (2013). TANZANIA Transport Sector Review. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Tanzania_-_Transport_Sector_Review.pdf

Andersen, B., & Corley, M. (2003). The theoretical, conceptual and empirical impact of the service economy: A critical review (UNU-WIDER Discussion Paper No. 2003/22).

Banga, R. (2014). Linking into global value chains is not sufficient: Do you export domestic value-added contents? Journal of Economic Integration, 29(2), 267–297. https://doi.org/10.11130/jei.2014.29.2.267

Bank of Tanzania. (2004). Monthly Economic Review. https://www.bot.go.tz/Publications/Regular/Monthly percent20Economic percent20Review/sw/2020021122485355427.pdf

BOT. (2023a). Tanzania Investment Report. Foreign Private Investments. https://www.bot.go.tz/Publications/Other/Tanzania percent20Investment/en/2024112109463617.pdf

BOT. (2023b). The 2023 International Visitor's Exit Survey Report. Tanzania Tourism Sector Survey.

Cecilia Heuser & Mattoo, A. (2017). Services Trade and Global Value Chains (World Bank Policy Research Working Paper 8126).

Clark, C. (1940). The Conditions of Economic Progress. London: Macmillan.

Coto-Millán, P., Fernández, X. L., Pesquera, M. Á., et al. (2016). Impact of logistics on technical efficiency of world production (2007–2012). Network and Spatial Economics, 16, 981–995. https://doi.org/10.1007/s11067-015-9306-6

Dabús, C., & Delbianco, F. (2021). Economic development and structural change: The role of services. Journal of Economic Development, 46(3).

Dietzenbacher, E., & van der Linden, J. A. (1997). Sectoral and spatial linkages in the EC production structure. Journal of Regional Science, 37, 235–257.

Diao, X., Kweka, J., & McMillan, M. (2016). Economic transformation in Africa from the bottom up: Macro and micro evidence from Tanzania. NBER Working Paper 22889. National Bureau of Economic Research.

Diao, X., Ellis, M., McMillan, M. S., Rodrik, D., & Kennedy, J. F. (2021). Africa's manufacturing puzzle: Evidence from Tanzanian and Ethiopian firms (NBER Working Paper 28344). http://www.nber.org/papers/w28344

ESCAP. (2013). Asia-Pacific Trade and Investment Report (APTIR) 2013. Economic and Social Commission for Asia and the Pacific. http://www.unescap.org/resources/asia-pacific-trade-and-investment-report-2013-turning-tide-towards-inclusive-trade-and

Fisher, A. G. B. (1933). Capital and the growth of knowledge. Economic Journal, September.

Foellmi, R., & Zweimüller, J. (2008). Structural change, Engel's consumption cycles and Kaldor's facts of economic growth. Journal of Monetary Economics, 55(7), 1317–1328. https://doi.org/10.1016/j.jmoneco.2008.09.001

Francois, J., & Woerz, J. (2008). Producer services, manufacturing linkages, and trade. Journal of Industry, Competition and Trade, 8(3–4), 199–229.

Gereffi, G., Humphrey, J., Kaplinsky, R., & Sturge, T. (2001). Globalisation, value chains and development (IDS Bulletin 32.3). Institute of Development Studies. http://www.ids.ac.uk/files/dmfile/gereffietal323.pdf

Gibbon, P., & Raikes, P. (1995). Structural adjustment in Tanzania, 1986–94. http://www.tzonline.org/pdf/structuraladjustmentintanzania.pdf

Hess, M., & Yeung, H. W.-c. (2006). Whither global production networks in economic geography? Past, present and future. Environment and Planning A, Special Issue on "Global Production Networks," Vol. 38.

Johnson, R. C., & Noguera, G. (2012). Accounting for intermediates: Production sharing and trade in value-added. Journal of International Economics, 86(2), 224–243.

Kahyarara, G. (2019). Population growth and its effects on labour productivity in Tanzania. Tanzanian Journal of Population Studies and Development, 26(1).

Kanaan, O. (2000, June). Tanzania's experience with trade liberalization. Finance & Development: A Quarterly Magazine of the IMF.

Kee, H. L., & Tang, H. (2016). Domestic value added in exports: Theory and firm evidence from China. American Economic Review, 106(6), 1402–1436. https://doi.org/10.1257/aer.20131687

Kweka, J., Morrissey, O., & Blake, A. (2003). The economic potential of tourism in Tanzania. Journal of International Development, 15(3), 335–351. https://doi.org/10.1002/jid.990

Leontief, W. (1936). Quantitative input and output relations in the economic system of the United States. *Review of Economics and* Statistics*, 18*, 105–125.

Mazungunye, P. P., & Punt, C. (2022). Industrialisation for structural transformation: Economy-wide impacts of agro-processing development in Tanzania. *Development Southern Africa, 39*(3), 400–423. https://doi.org/10.1080/0376835X.2021.1947191

Miroudot, Sébastien & Ye, Ming, 2017. "Decomposition of Value-Added in Gross Exports: Unresolved Issues and Possible Solutions," MPRA Paper 83273, University Library of Munich, Germany.

Mouanda-Mouanda, G. (2019). Global value chains participation for African countries: An overview from UIBE GVC Index System. Open Journal of Business and Management, 7, 941–962. https://doi.org/10.4236/ojbm.2019.72064

National Bureau of Statistics (NBS). (2019). Tanzania Mainland Household Budget Survey 2017–18: Key Indicators Report.

Newfarmer, R. S., Page, J., & Tarp, F. (2018). Industries without smokestacks: Industrialization in Africa reconsidered. Oxford University Press.

https://doi.org/10.1093/oso/9780198821885.001.0001

Nord, R., Sobolev, Y., Dunn, D., Hajdenberg, A., Hobdari, N., Maziad, S., & Roudet, S. (2009). Tanzania: The story of an African transition. International Monetary Fund.

OECD, & World Bank Group. (2014). Global value chains: Challenges, opportunities, and implications for policy. Report prepared for submission to the G20 Trade Ministers Meeting, Sydney, Australia, 19 July 2014.

Pesce, O., Tumuhimbise, C., Davis, W., & Sommer, L. (2019). The importance of the services sector for Africa. In A. Adewole & J. J. Struthers (Eds.), Logistics and Global Value Chains in Africa (pp. –). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-77652-1_8

URT. (2010). Annual Survey of Industrial Production and Performance, 2008: Analytical Report. https://www.nbs.go.tz/uploads/statistics/documents/sw-1705493816-ASIP_2008_Analytical_Report.pdf

UNCTAD. (n.d.). Investment Policy Review: The United Republic of Tanzania.

World Bank. (2013). Services Linkages and the Value-Added Contents of Trade (Policy Research Working Paper 6432). http://econ.worldbank.org/external/default/main?pagePK=64210502&theSitePK=469372&piPK=64210520&menuPK=64166093&entityID=000158349_20130501132925

World Bank. (2021). Toward a Sustainable, Resilient, and Inclusive Sector Transforming Tourism. www.worldbank.org

Wamboye, E. F. (2022). The question of Africa's economic sectors and development. In E. F.

Wamboye & B. Fayissa (Eds.), The Palgrave Handbook of Africa's Economic Sectors (pp. –). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-75556-0_1

APPENDICES

Appendix 1: International and multi-regional input output databases

Database name	Organisation	Year released	Paper	Countries covered	Years covered	Industries	Comments
APEC (Asian international IOTs)	Asian Development Bank (AdB)	2014	Meng et al. (2013)	25 Asian and Pacific countries 62 economies (90% of GDP)		35 industries (Based on ISIC Rev 3)	Completed the region for WIOD Priorities NSO data but five countries are estimates from research
South American IOT	IPEA and ECLAC	2016	Organization publication	10 South American countries	2005	40 industries	NSO data
UNCTAD-Eora (Eora multi region IOTs)	UNSD		Lenzen and others (2013) Casella et. Al (2019)	189 countries and the Rest of World	1990 to 2021	26 industries	26 Analytical model drawing many sources and interpolating missing points
FIGARO (full international and global accounts for research in IO analysis) Eurostat	National Accounts and DG Joint Research Centre	2015	Remond-Tiedrez (2019) Rueda-Cantuche and others (2017)	28 countries planned as part of 2015 group	Base 2010 – 2015 (Annual)	10 industries	
Global MRIO			Lab Lenzen and others (2016)				
GTAP (multi region input	Purdue University	2020	Peters, Andrew, and Lennox (2011)	121 countries plus 20 regions	2004, 2007, 2011, 2014	65 industries (GTAP 11 Data Base)	Extensions such as end land use, carbon dioxide emissions

output table)[12]							and migration
The GTAP Africa 3 Data Base	Purdue University	2020	Peters, Andrew, and Lennox (2011)	51 regions (43 African regions, plus 8 other aggregated regions)		65 industries of the GTAP 11 Data Base	
OECD ICIO (inter-country input-output table)	OECD	2018 (latest release)	Yamano and Webb	66 countries in the 21st edition	2005 to 2018	45 industries	NSO data
WIOD (World Input Output Database)	Growing Growth and Development Centre	2016 (latest release)	Dietzenbacher and others (2013) and Timmer (2012)	43 economies	2000-2014	56 industries	Prioritises use of imports data scrutinized by NSO and central banks
EXIOBASE			Tukker et al. (2013)	44 EU countries +5 rest of the world regions	1995-2013	200 industries	
NAFTA-TiVA		2021	Hallren et al. (2017)	3 countries			
The UNECA AfCIOT Model and Database A tool for TiVA and GVC Analysis in Africa	The Economic Commission for Africa (ECA), in collaboration with the Organization of	2020		64 countries plus 16 African[13] countries as part of the model[14]. The remaining	1998-2018	45 industries	

[12] The GTAP Africa 3 Data Base includes data for 51 regions (43 African regions, plus 8 other aggregated regions) and the 65 sectors of the GTAP 11 Data Base.

[13] African countries currently in ICIO: Morocco, Tunisia, South Africa. African countries about to join ICIO: Cameroon, Cote d'Ivoire, Egypt, Nigeria, Senegal

[14] Tanzania is not included

	Economic Cooperation and Development (OECD) and World Trade Organization (WTO)			countries are presented as one country, the Rest of Africa (RoA)			

Source: Authors' compilation based on Xiaoning Gong, Eleanor Keeble, David Boko, and Ana Deveza (2023). Building AfCIOT and TiVA Indicators in Africa in Support of AfCFTA. 29th Input-Output Conference, Alghero, Italy, 2023. 4853_PaperonAfCIOT_2023-05-15.pdf (iioa.org)

Appendix 2: Econometric estimation appendices

Table A1 The Gregory- Hansen Cointegration Test

Gregory-Hansen Models	ADF		Zt		Za	
	Statistic	Break point	Statistic	Break point	Statistic	Break point
Intercept shift	-5.61[a]	2009	-6.10[a]	2009	-31.75	2009
Intercept shift with trend	-6.54[a]	1999	-6.64[a]	1999	-36.22	1999
Intercept shift with regime trend	-5.85	1998	-6.09[a]	1999	-35.98	1999

Note: a denotes significance at 5% level. Stata *ghansen* command is used with optimal lag structure chosen by Bayesian Information Criterion (BIC). Source: Author's calculations

Structural break is evident in the year 1999 which implies that ignoring it will result in wrong inferences.

Table A2: Unit root test results

	Augmented Dickey-Fuller (ADF) test				
	Levels		First difference		Order of integration
Variable	Test statistic	Critical value	Test statistic	Critical value	
servgdp	-1.595	-2.980	-4.098 ***	-2.983	I (1)
lgdpcap	-0.775	-1.703	-2.678 ***	-1.706	I (1)
labprodgrowth	-2.383	-2.980	-6.962 ***	-2.983	I (1)
gfcf	-2.571	-3.572	-4.412 ***	-3.576	I (1)
trade	-2.161**	-1.703			I (0)
FDI	-2.172	-3.572	-3.924 ***	-3.576	I (1)

Source: Author's calculations

Unit root test results of the Augmented Dickey-Fuller test show that trade, urban population, and services trade exhibited stationarity at their levels. However, other variables exhibited non-stationarity in their levels but demonstrate stationarity when differenced. Thus, variables were integrated of different orders, some I (0) others I (1).

Table A3: Optimal lag length selection

Lag	LL	LR	Df	P	FPE	AIC	HQIC	SBIC
0	17.622				2.8E-13	-0.508	-0.359	-0.041
1	373.239	711.23	100	0	1.6E-20	-17.549	-15.906	-12.411
2	.	.	100	0	-2.4e-38*	.	.	.
3	8290.96	.	100	0	.	-532.73	-528.248	-518.72
4	8937.82	1293.7*	100	0	.	-575.85*	-571.37*	-561.84*

The optimal number of lags selected was 2 based on Final Prediction Error (FPE) criteria. While other criteria such as Akaike Information Criteria (AIC), Hannan-Quin Information Criteria (HQIC) and Schwarz Bayesian Information Criteria (SBIC) specified the optimal lag length of 4, FPE is said to be the best criteria for small sample size studies (Asghar & Abid, 2007).

Table A4: Pesaran/Shin/Smith (2001) ARDL Bounds Test Results

F test statistic = 3.773

Order of integration	Level of significance			
	10%	5%	2.5%	1%
I (0)	1.88	2.14	2.37	2.65
I (1)	2.99	3.30	3.60	3.97

Source: Authors' calculations

The ARDL bound cointegration test (Pesaran, Shin, and Smith) was used to determine whether a long-run (cointegrated) relationship exists between the study variables. The method is well suited in cases of small sample sizes and mixed orders of integration, I (0) and I (1). The null hypothesis of "no long run relationship" was tested against the alternative "there is long run relationship". Table XX shows that the calculated F-statistic (3.773) is greater than the critical values for the upper bound, I (1) at 10%, 5% and 2.5% levels of significance, implying a rejection of the null hypothesis of no-cointegration. Therefore, a long run relationship exists between study variables, necessitating the estimation of both the short run model (ARDL) and long run model (ARDL- ECM) which includes the error correction term2

Appendix 3A: 2015 Aggregated Input Output Table for Tanzania mainland

Table 1: Input-output table, 2015 (at basic prices)

(Industry by Industry)

(Million Tsh)

			INPUT OF INDUSTRIES (ISIC REV.4)																							FINAL USES									
		INDUSTRIES (ISIC Rev.4)	Agriculture	Mining and quarrying	Manufacturing	Electricity supply	Water supply; sewerage, waste management	Construction	Wholesale and retail trade; repairs	Transport and storage	Accommodation and Food Services	Information and communication	Financial and insurance activities	Real estate	Professional, scientific and technical activities	Administrative and support service activities	Public administration and defence	Education	Human health and social work activities	Arts, entertainment and recreation	Other service activities	Total intermediate consumption	Final consumption expenditure by households	Final consumption expenditure by non-profit organisations serving households (NPISH)	Final consumption expenditure by government	Final consumption expenditure	Gross Fixed Capital Formation	Changes in valuables	Changes in inventories	Exports	Final uses at basic prices	Total use at basic prices
No	Code	INDUSTRIES (ISIC Rev.4)	A01-03	B05-B09	C10-C33	D35	E36-E39	F41-F43	G45-G46	H49-53	I55-56	J58-J62	K64-K66	L68	M69-M75	N77-N82	O84	P85	Q86-Q88	R90-R93	S94-T97		Hhcons	NPIHS	Govcons		GFCF	Chval	Chinv	Exp		
			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19											
01	A01-03	Agriculture	2 291 071	62 026	5 111 855		6 341	508 467	14 728	3 345	837 631	4 181	1 379	18 091	2 992	10 085	19 629	53 282	23 661	153	7 628	8 976 547	20,432,310.65	-	-	20 432 311	340 336		- 15 275	2 116 841	22 874 213	31 850 760
02	B05-B09	Mining and quarrying		164 138	1 191 866	258 764	79	744 942		368	229											2 360 406	230			230	25 989	864 791	- 8 920	2 487 048	3 369 097	5 729 503
03	C10-C33	Manufacturing	1 533 776	507 861	4 891 542	61 546	60 778	5 398 957	770 634	1 741 357	611 772	212 760	63 116	66 448	43 672	186 295	248 821	301 186	513 198	3 691	60 196	17 277 587	13 130 968		12 455	13 143 423	4 593 947	38 292	- 92 159	3 122 645	20 806 148	38 083 735
04	D35	Electricity supply	23 402	37 134	209 253	7 307	21 754	105 633	194 492	54 053	32 918	39 508	13 569	16 581	10 175	43 611	34 522	39 221	19 561	6 330	14 672	923 525	565 005			565 005				13	565 018	1 488 543
05	E36-E39	Water supply; sewerage, waste management	10 293	4 305	23 694	219	6 331	13 364	21 998	8 165	12 084	902	815	2 390	516	2 806	4 754	3 085	2 844	1 353	1 844	121 742	433 231			433 231			- 4 207	24 998	454 023	575 765
06	F41-F43	Construction	246 141	29 383	53 886		4 907	2 058 702	213 875	113 471	10 760	27 604	10 548	165 157	4 416	19 388	71 124	11 435	8 782		27 409	3 176 988					22 807 596		- 1 035	4 745	22 811 288	25 988 276
07	G45-G46	Wholesale and retail trade; repairs	363 135	146 453	1 171 209	60 079	23 348	1 232 481	298 002	1 082 434	163 371	353 963	10 302	30 491	16 968	239 405	138 339	68 882	101 411	936	12 002	5 493 194	7 360 680		1 498	7 362 178	667 582		44 692	729 471	8 803 923	14 297 117
08	H49-53	Transport and storage	478 042	145 740	842 175	122 750	12 401	2 402 088	1 133 992	1 272 079	71 848	47 444	44 015	15 325	25 676	100 951	127 840	70 407	46 768	9 532	30 264	6 999 376	5 056 048		379	5 056 427	271 635		11 268	2 772 707	8 112 027	15 111 404
09	I55-56	Accommodation and Food Services	21 215	30 503	11 819	31 962	4 344	107 091	422 200	315 873	2 357	43 291	30 230	12 151	46 918	108 622	120 343	76 391	32 603	6 104	18 978	1 442 995	1 871 918			1 871 918	226			319	1 872 463	3 315 458
10	J58-J62	Information and communication	73 073	105 676	97 609	9 213	10 917	211 531	269 975	65 138	15 396	381 130	79 610	13 224	31 470	70 686	112 441	53 985	36 016	11 074	10 911	1 658 255	1 340 917			1 340 917				127 295	1 468 213	3 126 469
11	K64-K66	Financial and insurance activities	301 735	161 983	276 642	49 560	10 804	1 494 235	556 008	369 792	44 757	54 783	807 028	65 338	31 717	85 370	99 107	65 340	34 334	2 478	19 859	4 530 869	720 578		154 326	874 903	117			115 561	990 582	5 521 451
12	L68	Real estate	12 329	32 272	56 307	14 685	2 912	173 253	579 298	95 094	22 501	33 514	96 954	60 321	30 257	127 830	26 484	21 378	34 874	1 792	106 092	1 528 157	1 901 505			1 901 505	9 436				1 910 941	3 439 098
13	M69-M75	Professional, scientific and technical activities	14 003	2 970	10 075	3 144	393	20 385	348 439	7 097	874	17 531	23 847	4 408	30 118	31 851	53 783	1 720	4 175	511	1 080	576 403	44 593		2 183	46 776	238 895			178	285 808	862 211
14	N77-N82	Administrative and support service activities	39 184	46 681	482 467	43 610	10 831	534 573	384 330	142 100	6 112	22 545	31 015	7 580	46 094	395 180	143 144	25 367	13 268	3 534	4 722	2 392 347	558 422		1 763	560 185	597 952			653 670	1 811 808	4 204 153
15	O84	Public administration and defence	2 457	1 859	19 086	5 335	358	38 832	122 737	8 887	2 235	7 509	4 306	2 952	4 203	11 374	53 639	2 919	4 232	2 508	1 065	296 452	104 795		5 475 963	5 580 759				83 281	5 664 040	5 960 492
16	P85	Education	4 010	4 576	5 656	4 370	736	25 879	33 554	44 902	696	6 653	3 109	973	7 505	17 169	20 590	12 952	6 032	837	1 868	202 079	848 055	55 559	2 131 933	3 035 547	3 733			6 036	3 045 336	3 247 415
17	Q86-Q88	Human health and social work activities	25	69	120	31	6	368	1 230	202	48	71	206	128	64	271	56	45	74	4	225	3 245	685 624	90 298	1 540 020	2 315 942	20				2 315 963	2 319 207
18	R90-R93	Arts, entertainment and recreation																		34 562		34 562	239 304	2 129	45 710	287 143	3 633			14 658	305 434	339 996
19	S94-T97	Other service activities	3 278	2 409	9 177	4 768	2 101	20 900	58 363	73 480	34 395	14 845	5 162	4 521	5 322	67 616	28 888	11 794	10 389	286	201 507	559 196	803 688	58 161		861 849				1	861 850	1 421 050
68		Total	5 417 171	1 486 039	14 464 435	677 353	179 390	15 091 711	5 433 774	5 397 818	1 869 934	1 268 345	1 225 260	486 080	338 085	1 618 509	1 283 505	818 990	892 222	85 685	519 932	58 553 929	56 097 834	206 146	9 366 230	65 670 210	29 961 057	903 043	- 65 636	12 259 489	108 328 153	166 882 083
69		Taxes less subsidies on products	114 325	136 031	378 240	7 953	2 108	419 857	115 480	617 799	23 437	12 935	4 236	3 420	3 849	29 903	19 674	11 694	7 895	519	5 525	1 915 081	5 377 655	2	103	5 377 760	502 039			73 295	5 953 113	7 868 195
70		Total	5 531 497	1 622 070	14 842 676	685 116	181 498	15 511 569	5 549 254	6 015 617	1 893 361	1 281 179	1 229 496	489 500	341 933	1 648 412	1 303 379	830 684	900 118	86 205	525 457	60 469 011	61 475 489	206 149	9 366 333	71 047 971	30 063 125	903 043	- 65 636	12 332 764	114 281 267	174 750 278
71		C.I.f./f.o.b. adjustments on imports																														
72		Direct purchases abroad by residents																					2 387 890			2 387 890					2 387 890	2 387 890
73		Direct purchases in domestic markets by non-residents																					-3 805 603			-3 805 603				3 805 603		
74		Total intermediate consumption/final consumption at basi	5 531 497	1 622 070	14 842 676	685 116	181 498	15 511 569	5 549 254	6 015 617	1 893 361	1 281 179	1 229 496	489 500	341 933	1 648 412	1 303 379	830 684	900 118	86 205	525 457	60 469 011	60 057 776	206 149	9 366 333	69 630 258	30 063 125	903 043	- 65 636	16 138 367	136 669 157	177 138 167
75		Compensation of employees	1 738 941	603 066	1 571 903	365 718	65 867	1 380 656	2 356 557	1 396 982	606 608	364 438	1 135 332	50 508	175 599	383 081	2 785 054	2 015 571	970 410	57 998	453 834	18 459 122										
76		Other taxes on production	3 108	10 043	70 861	4 112	1 188	2 499	2 831	37 659	2 805	2 851	11 863	2 863	1 650	6 202	18 734	7 888	4 434	607	3 080	195 278										
77		Other subsidies on production																														
78		Consumption of fixed capital															1261885.69					1 261 886										
79		Operating surplus, net	23 492 512	3 442 511	5 768 908	428 971	323 703	9 063 642	6 388 475	5 496 253	812 503	1 313 819	3 060 827	2 896 226	340 874	1 794 634	482 931	389 846	444 246	189 904	438 675	66 568 450										
80		**Value added at basic prices**	**25 234 560**	**4 055 619**	**7 411 672**	**798 801**	**390 758**	**10 446 797**	**8 747 863**	**6 929 894**	**1 421 916**	**1 681 098**	**4 189 021**	**2 949 598**	**518 123**	**2 183 917**	**4 548 604**	**2 413 306**	**1 419 030**	**248 510**	**895 589**	86 484 736										
81		Output at basic prices	30 766 057	5 677 690	22 254 348	1 483 917	572 256	25 958 365	14 297 117	12 945 511	3 315 278	2 962 277	5 418 507	3 439 098	860 056	3 832 329	5 851 983	3 243 990	2 319 207	334 715	1 421 046	146 953 747										
82		Imports cif	1 084 703	51 813	15 829 388	4 626	3 939	29 890		2 165 893	181	164 191	102 943		2 155	371 824	108 509	3 425		5 281	4	19 928 336										
83		Total supply	**31 850 760**	**5 729 503**	**38 083 735**	**1 488 543**	**575 765**	**25 988 256**	**14 297 117**	**15 111 404**	**3 315 458**	**3 126 469**	**5 521 451**	**3 439 098**	**862 211**	**4 204 153**	**5 960 492**	**3 247 415**	**2 319 207**	**339 996**	**1 421 050**	166 882 083										

Source: Authors modification based on 2015 Input Output Table for Tanzania mainland (19 industries by 19industries)

Appendix 3B: 2019 Aggregated Input Output Table for Tanzania mainland

Table 9: Input-output table, 2019 (at basic prices)

(Industry by Industry)

		INDUSTRIES (ISIC Rev.4)	INPUT OF INDUSTRIES (ISIC REV.4)																				Total intermediate consumption	FINAL USES								Total use at basic prices
	Code	PRODUCTS (CPA Rev.2)	Agriculture forestry and fishing	Mining and quarrying	Manufacturing	Electricity gas steam and air conditioning supply	Water supply; sewerage waste management and	Construction	Wholesale and retail trade; repair of motor vehicles and	Transportation and storage	Accommodation and food service activities	Information and communication	Financial and insurance activities	Real estate activities	Professional scientific and technical activities	Administrative and support service activities	Public administration and defence; compulsory	Education	Human health and social work activities	Arts entertainment and recreation	Other service activities	Domestic services		Final consumption expenditure by households	Final consumption expenditure by non-profit organisations serving households (NPISH)	Final consumption expenditure by government	Final consumption expenditure	Gross Fixed Capital Formation	Changes in valuables	Changes in inventories	Exports	Final uses at basic prices	
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		Hhcons	NPIHS	Govcons		GFCF	Chval	Chinv	Exp		
No			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
01	A	Products of agriculture, forestry and fishing	4 544 510	119 062	6 951 854		12 711	837 695	20 133	7 308	1 907 837	13 120	2 658	13 985	5 044	19 035	68 278	64 259	64 497	827	22 234		14 675 047	26 184 181			26 184 181	275 298		26 213	2 612 911	29 098 603	43 773 650
02	B	Mining and quarrying		114 682	4 245 142	263 243	65	1 175 431		162	56												5 798 781	357			357		3 844 198	- 49 122	281 395	4 076 829	9 875 610
03	C	Manufactured products	2 017 501	841 335	6 527 473	132 435	111 027	7 802 158	1 150 870	2 829 434	1 675 638	368 989	131 588	122 213	72 216	325 554	958 516	436 405	974 252	14 339	272 932		26 764 876	16 622 376		1 142	16 623 517	3 778 693	86 528	153 943	7 154 442	27 797 123	54 561 999
04	D	Electricity, gas, steam and air conditioning	24 788	83 948	472 768	40 833	75 709	143 363	197 927	35 950	78 644	21 768	12 242	12 209	6 364	35 494	70 275	39 494	12 128	10 014	25 856		1 399 774	472 394			472 394				152 009	624 402	2 024 176
05	E	Water supply; sewerage, waste management and	18 223	18 761	164 495	1 662	51 190	86 704	101 567	31 781	25 094	3 756	3 312	17 597	1 526	18 645	27 730	16 421	8 402	10 507	16 574		623 946	382 633			382 633			9 269	27 051	418 954	1 042 899
06	F	Constructions and construction works	89 167	6 649	109 562	6 494	1 837	718 527	82 313	42 798	8 943	10 076	4 014	60 485	1 539	40 556	37 057	4 756	3 460		10 927		1 239 162	9			9	41 986 432	94 837	- 1 212	6 942	42 087 008	43 326 170
07	G	Wholesale and retail trade services; repair service	755 261	266 826	2 504 300	156 718	29 213	2 998 826	458 693	1 127 848	515 926	114 481	26 265	26 713	17 981	101 404	220 275	111 286	197 330	3 126	59 033		9 691 506	9 391 422		182	9 391 603	732 273	3 447	59 856	2 019 316	12 206 495	21 898 001
08	H	Transportation and storage services	388 427	237 721	1 127 826	409 064	20 508	5 577 871	1 374 692	1 885 020	95 409	63 768	65 267	30 058	23 958	360 422	349 550	140 246	59 786	23 526	103 248		12 336 387	5 928 346		35	5 928 382	131 102	575	11 972	3 536 868	9 608 898	21 945 285
09	I	Accommodation and food services	27 771	51 027	20 163	83 448	8 239	170 663	698 635	607 774	5 252	70 850	40 943	18 474	93 282	205 614	148 215	104 710	36 541	11 924	16 913		2 420 438	6 245 264			6 245 264	3			187	6 245 454	8 665 892
10	J	Information and communication services	75 282	164 964	184 066	20 952	18 889	642 805	527 299	147 395	19 255	771 138	139 198	40 426	38 011	194 566	266 510	113 100	51 290	13 320	42 554		3 471 020	466 643			466 643			- 1 156	67 759	533 246	4 004 266
11	K	Financial and insurance services	195 639	174 153	382 112	89 674	14 262	2 272 090	603 243	500 881	21 467	58 973	772 483	123 763	22 680	133 812	154 175	90 225	27 936	4 929	48 908		5 691 405	865 986		6 257	872 244	9			141 721	1 013 973	6 705 378
12	L	Real estate services	6 564	27 335	130 366	32 279	4 674	379 153	810 282	150 886	14 699	33 756	117 842		25 460	137 061	45 601	30 269	36 793	3 815	31 209		2 018 044	2 476 141			2 476 141	754				2 476 895	4 494 939
13	M	Professional, scientific and technical services	21 132	4 332	14 939	8 261	653	47 615	590 825	13 588	621	24 943	35 546	11 533	30 296	33 278	110 710	3 091	4 066	1 300	4 511		961 241	23 806		79	23 884	14 785			33	38 702	999 943
14	N	Administrative and support services	47 247	37 560	538 184	120 669	13 855	927 983	297 678	914 077	31 825	41 458	57 030	13 315	47 706	41 167	578 869	223 531	29 397	33 883	57 709		4 053 142	586 653		16	586 669	8 337		9	493 525	1 088 541	5 141 683
15	O	Public administration and defence services; compu	2 520	1 948	20 603	6 341	403	40 285	133 553	9 325	4 174	8 302	4 681	3 071	4 137	11 046	79 471	3 673	4 705	2 457	1 505		342 199	764 557		8 554 176	9 318 733	3 317		- 797	10 540	9 331 793	9 673 992
16	P	Education services	1 579	2 696	8 786	4 194	549	22 273	18 632	26 460	360	3 281	1 350	553	4 535	8 133	8 145	32 512	2 029	493	509		147 069	1 922 459	82 075	2 922 776	4 927 309	84			7 909	4 935 302	5 082 371
17	Q	Human health and social work services	18	77	366	91	13	1 065	2 276	424	41	95	331		71	385	128	85	103	11	88		5 667	2 293 919	125 941	1 569 397	3 989 257	2				3 989 259	3 994 927
18	R	Arts, entertainment and recreation services																		23 441			23 441	592 906	2 795	43 680	639 380	4 220			4 865	648 465	671 906
19	S	Other services	35 007	8 473	49 895	67 936	7 243	68 510	147 499	210 721	109 247	38 551	16 362	26 715	9 735	123 096	86 654	30 407	13 485	2 769	79 808		1 132 114	1 418 815	20 018		1 438 833				5 486	1 444 319	2 576 433
20	T	Services of households as employers																						315 780			315 780					315 780	315 780
21		Total	8 250 639	2 161 550	23 452 897	1 444 313	371 040	23 913 018	7 216 118	8 541 831	4 514 486	1 647 306	1 431 112	521 110	404 539	1 789 269	3 210 161	1 444 470	1 526 202	160 680	794 517		92 795 258	76 954 647	230 828	13 097 740	90 283 215	46 935 309	4 029 586	208 974	16 522 957	157 980 041	250 775 299
22		Taxes less subsidies on products	289 593	293 266	508 670	38 087	10 432	664 775	249 182	1 238 865	65 869	43 121	24 922	11 654	8 291	101 863	79 604	31 892	58 739	6 298	30 893		3 756 016	6 631 591	2 689	132 135	6 766 416	278 942	10 404			7 055 762	10 811 778
23		Total	8 540 231	2 454 816	23 961 567	1 482 400	381 472	24 577 792	7 465 300	9 780 696	4 580 355	1 690 427	1 456 035	532 764	412 830	1 891 132	3 289 765	1 476 362	1 584 941	166 978	825 410		96 551 274	83 586 238	233 518	13 229 875	97 049 631	47 214 251	4 039 989	208 974	16 522 957	165 035 803	261 587 077
24		C.i.f./f.o.b. adjustments on imports																													- 1 447 816		
25		Direct purchases abroad by residents																						1 392 414			1 392 414					1 392 414	1 392 414
26		Direct purchases in domestic markets by non-resic																						- 5 959 406			- 5 959 406				5 959 406		
27		Total intermediate consumption/final consumption	8 540 231	2 454 816	23 961 567	1 482 400	381 472	24 577 792	7 465 300	9 780 696	4 580 355	1 690 427	1 456 035	532 764	412 830	1 891 132	3 289 765	1 476 362	1 584 941	166 978	825 410		96 551 274	79 019 246	233 518	13 229 875	92 482 638	47 214 251	4 039 989	208 974	21 034 548	166 428 217	262 979 491
28		Compensation of employees	9 324 941	179 155	3 762 120	281 583	189 940	4 257 062	2 134 183	2 788 527	534 091	246 089	1 628 398	457 152	140 291	318 754	4 383 343	2 527 291	1 340 466	82 430	545 719	315 780	35 437 314										
29		Other taxes on production	8 954	28 936	205 166	11 848	3 423	7 199	8 155	108 503	8 082	8 214	34 179	8 250	4 753	17 868	53 976	22 728	22 776	1 750	8 874		573 636										
30		Other subsidies on production				- 1 020 350				- 49 884		- 16 081	- 16 277						- 42 204				- 1 144 796										
31		Consumption of fixed capital	1 283 064	1 297 886	884 340	11 386	37 432	1 743 220	354 479	1 436 280	54 215	258 863	551 517	21 172	67 079	94 625	1 749 569	39 856	227 315	2 139	70 029		10 184 466										
32		Operating surplus, net	23 486 788	5 866 994	6 143 314	1 257 265	414 757	12 663 170	11 935 883	6 404 667	3 488 990	1 669 379	2 877 366	3 475 601	364 052	2 397 483		1 009 400	861 632	411 717	1 126 398		85 854 857										
33		Value added at basic prices	34 103 747	7 372 971	10 994 939	541 731	645 552	18 670 652	14 432 701	10 688 093	4 085 378	2 166 463	5 075 182	3 962 175	576 175	2 828 731	6 186 868	3 599 275	2 409 985	498 036	1 751 021	315 780	130 905 476										
34		Output at basic prices	42 643 978	9 827 788	34 956 506	2 024 131	1 027 024	43 248 444	21 898 001	20 468 789	8 665 733	3 856 891	6 531 217	4 494 939	989 005	4 719 862	9 476 653	5 075 637	3 994 927	665 014	2 576 431	315 780	227 456 751										
35		Imports cif	1 129 672	47 822	19 605 493	44	15 875	77 726		1 476 496	159	147 375	174 161		10 938	421 820	197 339	6 734		6 892	2		23 318 548										
36		Total supply	43 773 650	9 875 610	54 561 999	2 024 176	1 042 899	43 326 170	21 898 001	21 945 285	8 665 892	4 004 266	6 705 378	4 494 939	999 943	5 141 683	9 673 992	5 082 371	3 994 927	671 906	2 576 433	315 780	250 775 299										

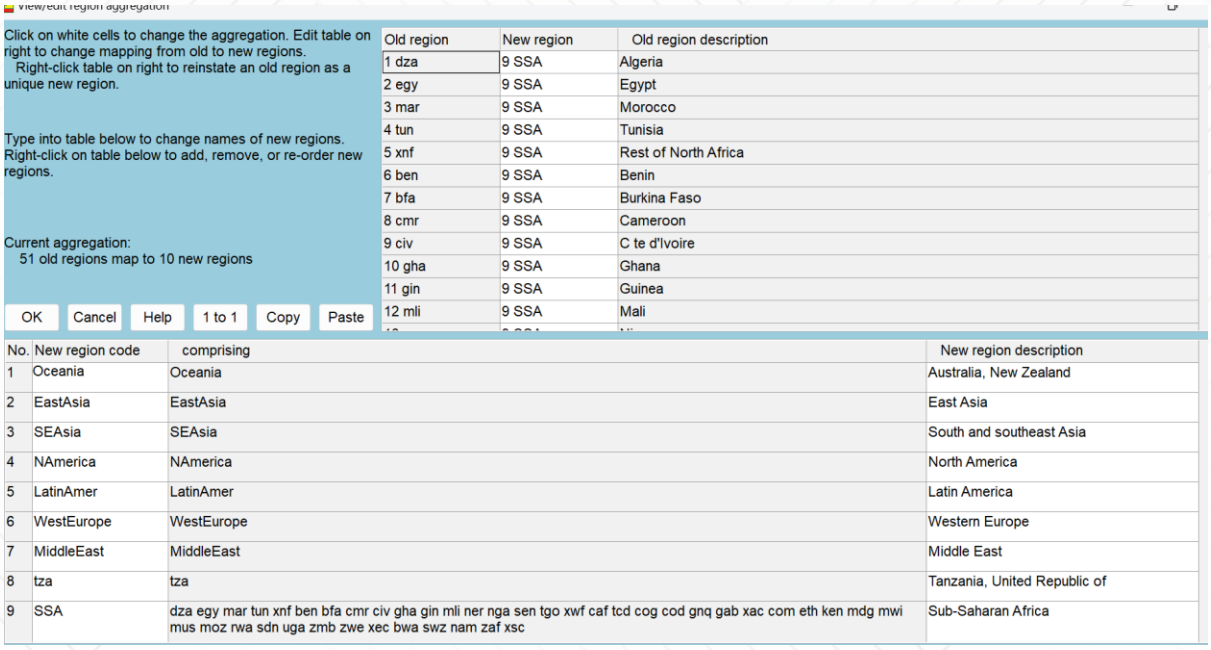
Source: Authors modification based on 2019 Input Output Table for Tanzania mainland (19 industries by 19industries)

Appendix 4: African countries and Regions in the GTAP 3 database

African Countries and Regions				Non-African Regions
Algeria Egypt Morocco Tunisia	Benin Burkina Faso Cameroon Cote d'Ivoire Ghana Guinea Mali Niger Nigeria Senegal Togo	Comoros Ethiopia Madagascar Malawi Mauritius Mozambique Rwanda Sudan Tanzania Uganda Zambia Zimbabwe	Botswana Estwani Namibia South Africa	Oceania East Asia South and Southeast Asia North America Latin America Western Europe Middle East Rest of the World
Rest of North Africa	Rest of Western Africa	Rest of Eastern Africa	Rest of the South African Customs Union	

Source: GTAP Africa 3 Data Base

Interface of the GTAP 3 Africa database



Click on white cells to change the aggregation. Edit table on right to change mapping from old to new regions.
Right-click table on right to reinstate an old region as a unique new region.

Type into table below to change names of new regions. Right-click on table below to add, remove, or re-order new regions.

Current aggregation:
51 old regions map to 10 new regions

OK | Cancel | Help | 1 to 1 | Copy | Paste

Old region	New region	Old region description
1 dza	9 SSA	Algeria
2 egy	9 SSA	Egypt
3 mar	9 SSA	Morocco
4 tun	9 SSA	Tunisia
5 xnf	9 SSA	Rest of North Africa
6 ben	9 SSA	Benin
7 bfa	9 SSA	Burkina Faso
8 cmr	9 SSA	Cameroon
9 civ	9 SSA	C te d'Ivoire
10 gha	9 SSA	Ghana
11 gin	9 SSA	Guinea
12 mli	9 SSA	Mali

No.	New region code	comprising	New region description
1	Oceania	Oceania	Australia, New Zealand
2	EastAsia	EastAsia	East Asia
3	SEAsia	SEAsia	South and southeast Asia
4	NAmerica	NAmerica	North America
5	LatinAmer	LatinAmer	Latin America
6	WestEurope	WestEurope	Western Europe
7	MiddleEast	MiddleEast	Middle East
8	tza	tza	Tanzania, United Republic of
9	SSA	dza egy mar tun xnf ben bfa cmr civ gha gin mli ner nga sen tgo xwf caf tcd cog cod gnq gab xac com eth ken mdg mwi mus moz rwa sdn uga zmb zwe xec bwa swz nam zaf xsc	Sub-Saharan Africa

Appendix 5: Sab-Saharan Africa – Input Output Table (Extracted from GTAP 3 Africa)

SSA-IOT Basic prices

	d_GRAINS	d_MEATL	d_MIN	d_PROCFOOD	d_TEXTWAPP	d_LIGHTMNF	d_HEAVYMANF	d_UTLCON	d_OTP	d_AFS	d_TRD	d_WTP	d_ATP	d_WHS	d_CMN	d_OFI	d_INS	d_RSA	d_OBS	d_ROS	d_OSG	d_EDU	d_HHT	d_DWE	Intermediate de	243 PRIV	244 GOVT	245 SAVINV	Total Final Demand	Exports	Total
d_GRAINS	39,881	7,465	786	41,722	2,025	1,068	1,069	484	367	3,986	787	47	46	694	561	68	33	94	514	1,071	1,314	137	1,305	111	105,635	174,795	348	1,379	176,522	33,673	315,830
d_MEATL	1,417	28,214	1,090	13,471	1,038	1,144	397	164	236	3,377	837	211	64	166	382	21	61	254	1,143	522	1,069	391	1,880	35	57,586	147,476	237	4,807	152,520	3,307	213,413
d_MIN	547	1,050	6,068	4,953	75	7,365	91,867	32,283	568	527	208	68	26	86	185	46	17	34	2,434	215	153	32	257	70	149,134	52,037	66	3,292	55,396	199,052	403,581
d_PROCFOOD	2,231	10,988	831	48,429	816	1,110	1,997	317	397	11,340	1,260	363	129	984	703	382	224	168	1,496	2,917	2,706	2,120	10,288	45	102,241	200,996	413	4,781	206,190	27,033	335,464
d_TEXTWAPP	1,164	469	1,166	1,359	25,111	1,826	1,256	1,309	138	295	979	86	55	172	249	80	46	28	426	725	3,330	768	5,202	10	46,249	73,319	123	693	74,135	16,095	136,478
d_LIGHTMNF	2,764	1,319	6,389	6,295	3,321	38,245	13,539	27,416	4,694	1,505	7,578	977	2,367	1,484	4,051	1,554	762	270	6,718	1,596	7,718	2,542	6,294	721	150,119	75,980	552	63,556	140,088	41,178	331,385
d_HEAVYMANF	13,482	2,909	21,018	7,720	4,504	29,554	78,194	82,645	33,616	1,017	3,998	8,054	9,044	1,907	6,804	786	211	230	6,452	1,628	3,743	4,335	13,207	954	336,012	120,411	652	83,486	204,549	149,553	690,114
d_UTLCON	2,081	1,980	11,390	2,978	1,351	5,547	26,604	34,937	2,347	4,755	6,537	254	178	1,104	2,036	1,710	792	3,660	3,155	4,331	7,928	5,659	6,096	3,553	140,962	49,014	2,341	270,113	321,468	6,209	468,639
d_OTP	3,716	2,309	10,264	3,609	769	3,964	6,863	5,791	942	892	10,298	67	185	1,745	1,195	889	492	343	1,307	841	2,829	1,311	1,876	222	62,719	49,274	774	3,023	53,071	11,383	127,173
d_AFS	612	657	1,993	664	363	840	1,880	924	195	1,184	3,418	44	805	689	780	931	410	321	1,912	1,123	2,373	901	2,445	51	25,513	63,974	331	11	64,316	32,276	122,105
d_TRD	13,042	21,987	12,639	23,707	8,532	28,178	41,692	12,925	2,970	9,283	10,434	444	366	698	2,713	739	455	521	17,967	1,547	2,273	2,154	8,697	391	224,355	88,097	71	30,256	118,424	3,472	346,250
d_WTP	323	117	723	277	84	351	904	517	113	186	698	1,444	26	106	30	17	6	12	174	71	178	27	58	5	6,445	2,394	66	639	3,099	14,147	23,691
d_ATP	206	183	1,600	548	275	876	1,340	696	154	108	2,856	20	83	169	596	327	131	53	935	720	933	577	350	10	13,745	14,412	45	878	15,335	11,967	41,047
d_WHS	445	721	2,993	1,273	473	1,454	2,801	1,384	1,686	489	4,680	375	1,283	1,794	1,073	76	15	771	3,682	186	1,189	380	634	7	29,864	8,078	61	415	8,554	3,474	41,891
d_CMN	458	439	2,246	710	631	1,131	11,339	1,709	618	744	7,192	167	287	777	11,321	2,228	896	604	4,743	1,753	2,910	1,632	1,514	230	56,278	62,448	1,026	7,327	70,801	7,433	134,513
d_OFI	1,924	693	2,564	1,311	1,251	1,778	3,504	4,359	1,469	716	7,165	230	417	1,076	1,319	7,408	6,473	1,963	1,580	1,213	2,141	813	1,520	1,966	54,853	42,272	1,255	978	44,505	3,069	102,427
d_INS	213	148	882	356	238	393	731	792	778	131	820	42	78	292	169	3,384	2,751	594	302	77	71	83	354	728	14,406	31,662	6	9	31,678	1,377	47,460
d_RSA	274	156	658	363	629	670	754	774	441	1,033	5,658	474	377	1,350	1,095	1,606	463	816	3,388	1,915	580	605	1,786	1,142	27,005	23,440	4,092	1,472	29,004	1,234	57,243
d_OBS	3,079	1,983	17,221	4,335	2,255	4,737	11,083	14,058	3,817	2,448	14,516	357	1,389	3,010	7,049	6,552	2,748	3,799	17,764	5,388	5,813	3,334	6,589	292	143,615	13,543	2,725	13,016	29,284	12,401	185,301
d_ROS	127	76	1,572	195	55	303	539	504	340	781	1,494	111	648	203	867	271	52	752	3,695	3,318	341	595	706	34	17,579	40,142	41,079	152	81,373	1,113	100,065
d_OSG	40	50	343	167	539	251	178	908	87	2,213	340	39	417	70	367	206	58	293	2,229	465	323	256	307	19	10,162	13,966	123,427	813	138,206	6,087	154,456
d_EDU	24	75	1,853	641	1,606	527	2,073	344	138	55	584	44	20	21	1,110	60	13	120	896	1,302	110	1,013	437	6	13,070	35,277	53,320	621	89,218	1,944	104,233
d_HHT	166	1,245	1,849	2,287	2,017	4,423	1,579	6,060	3,556	4,869	4,230	567	2,460	104	76	78	16	272	2,256	3,311	1,288	862	3,947	8	47,527	42,877	80,753	656	124,286	1,110	172,923
d_DWE	22	29	225	93	68	180	113	86	454	50	129	56	59	137	141	65	25	49	144	62	90	69	70	193	2,608	67,611	272	1,647	69,530	-	72,138
73 Land	58,826	16,088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
74 UnSkLab	59,414	48,552	34,506	28,895	10,333	20,143	25,078	61,340	14,094	23,334	96,375	1,233	1,891	3,232	10,952	9,486	3,756	2,609	14,029	14,227	27,309	10,906	21,134	1,025							
75 SkLab	3,973	7,305	8,111	10,029	5,834	8,937	12,835	27,578	17,413	8,884	31,965	1,661	2,467	4,098	14,644	28,921	14,077	8,320	28,585	30,562	30,975	38,056	33,240	3,858							
76 Capital	64,394	42,393	136,192	66,882	19,358	38,154	63,160	126,550	32,508	14,572	102,147	3,901	5,418	12,450	50,112	23,353	7,818	26,240	31,523	14,917	34,783	15,920	33,663	52,910							
77 NatRes	-	-	67,924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
Taxes on factors	2,569	1,755	2,101	1,620	1,011	1,682	2,202	3,065	1,409	1,205	4,195	168	251	356	1,307	1,202	534	536	1,679	1,383	2,506	2,305	2,829	641							
Taxes on production (tprd_c)	823	1,184	13,329	(103)	18	183	1,110	4,918	1,076	868	2,206	282	113	379	1,581	1,020	521	711	865	611	519	339	418	2,284							
Taxes on exports (tee)	(5)	(0)	2,314	(3)	206	414	1,818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
Taxes on products total	2,743	2,509	3,804	3,377	571	2,099	(1,492)	1,509	(3,026)	1,604	1,433	(600)	(576)	571	1,543	561	596	128	1,734	793	1,404	621	3,220	621							
ROW	34,855	8,367	26,938	57,312	41,127	123,855	283,111	12,295	3,573	19,656	11,235	2,505	10,677	1,964	9,499	8,398	3,007	2,682	21,572	1,276	5,555	5,487	2,598	-							
Total Output	315,829	213,414	403,582	335,470	136,483	331,381	690,118	468,640	127,168	122,105	346,251	23,689	41,049	41,890	134,510	102,425	47,458	57,246	185,300	100,065	154,454	104,230	172,920	72,139							
column	315,830	213,413	403,581	335,464	136,478	331,385	690,114	468,639	127,173	122,105	346,250	23,691	41,047	41,891	134,513	102,427	47,460	57,243	185,301	100,065	154,456	104,233	172,923	72,138							
row-column	(1)	1	1	6	5	(4)	4	1	(5)	(0)	1	(2)	2	(1)	(3)	(1)	(2)	3	(1)	0	(2)	(2)	(3)	1							

Source: Authors' calculation based on GTAP Africa

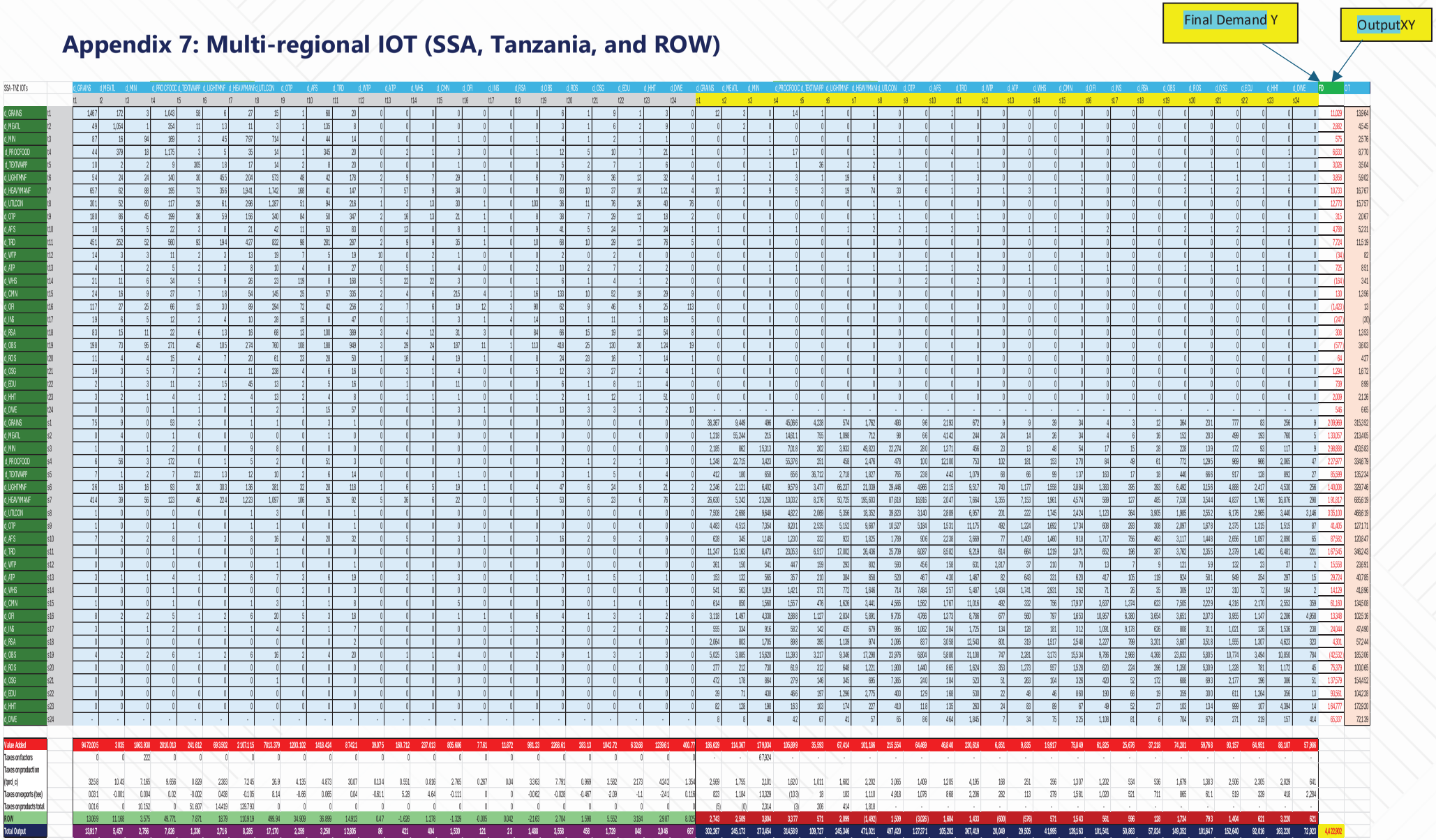
Appendix 6: Tanzania – Input Output Table (Extracted from GTAP 3 Africa)

Tanzania country IOT

	d_GRAINS	d_MEATL	d_MIN	d_PROCFOOD	d_TEXTWAPP	d_LIGHTMNF	d_HEAVYMANF	d_UTLCON	d_OTP	d_AFS	d_TRD	d_WTP	d_ATP	d_WHS	d_CMN	d_OFI	d_INS	d_RSA	d_OBS	d_ROS	d_OSG	d_EDU	d_HHT	d_DWE	Total Intermediate demand	243 PRIV	244 GOVT	245 SAVINV	Final Demand	Exports	Total
d_GRAINS	927	98	1	2,104	189	2	0	2	0	628	60	-	-	0	0	-	-	0	0	0	2	0	0	0	4,013	7,320	0.8	3	7,324	1,352.30	12,689
d_MEATL	13	493	0	30	1	0	0	0	0	124	91	0	-	0	0	-	-	0	0	0	1	0	0	0	755	3,301	1	4	3,306	25.28	4,086
d_MIN	1	9	44	7	1	191	216	550	0	30	1	-	0	0	2	0	-	3	18	0	0	0	0	21	1,094	1,113	1	0	1,114	288.17	2,496
d_PROCFOOD	6	26	0	783	0	0	1	0	0	475	11	0	0	0	0	0	0	0	0	0	2	1	11	0	1,318	6,265	0	1	6,266	574.96	8,159
d_TEXTWAPP	51	0	10	6	33	3	32	0	0	2	0	0	0	0	0	0	-	0	1	0	0	0	0	0	140	1,524	0	84	1,608	202.92	1,951
d_LIGHTMNF	17	6	8	40	6	77	103	433	21	38	170	1	13	9	20	0	0	1	20	17	54	18	33	2	1,105	1,010	2	1,376	2,388	299.78	3,793
d_HEAVYMANF	108	15	25	104	2	86	813	2,680	378	39	51	30	139	5	10	1	0	1	24	3	13	4	42	1	4,574	2,468	0	2,651	5,119	1,463.73	11,157
d_UTLCON	86	19	30	175	20	61	316	1,559	26	26	167	1	1	8	6	1	0	31	9	9	132	57	90	568	3,398	771	100	10,852	11,722	58.32	15,179
d_OTP	36	13	14	35	1	4	23	113	3	12	146	0	1	1	7	1	0	5	10	2	11	2	5	1	447	193	11	269	473	1,135.80	2,056
d_AFS	120	7	24	23	4	9	46	13	4	11	52	0	3	10	5	4	1	4	25	9	9	7	18	0	408	1,797	0	2	1,799	1,787.90	3,995
d_TRD	1,190	312	161	777	122	299	1,056	817	232	202	154	3	7	15	45	4	2	12	72	36	29	13	106	8	5,675	1,570	0	3,534	5,104	9.26	10,788
d_WTP	4	1	1	2	0	0	3	6	1	1	8	0	0	0	0	0	0	0	1	0	1	0	0	0	30	9	0	41	50	3.64	84
d_ATP	3	1	2	5	0	1	4	19	1	1	56	0	0	0	5	1	0	1	6	4	3	2	1	0	116	59	0	61	120	292.00	528
d_WHS	8	2	1	11	0	1	7	10	20	1	42	0	3	0	1	0	0	1	2	2	4	0	1	0	118	48	0	103	151	54.13	323
d_CMN	1	0	1	8	1	1	10	49	8	25	289	1	2	3	344	6	1	42	308	19	180	53	78	20	1,450	152	0	20	172	29.38	1,651
d_OFI	15	4	0	3	0	1	2	7	1	1	13	0	0	0	1	4	0	1	2	0	4	2	8	1	70	41	1	0	42	8.11	120
d_INS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	16	0	0	16	2.95	23
d_RSA	0	0	2	5	1	1	4	28	11	32	243	4	2	6	60	2	0	188	50	17	35	20	118	511	1,340	162	0	2	164	1.90	1,506
d_OBS	8	2	6	54	3	6	51	502	115	35	430	1	22	16	300	9	2	228	449	32	368	101	253	207	3,198	55	1	62	118	31.84	3,348
d_ROS	0	5	35	7	0	0	0	1	1	2	2	0	3	0	0	0	0	0	0	2	2	3	7	0	71	364	4	2	370	0.62	441
d_OSG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	1	32	1,866	0	1,899	5.38	1,906
d_EDU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1	113	801	1	915	6.36	922
d_HHT	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	1	0	1	-	2	119	1,898	0	2,017	0.89	2,020
d_DWE	0	-	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	2	0	3	1	3	6	18	1,732	0	0	1,732	-	1,750
73 Land	1,400	322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
74 UnSkLab	5,348	1,863	784	881	109	208	427	2,562	262	789	3,348	7	27	40	367	17	3	306	856	155	468	135	560	7							
75 SkLab	351	195	62	159	20	38	77	2,149	252	132	1,357	6	26	39	352	12	2	452	1,265	4	525	482	650	96							
76 Capital	2,373	655	1,018	1,770	113	448	1,603	3,102	689	497	4,036	26	107	158	86	48	7	222	146	124	47	15	27	292							
77 NatRes	-	-	222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
Taxes on factors	33	10	7	10	1	2	7	27	4	5	30	0	1	1	3	0	0	3	8	1	4	2	4	1							
Taxes on production (tprd_c)	0	(0)	0	0	(0)	0	(0)	8	(9)	0	0	(1)	5	5	(0)	-	-	(0)	(0)	(0)	(2)	(1)	(2)	0							
Taxes on exports (tee)	0	-	10	-	52	14	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
Taxes on products total	13	11	4	50	8	19	111	500	35	37	15	0	(2)	1	(1)	(0)	0	(2)	3	2	6	3	3	8							
ROW	577	16	24	1,111	1,266	2,322	6,107	38	3	848	11	3	168	4	38	8	3	7	71	2	5	3	2	-							
Total Output	12,690	4,087	2,496	8,161	1,952	3,794	11,160	15,177	2,057	3,993	10,785	84	528	323	1,651	120	23	1,506	3,348	442	1,905	923	2,020	1,751							
colum	12,689	4,086	2,496	8,159	1,951	3,793	11,157	15,179	2,056	3,995	10,788	84	528	323	1,651	120	23	1,506	3,348	441	1,906	922	2,020	1,750							

Source: Authors' calculation based on GTAP Africa

Appendix 7: Multi-regional IOT (SSA, Tanzania, and ROW)



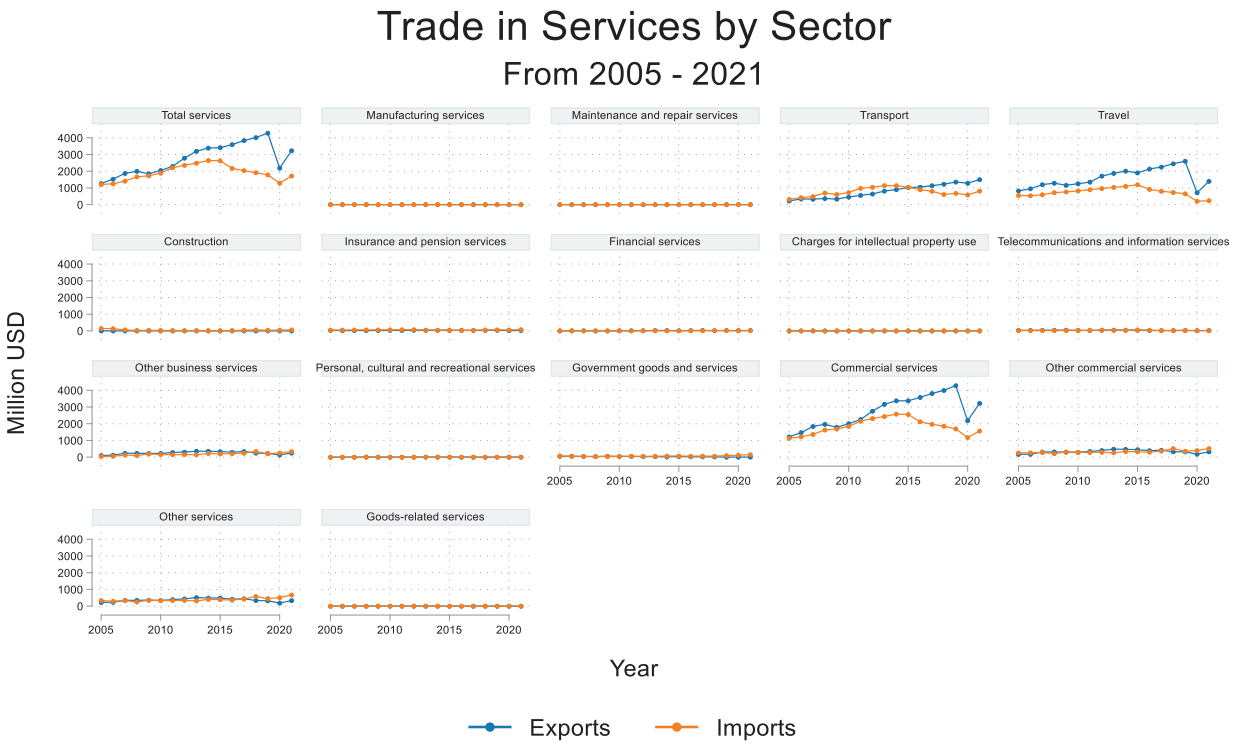
Source: Authors' calculations based on GTAP Africa

Appendix 8: Shares of Gross Domestic Product at 2015 Prices by Service sub-sectors

Sector/ Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Overall Services	**40.1**	**39.4**	**40.4**	**40.4**	**40.2**	**39.7**	**39.5**	**39.1**	**39.0**	**39.0**	**39.2**	**39.5**
Wholesale and retail trade; repairs	9.5	9.2	9.5	9.3	9.2	9.1	9.1	8.9	8.7	8.6	8.5	8.5
Transport and storage	7.3	7.3	7.4	7.3	7.3	7.3	7.6	7.7	8.0	7.9	7.8	7.8
Accommodation and Food Services	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.1	1.1	1.2	1.2
Information and communication	1.6	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.8	1.9	1.9	2.0
Financial and insurance activities	4.4	4.1	4.2	4.4	4.2	3.8	3.6	3.5	3.4	3.4	3.6	3.8
Real estate	3.3	3.3	3.2	3.1	3.1	3.0	2.9	2.8	2.8	2.8	2.8	2.8
Professional, scientific and technical activities	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Administrative and support service activities	1.8	2.0	2.2	2.3	2.6	2.7	2.7	2.7	2.8	2.8	2.8	2.8
Public administration and defence	4.6	4.8	4.8	4.8	4.8	4.6	4.4	4.3	4.2	4.2	4.3	4.3
Education	2.5	2.3	2.5	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.7
Human health and social work activities	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6
Arts, entertainment and recreation	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Other service activities	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Activities of households as employers;	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

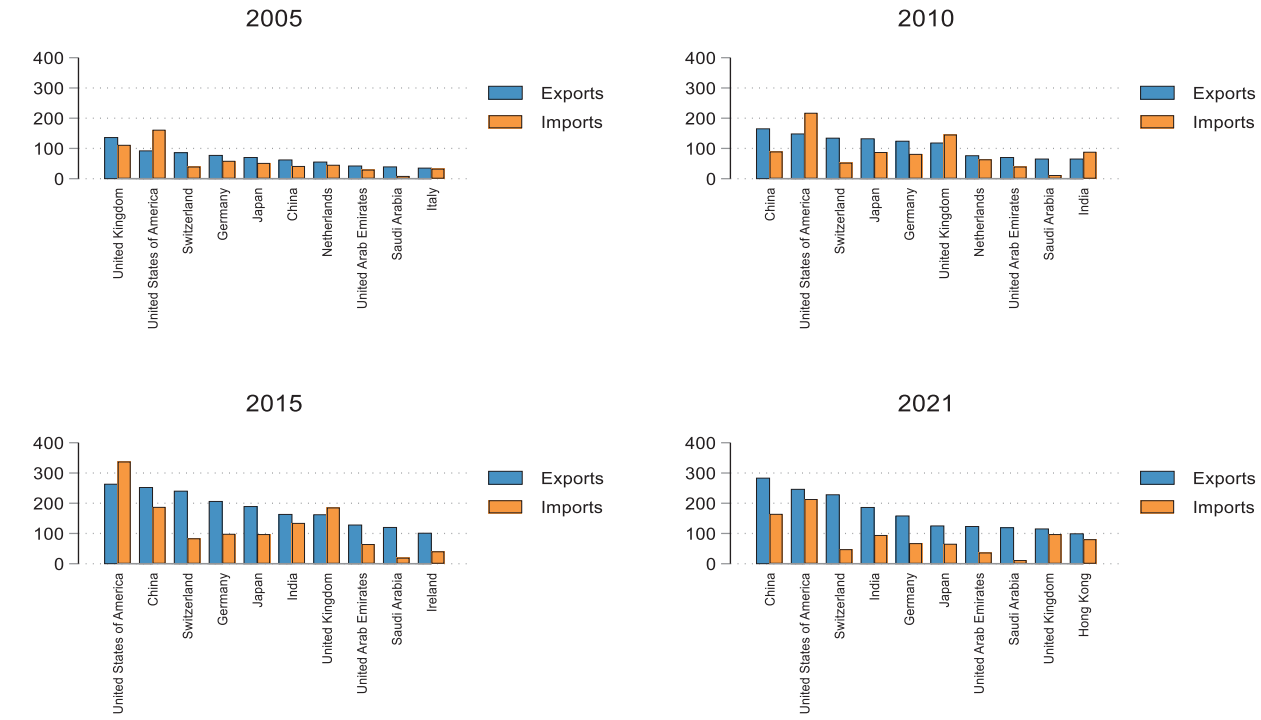
Source: National Bureau of Statistics, 2024

Appendix 9: Trends in the growth of service subsectors



Source: OECD-WTO data

Appendix 10: Key Trading partners and export destinations



Trade in Millions USD

Source: UNCTAD statistics

Appendix 11: Top 10 import partners for Transportation services, 2022

Source: World Integrated Trade Solution (WITS)

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