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The Role of Services in Global Value Chains and the Trajectory of Structural Transformation in Tanzania

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Abstract

This paper aims to provide an analysis of Tanzania's position within the integrated global economy, particularly through its participation in Global Value Chains (GVCs), focusing on the services sector. In recent years, data shows a consistent increase in the share of services in Tanzania's GDP, with sub-sectors such as transport and communication, finance, and insurance among the fastest-growing. However, despite the expansion of the domestic services sector, the share of trade in services as a proportion of GDP declined from 13% in 2011 to 9.5% in 2022, highlighting a disconnect between domestic services growth and international trade integration. This study integrates traditional intersectoral linkage analysis - using the 2015 and 2019 input-output tables - with an assessment of the role of services trade in Global Value Chains (GVCs), drawing on data from the GTAP-Africa database. Additionally, the study utilises trade-in-value-added (TiVA) data to explore patterns of dynamic structural change and the evolving nature of deindustrialisation in Tanzania. The results indicate that the Tanzanian economy is highly dependent on the services sector, which accounts for approximately 43% of total output. Regarding forward linkages, the economy relies significantly on transport and trade-related services to support other sectors. Furthermore, similar to the primary industry, the services sector shows a high share of domestic content in its exports, with nearly 80% originating from within the country. This suggests a strong dependence on local labour and domestic inputs, contributing to a higher domestic value added to Tanzania's export composition. The analysis reveals that domestic services contribute an average of 27.9% to Tanzania's total exports, while foreign services account for 13.7%. This indicates that Tanzania's exports are primarily driven by natural resource-based and agricultural products, which tend to have relatively high domestic value added.

Keywords: Services, Global Value Chains, services in value-added, decomposition of service sector, Tanzania, GTAP-Africa

JEL Codes: F13, F14, F23, F68

1 Introduction

Despite considerable investment (NBS, 2012¹; BOT, 2024²; KPMG, 2023³). Tanzania has not made significant progress in achieving inclusive growth-enhancing structural transformation since 2011, and more broadly, the last 40 years or so. In terms of sectoral transitioning, the economy has prematurely deindustrialised, 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, a remarkable economic growth performance achieved in the last decade was accompanied by an average annual labour productivity growth of about 4.1 per cent. More than three-quarters of this labour productivity growth is accounted for by structural change; (Ellis et al., 2018⁴). The remainder is largely attributable to within-sector productivity growth in agriculture. 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)⁵. However, two-thirds of employment growth in the private non-agricultural economy is characterised by small and mostly informal firms or individuals in low productivity, low innovation and limited growth sub-sectors, including trade services (Ellis et al., 2018). Trade services include retail, wholesale, and the food and beverages trade, which in Tanzania comprises the biggest share of the informal sector, making up fifty-five per cent of the informal business (Steiler, 2021⁶). Although these service sectors positively affect overall labour market structure by absorbing labour from agriculture in Tanzania, their inherent value addition is minimal, thus limiting their savings and expansion potential.

The potential of the services economy and trade for economic transformation, growth, poverty eradication and job creation are recognised 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. In Tanzania, data shows that the share of services in GDP is growing, and some service sub-sectors such as transport and communication, finance, and insurance etc. are among the fastest growing and often incur cross-border transactions; however, many countries focus on manufacturing goods or non-tradable services only.

Cross-border trade in services, especially observed 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 digitalisation. 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 into 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

¹ National Bureau of Statistics (NBS). 2012. Tanzania Investment Report 2012: Foreign Private Investment and Investor Perception

² Bank of Tanzania (BOT). 2024. Tanzania Investment Report 2023. Dar-es Salaam.

³ The report can be accessed at <https://assets.kpmg.com/content/dam/kpmg/ng/pdf/doing-deals-in-sub-saharan-africa.pdf>

⁴ Ellis, Mia, Margaret McMillan, and Jed Silver, 'Employment and Productivity Growth in Tanzania's Service Sector', in Richard Newfarmer, John Page, and Finn Tarp (eds), *Industries without Smokestacks: Industrialization in Africa Reconsidered* (Oxford, 2018; online edn, Oxford Academic, 20 Dec. 2018), <https://doi.org/10.1093/oso/9780198821885.003.0015>

⁵ Diao, X., J. Kweka, and M. McMillan (2016). 'Economic Transformation in Africa from the Bottom up: Macro and Micro Evidence from Tanzania'. NBER Working Paper 22889. National Bureau of Economic Research

⁶ Steiler, I. and Chedié Nyirenda, C. (2021). Towards sustainable livelihoods in the Tanzanian informal economy: Facilitating inclusion, organization, and rights for street vendors. UNU-WIDER Working Paper 2021/53

export value and domestic value-added, reducing the relative contribution of exports to the country's economic growth, particularly in Africa (REPOA, 2022⁷; Chung, 2015⁸). 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 must take place in the service sector to eliminate unnecessary obstacles to competitiveness.

The main purpose of this paper is to provide a broad picture of the level as well as the change in Tanzania's position in the integrated world through the Gross Value Chains (GVCs) with a focus on the service sector. Not only for policy implications, studying the Tanzania experience is interesting, as Tanzania is representative of small open economies that rely largely on trade. In particular, it has been involved in global supply chains since independence as a core strategy for its economic growth. Despite this long history, the country is deficient in the relevant statistics on how much Tanzania has engaged in vertical linkages across countries and the consequences of such engagement.

2 Methodology

Applying several methods suggested by Johnson and Noguera (2012)⁹ and Timmer et al. (2013)¹⁰ and using different databases (GTAP Africa, Input-Output Tables for Tanzania), this study specifically calculates GVC-related measures: value-added in exports, domestic value added in exports, foreign value added in exports, services in value-added, decomposition of service sector, and etc. We then use these measures to gauge the degree of participation by Tanzania industries in GVCs. Furthermore, we analyze the compositional changes in value-added aspects in the Tanzanian industries.

First, we apply a national-level sectoral input–output (IO) model (based on the 2019 Supply Use Tables) to analyse the linkages between service sub-sectors as well as between the total service sector and other sectors of the Tanzanian economy.

For the computation of inter-sectoral linkages disaggregated by backward and forward linkages, we used the 2019 IO table for Tanzania, employing the Hypothetical Extraction Method (HEM) and Partial Extraction Method (PEM) based on Dietzenbacher and van der Linden¹¹.

Second, to examine how services affect downstream sectors focusing on the existence of Global Value Chains (GVCs¹²) and analysis of trade-in-value-added data to help understand dynamic structural change and deindustrialization we apply the GTAP Africa database.

Although different databases of global IOT have emerged in recent years, we believe the GTAP data offers a balance between quality and country coverage, making it more suitable than other alternatives for our purposes. Other databases differ in their coverage of countries, sectors, and years as well as in overall accuracy.

⁷ REPOA. (2022). Enhancing Tanzania's Competitiveness in the Logistics Value Chain. Dar es Salaam: REPOA

⁸ Chung, Sunghoon (2015) : Korea's Participation in Global Value Chains and Policy Implications, KDI Focus, No. 59, Korea Development Institute (KDI), Sejong, <https://doi.org/10.22740/kdi.focus.e.2015.59>

⁹ Robert C. Johnson & Guillermo Noguera (2012) Fragmentation and Trade in Value Added over Four Decades. National Bureau of Economic Research. Working Paper Series No. 18186

¹⁰ Timmer, M.P.; Dietzenbacher, E.; Los, B.; Stehrer, R.; de Vries, G.J. An Illustrated User Guide to the World Input-Output Database: The Case of Global Automotive Production. *Rev. Int. Econ.* 2015, 23, 575–605

¹¹ Dietzenbacher, E.; van der Linden, J.A. Sectoral and Spatial Linkages in the EC Production Structure. *J. Reg. Sci.* 1997, 37, 235–257.

¹² The GVC describes the people and activities involved in the production of a good or service and its supply, distribution, and post-sales activities (also known as the supply chain) when activities must be coordinated across geographies. GVC is similar to Industry Level Value Chain but encompasses operations at the global level. We apply a multi-stage approach for measuring Tanzanian services sector in GVC.

The GTAP Africa database includes 42 African countries that are integrated into Sub-Saharan African (SSA) countries, and 7 regions (Oceania, East Asia, South and Southwest Asia, North America, Latin America, Western Europe and Middle East, and the Rest of the World). We map 65 sectors into 24 sectors with the highest disaggregation of the services sector. Finally, we split GTAP Africa into Tanzania IOT, SSA – IOT, Other Regions (OR) – IOT, and ROW.

We assume that a world made up of only 4 regions (such as Tanzania, SSA, OR, and ROW), each with 24 sectors is used to calculate foreign value added (FVA) and domestic value added (DVA), as well as other concepts. We will add the East African Community as a part of the GVCs analysis.

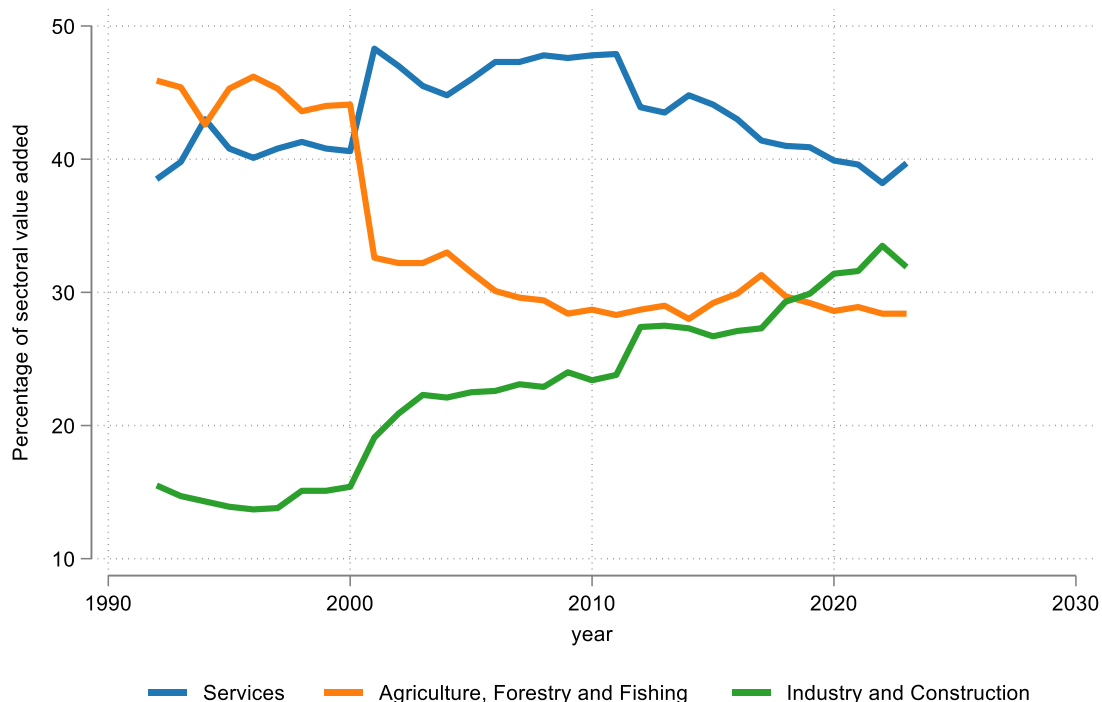
3. Decomposition analysis of services trade (including exports) to establish Tanzania's trade profile

3.1 Evolution of service sub-sectors growth

The service sector in Tanzania has continued to be 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 marked decrease from 44.1 per cent in 2000 to 32.6 per cent of VA in 2001, while the share of services increased from 40.6 per cent to 48.3 per cent of VA during the same period (Figure 1)¹³ showing signs of structural transformation. Services sector growth that was sustained between the 1990s and 2012 was followed by a period of deceleration, as industry and construction sector shares recorded an increasing trend. The growth of the industry and construction sector is attributed to the rapid expansion of the construction sector due to massive public investments in road, railway, air, and energy infrastructures. However, the year 2023 witnessed a divergent trend of services and industry and construction sectors, as the share of services started to pick while that of industry exhibited a slow decline.

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

¹³ However, it is important to note that these sectoral contributions are affected by GDP rebasing for different years 1992, 2001, 2007 and 2015.



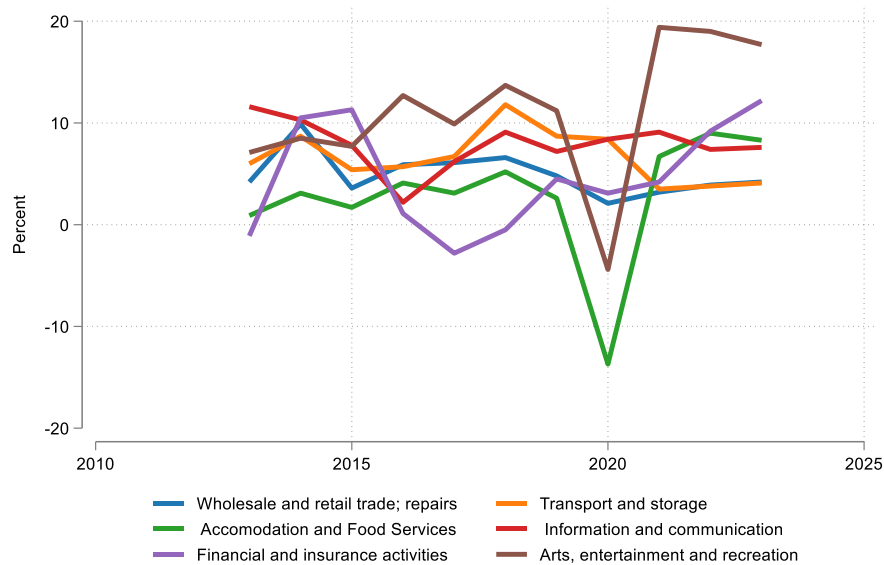
Source: National Bureau of Statistics

Over the last decade, 2012 - 2023, the services sector recorded an average annual growth rate of 5.9 per cent. The highest growth rate was 9.3 recorded in 2014 before slowing down to 4.3 per cent in 2020 due to the COVID-19 pandemic shock. As of 2023, the sector grew at an average rate of 5.8 percent, showing signs of economic recovery from the external shocks (NBS, 2024)¹⁴.

In Tanzania, few services sub-sectors, wholesale, retail trade and 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 to GDP were 8.5, 7.8, 4.3, 3.8, and 2.8 percent respectively. 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 the highest 19.4 percent in 2021, before slightly decreasing to 17.7 percent in 2023 (Figure 2). Similarly, financial and insurance activities recorded an impressive growth from -1.1 percent in 2013 to the highest 12.2 percent in 2023. Accommodation and food services also witnessed a higher growth rate rising from 0.9 percent in 2013 to 8.3 percent in 2023 due to a booming tourism sub-sector.

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

¹⁴ <https://www.nbs.go.tz/statistics/topic/annual-national-accounts-publications>



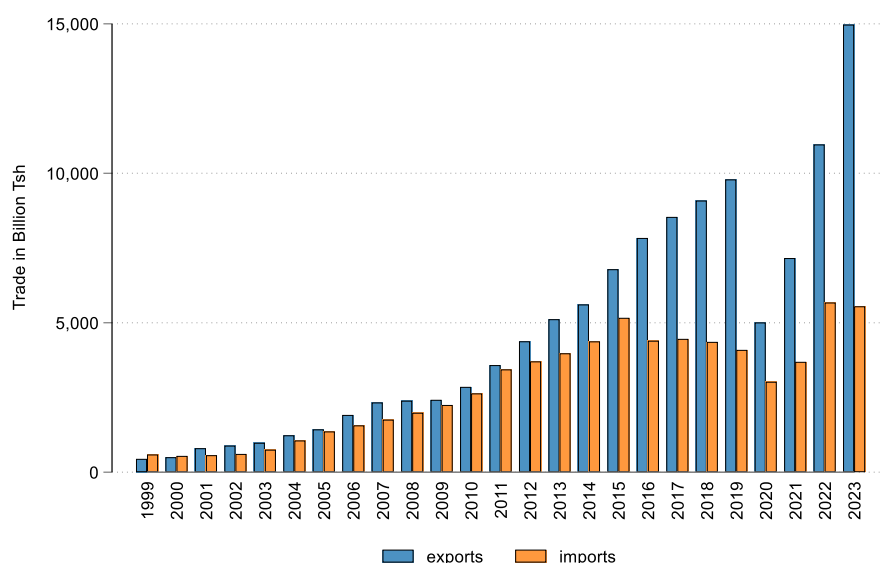
Source: National Bureau of Statistics (NBS)

3.2 Tanzania's Services Trade Overview

Tanzanian service exports reached an all-time high of TZS 14,973 billion (USD 6.3 billion) in 2023, increasing by 36.7 per cent from 2022. For about two decades, since 2001, Tanzania recorded a services trade surplus, which has been increasing over time. There was a moderate setback during the COVID-19 period owing to the slowdown of travel and tourism activities (Figure 3).

Services imports fell to TZS 5549.8 billion (USD 2.3 billion) in 2023 from its high of TZS 5165.6 billion (USD 2.6 billion) in 2015 (Figure 1). Despite the increasing trend of imports over the last years, exports growth has significantly outpaced imports growth even during the pandemic period.

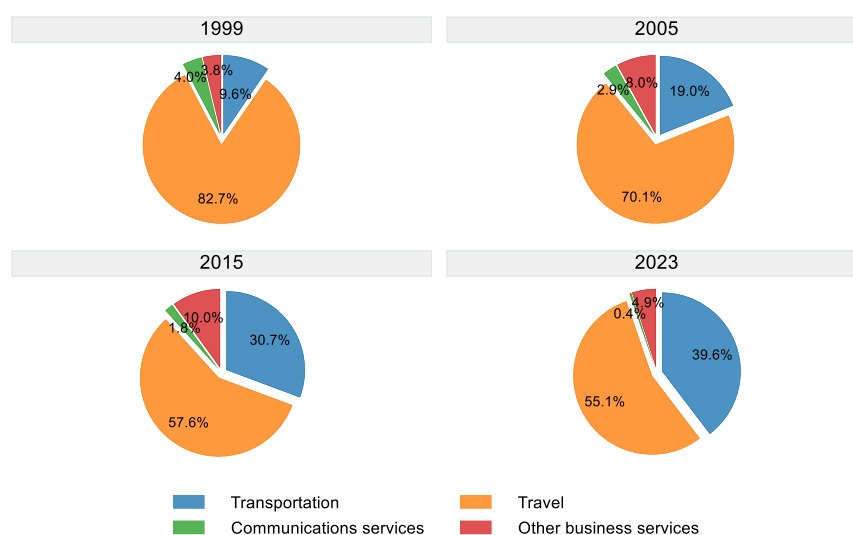
Figure 3: Trade in services, 1999 - 2023



Source: Bank of Tanzania

The composition of services exports has shown moderate changes over the last 20 years, with the share of travel decreasing from 82.7 per cent in 1999 to 55.1 per cent in 2023. Transportation share increased from 9.6 per cent to 39.6 per cent during the same period, while that of other business services increased from 3.8 per cent in 1999 to 10 per cent in 2015 before slowing down to 4.9 per cent in 2023. Major service exports in Tanzania are travel and transportation which made up about 86 percent of total exports in 2023. Communications services exports show a consistent declining 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 AI).

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

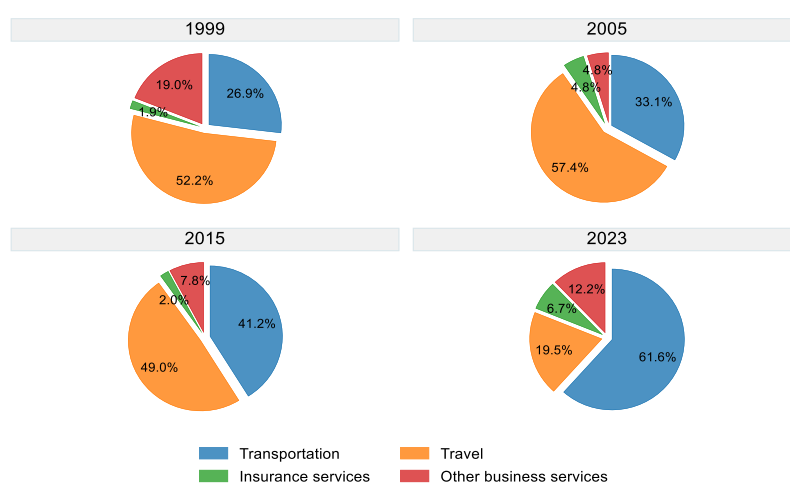


Graphs by Year

Source: Bank of Tanzania

Over the last 20 years, the structure of services imports has recorded substantial changes. Figure 5 shows that the share of transportation increased from 26.9 per cent in 1999 to almost a third of total service imports, at 61.6% in 2023, while travel services that constituted the largest share of imports in 1999 decreased from 52.2 percent to only 19.5 percent in 2023. Other sectors with significant imports include other business services whose contribution decreased by 7 percentage points while the share of insurance services increased by 4.8 percentage points between 1999 and 2023. The structure of Tanzanian services trade is similar to most countries in the world, with transportation, travel and other business services dominating.

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

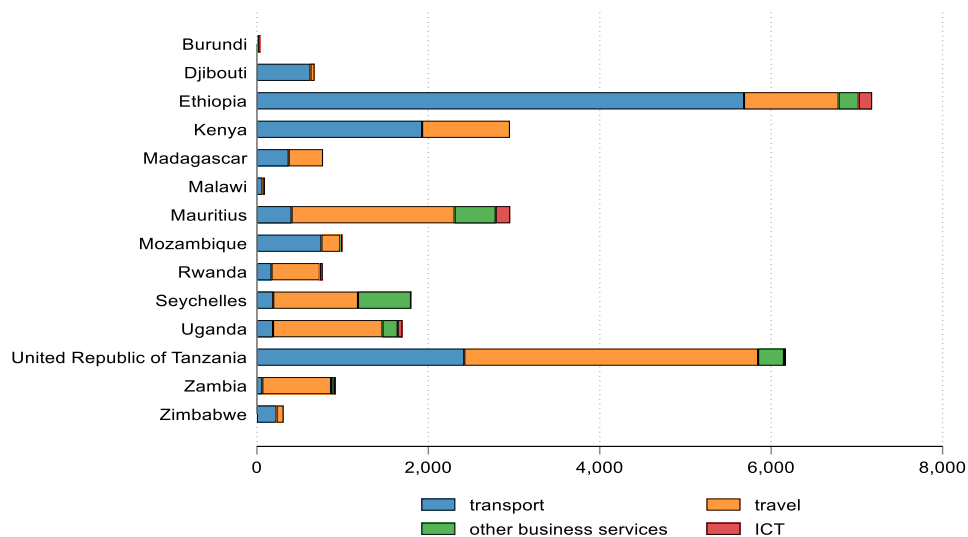


Graphs by year

Source: Bank of Tanzania

Tanzanian services exports, particularly for transportation and travel sub-sectors, are comparatively higher than most Eastern African countries (Figure 6). In 2023, Ethiopia recorded the highest transportation exports, and Tanzania recorded the highest exports in travel services compared to comparable countries in the same year. This shows the potential of the travel sub-sector, which is mainly composed of 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

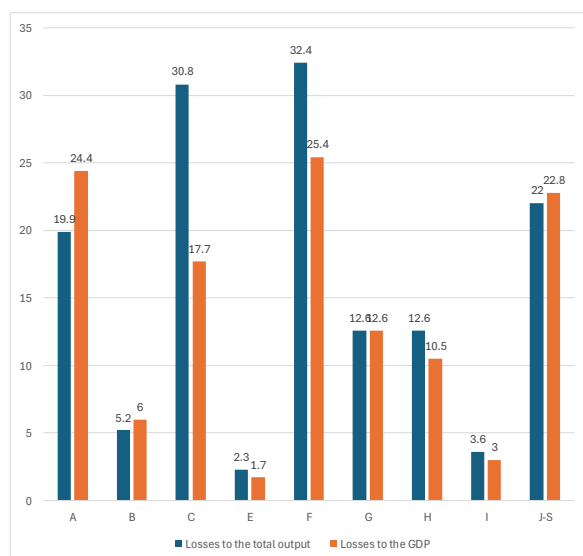
Notes: For some countries, data for 2023 for other business services and ICT sectors are not reported.

3.3 Inter-Sectoral Economic Linkages in the Services Industries

We begin our analysis by first identifying the sectors that, from a linkages point of view, are key to the overall economy. Second, shifting focus towards sub-sectors of services, we pinpoint those sectors that closely interlink with this sector. Third, we zoom in for an in-depth examination of the identified significant inter-sectoral linkages by conducting P-HEM analyses on those sectors that were found to be key to the services sector.

We first conducted a P-HEM analysis on the Tanzanian economy, partially extracting each aggregated economic sector to understand their respective importance for the economy from the perspective of production linkages. This exercise resulted in 8 sectors showing as key to the Tanzanian economy. These sectors are depicted in Figure 7.

Figure 7. Most Linked economic sectors to the total output and GDP at basic prices in Tanzania, 2019 (in percentage)



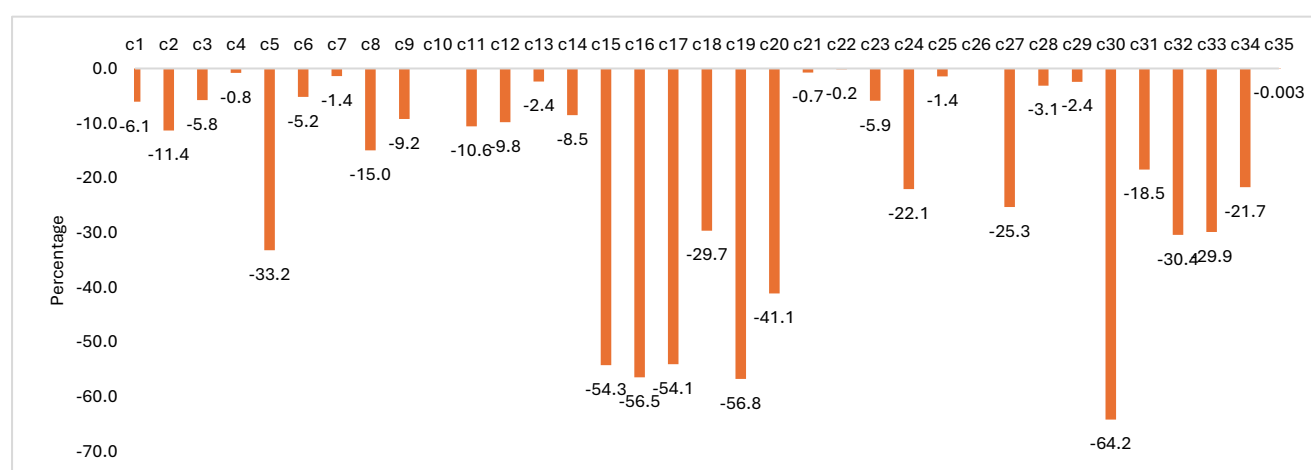
Legend

Agriculture	A
Mining	B
Manufacturing	C
Electricity	E
Construction	F
Trade	G
Transport	H
Accommodation and food	I
Other services sectors	J-S

Source: Author's calculation based on the 2019 IOT for Tanzania

Based on the P-HEM analysis, the total services sector is partially extracted to identify the key sectors that exhibit the strongest backwards and forward linkages with the services sector. Eliminating the total services sector, 43% of the total output in the economy was lost, approximately 105,515,565 million TZS (USD billion 38.4). Eliminating the total services from the economy is reflected in all sub-sectors of the economy (Figure 8). This means that the economy is highly dependent on services.

Figure 8. 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 equipments 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.

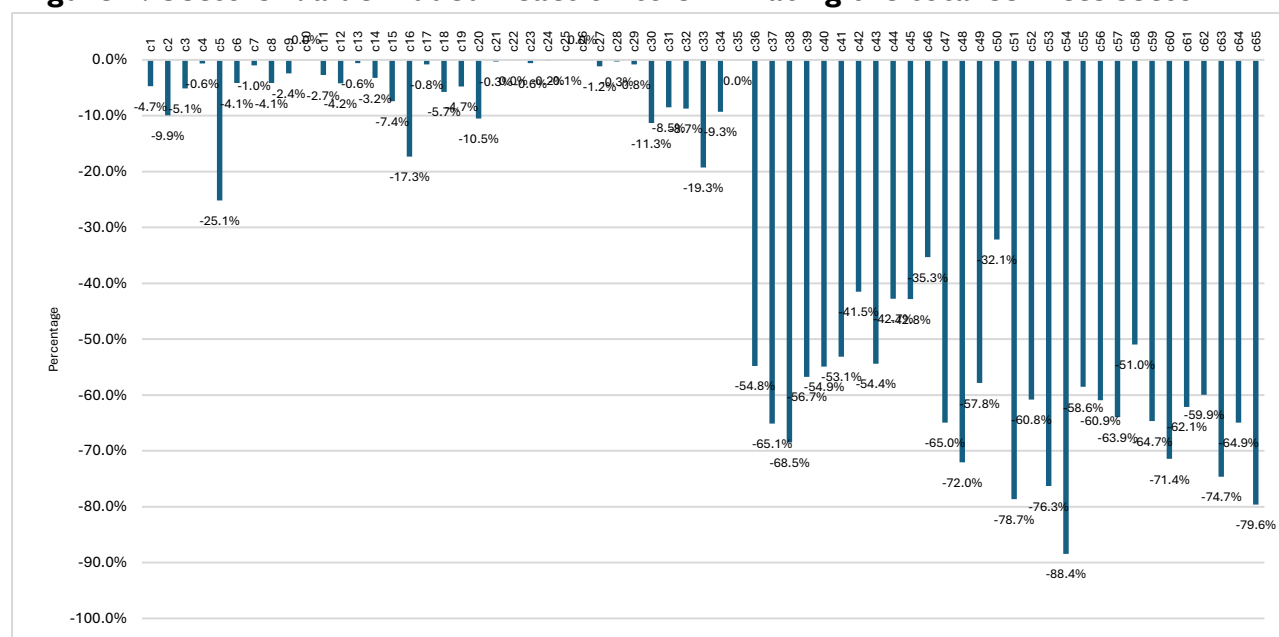
Note: The value indicates a percentage decrease in total economic output of the respective sectors following

partial extraction of services.

Source: Author's calculation based on the 2019 IOT for Tanzania

The gross value-added loss is 62,138,052 million TZS (USD billion 22.6), which amounts to 42% of their GDP. This implies that the services sector is a key sector in the Tanzanian economy (Figure 8).

Figure 9. Sectors' Value-Added 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 equipments 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.

Source: Authors calculation based on 2019 IOT for Tanzania

In terms of **forward linkages or downstream participation**, aside from the total services sector, the sector with the highest output loss is trade and transportation (land) industries suggesting that the services sector heavily relies on this sector for intermediate sales. The total services sector also **has high forward dependence as it makes up 50% of its GDP** (Figure 10).

Figure 10: Forward linkages or downstream participation of the service sector in the Tanzanian economy

Output Loss			GVA plus taxes on products			GVA plus taxes on products		
c1	(382,006)		c1	(293,612)		Products of agriculture, hunting and related services	c1	
c2	(218,308)		c2	(190,067)		Products of forestry, logging and related services	c2	
c3	(283,688)		c3	(249,178)		Fish and other fishing products; aquaculture products; support services to fishing	c3	
c4	(691,378)		c4	(544,088)		Coal and lignite	c4	
c5	(662,620)		c5	(501,236)		Crude petroleum and natural gas	c5	
c6	(785,917)		c6	(625,611)		Metal ores	c6	
c7	(888,114)		c7	(632,927)		Other mining and quarrying products	c7	
c8	(1,001,363)		c8	(275,874)		Manufacture of food products	c8	
c9	(1,583,705)		c9	(410,199)		Manufacture of beverages	c9	
c10	(2,109,335)		c10	(599,880)		Manufacture of tobacco products	c10	
c11	(763,817)		c11	(195,504)		Manufacture of textiles	c11	
c12	(907,895)		c12	(387,296)		Manufacture of wearing apparel	c12	
c13	(1,046,257)		c13	(254,978)		Manufacture of leather and footwear	c13	
c14	(1,444,327)		c14	(546,974)		Manufacture of wood and of products of wood and cork	c14	
c15	(772,893)		c15	(105,118)		Manufacture of paper and paper products	c15	
c16	(1,462,017)		c16	(447,720)		Printing and reproduction of recorded media	c16	
c17	(110,861)		c17	(1,641)		Manufacture of coke and refined petroleum products	c17	
c18	(675,048)		c18	(129,989)		Manufacture of chemicals and chemical products	c18	
c19	(278,480)		c19	(23,265)		Manufacture of basic pharmaceutical products	c19	
c20	(844,131)		c20	(215,792)		Manufacture of rubber and plastics products	c20	
c21	(1,822,947)		c21	(645,557)		Manufacture of non-metallic mineral products	c21	
c22	(940,632)		c22	(125,163)		Manufacture of basic metals	c22	
c23	(796,463)		c23	(79,384)		Manufacture of fabricated metal products, except mach. & equip.	c23	
c24	(39,900)		c24	(296)		Manufacture of computer electronic and optical products	c24	
c25	(325,317)		c25	(19,421)		Manufacture of electrical equipment	c25	
c26	(369,012)		c26	(34,332)		Manufacture of machinery and equipment n.e.c.	c26	
c27	(97,746)		c27	(4,472)		Manufacture of motor vehicles, trailers and semi-trailers	c27	
c28	(409,428)		c28	(38,878)		Other transport equipments	c28	
c29	(2,261,474)		c29	(750,215)		Furniture	c29	
c30	(947,900)		c30	(166,779)		Other manufactured articles n.e.c.	c30	
c31	(762,486)		c31	(348,854)		Repair and installation services of machinery and equipment	c31	
c32	(3,715,916)		c32	(1,064,512)		Electricity, gas, steam and air conditioning	c32	
c33	(1,097,955)		c33	(708,227)		Natural water; water treatment and supply services	c33	
c34	(833,793)		c34	(356,524)		Sewerage services; waste collection, treatment and disposal services	c34	
c35	(2,910,621)		c35	(1,318,151)		Construction	c35	
c36	(3,423,037)		c36	(1,875,195)		Wholesale and retail trade, and repair services of motor vehicles	c36	
c37	(6,393,015)		c37	(4,162,965)		Wholesale trade services, except of motor vehicles	c37	
c38	(9,273,732)		c38	(6,354,317)		Retail trade services, except of motor vehicles and motor vehicles parts	c38	
c39	(12,352,354)		c39	(7,008,477)		Land transport and transport via pipelines	c39	
c40	(1,500,244)		c40	(823,607)		Water transport	c40	
c41	(1,435,064)		c41	(762,638)		Air transport	c41	
c42	(4,353,858)		c42	(1,807,281)		Warehousing and support activities for transportation	c42	
c43	(2,156,900)		c43	(1,173,183)		Postal and courier activities	c43	
c44	(1,629,941)		c44	(696,772)		Accommodation services	c44	
c45	(2,668,115)		c45	(1,143,400)		Food and beverage serving services	c45	
c46	(719,915)		c46	(254,116)		Publishing services	c46	
c47	(1,033,797)		c47	(671,588)		Motion picture, video and television programme production	c47	
c48	(888,926)		c48	(640,340)		Programming and broadcasting services	c48	
c49	(3,272,419)		c49	(1,892,932)		Telecommunications	c49	
c50	(1,853,680)		c50	(595,751)		Computer programming, data processing and information services	c50	
c51	(4,383,880)		c51	(3,499,744)		Financial services (including FISIM), except insurance	c51	
c52	(1,229,775)		c52	(747,684)		Insurance, reinsurance and pension funding services	c52	
c53	(1,781,245)		c53	(1,358,945)		Services auxiliary to financial services and insurance	c53	
c54	(4,401,704)		c54	(3,891,551)		Real estate services and imputed rents of owner-occupied dwellings	c54	
c55	(2,467,572)		c55	(1,444,769)		Professional, scientific, technical and veterinary services	c55	
c56	(1,998,329)		c56	(1,217,580)		Rental, leasing and employment services	c56	
c57	(3,334,964)		c57	(2,133,589)		Travel agency, tour operator and other reservation services	c57	
c58	(3,359,420)		c58	(1,712,073)		Other administrative and support services	c58	
c59	(8,211,730)		c59	(5,310,015)		Public administration and defence services; compulsory social security	c59	
c60	(4,912,305)		c60	(3,509,201)		Education services	c60	
c61	(2,978,245)		c61	(1,850,097)		Human health services	c61	
c62	(1,621,554)		c62	(971,918)		Social work services	c62	
c63	(1,706,200)		c63	(1,273,682)		Arts, entertainment and recreation services	c63	
c64	(1,992,004)		c64	(1,293,680)		Services furnished by membership organisations	c64	
c65	(1,185,487)		c65	(944,111)		Repair of computers and personal and household goods	c65	
c66	(2,032,076)		c66	(1,326,775)		Other personal services	c66	
c67	(315,780)		c67	(315,780)		Domestic services	c67	
(135,113,471)			(74,905,492)					
-37%			-50%					

Source: Authors calculation based on 2019 IOT for Tanzania

In order to understand the decomposition of the Gross Value Added of services sectors we apply the VBY approach. At this stage, we extracted the transport sector only. The results show that the total gross value-added loss of the transport sector is TZS 15,754.5 billion, 10.5% of the 2019 GDP. This means that the value added of the total transport sector constitutes 10.5% of GDP (Figure 11).

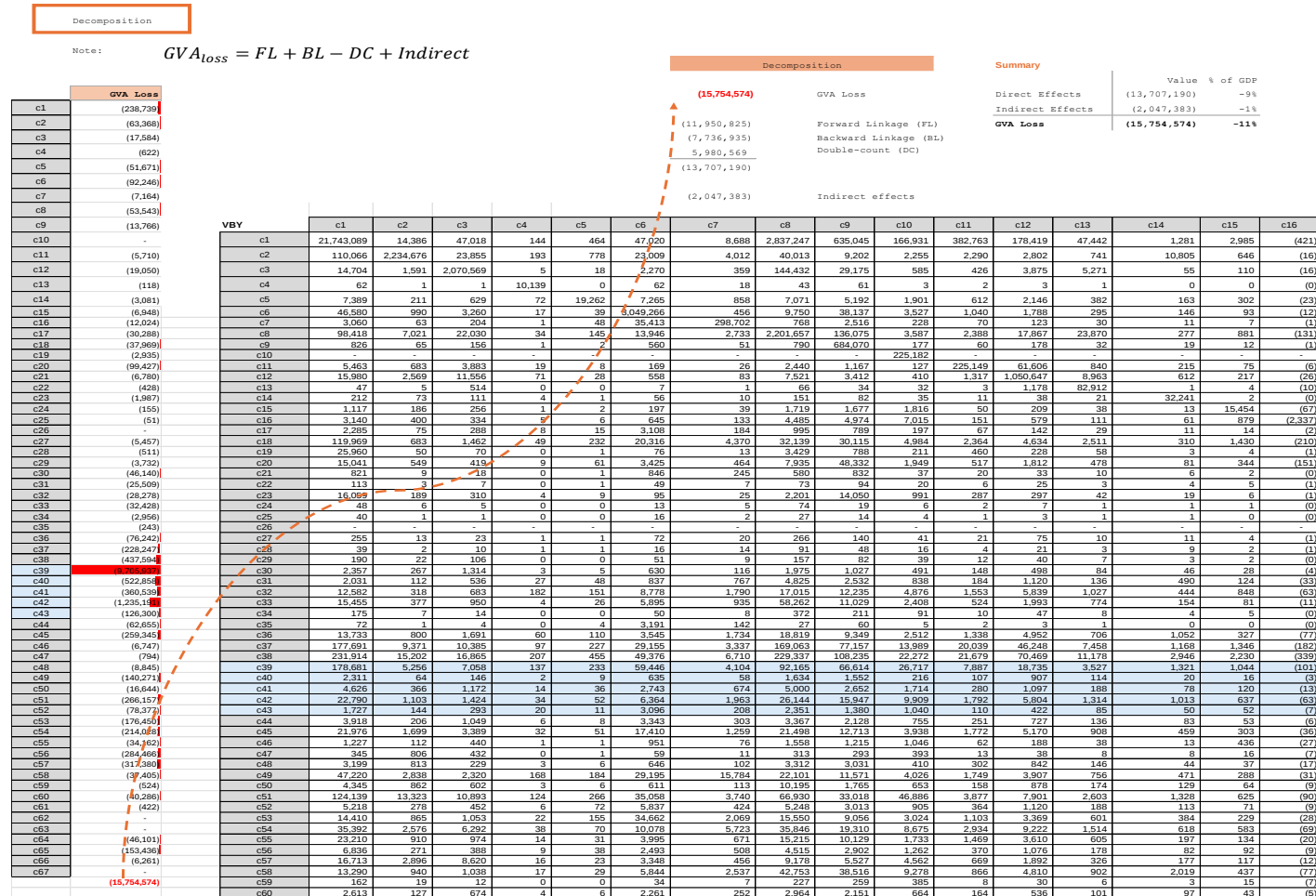
Figure 11: Decomposition of the Gross Value Added of the transport sector
Source: Authors calculation based on 2019 IOT for Tanzania

	GVA				GVA Loss	share of transport VA in GVA per industry
c1	28,148,975			c1	(238,739)	0.85%
c2	3,819,605			c2	(63,368)	1.66%
c3	2,426,991			c3	(17,584)	0.72%
c4	123,998			c4	(622)	0.50%
c5	334,544			c5	(51,671)	15.45%
c6	5,688,076			c6	(92,246)	1.62%
c7	1,515,652			c7	(7,164)	0.47%
c8	3,111,059			c8	(53,543)	1.72%
c9	752,973			c9	(13,766)	1.83%
c10	225,182			c10	-	0.00%
c11	349,923			c11	(5,710)	1.63%
c12	1,269,306			c12	(19,050)	1.50%
c13	99,676			c13	(118)	0.12%
c14	123,817			c14	(3,081)	2.49%
c15	70,437			c15	(6,948)	9.86%
c16	182,179			c16	(12,024)	6.60%
c17	69,334			c17	(30,288)	43.68%
c18	750,737			c18	(37,969)	5.06%
c19	83,750			c19	(2,935)	3.50%
c20	483,256			c20	(99,427)	20.57%
c21	1,578,163			c21	(6,780)	0.43%
c22	711,378			c22	(428)	0.06%
c23	128,313			c23	(1,987)	1.55%
c24	6,660			c24	(155)	2.33%
c25	77,727			c25	(51)	0.07%
c26	255,438			c26	-	0.00%
c27	80,599			c27	(5,457)	6.77%
c28	46,915			c28	(511)	1.09%
c29	488,399			c29	(3,732)	0.76%
c30	227,569			c30	(46,140)	20.28%
c31	386,473			c31	(25,509)	6.60%
c32	579,872			c32	(28,278)	4.88%
c33	615,360			c33	(32,428)	5.27%
c34	28,752			c34	(2,956)	10.28%
c35	19,623,404			c35	(243)	0.00%
c36	1,573,554			c36	(76,242)	4.85%
c37	4,677,514			c37	(228,247)	4.88%
c38	7,422,615			c38	(437,594)	5.90%
c39	9,705,937			c39	(8,705,937)	100.00%
c40	522,858			c40	(522,858)	100.00%
c41	360,539			c41	(360,539)	100.00%
c42	1,235,191			c42	(1,235,191)	100.00%
c43	126,300			c43	(126,300)	100.00%
c44	374,513			c44	(62,655)	16.73%
c45	1,663,184			c45	(259,345)	15.59%
c46	63,874			c46	(6,747)	10.56%
c47	134,514			c47	(794)	0.59%
c48	154,526			c48	(8,845)	5.72%
c49	1,726,140			c49	(140,271)	8.13%
c50	134,231			c50	(16,644)	12.40%
c51	3,483,762			c51	(266,157)	7.64%
c52	472,114			c52	(78,377)	16.60%
c53	1,144,402			c53	(176,450)	15.42%
c54	3,974,883			c54	(214,028)	5.38%
c55	585,469			c55	(34,162)	5.84%
c56	384,996			c56	(284,466)	77.94%
c57	1,240,536			c57	(317,380)	25.58%
c58	1,326,467			c58	(37,405)	2.82%
c59	6,255,569			c59	(524)	0.01%
c60	3,630,648			c60	(40,286)	1.11%
c61	2,093,548			c61	(422)	0.02%
c62	374,477			c62	-	0.00%
c63	501,583			c63	-	0.00%
c64	325,414			c64	(46,101)	14.17%
c65	560,592			c65	(153,436)	27.37%
c66	895,462			c66	(6,261)	0.70%
c67	315,780			c67	-	0.00%
	131,885,681				(15,754,574)	11.95%
					-10.5%	

Source: Authors calculation based on 2019 IOT for Tanzania

The effect on the Tanzania's GDP is mainly brought by the direct linkages to the total transport sector. A small percentage of the losses are attributed to the lost transactions (indirect effect) between other sectors (Figure 12). This means that the transport sector is important to the economy as it is heavily interlinked with the other sectors, both forward and backwards.

Figure 12: Decomposition of the Gross Value Added of the transport sector using forward and backward linkages and direct and indirect effects (fragment from the 2019 IO model)



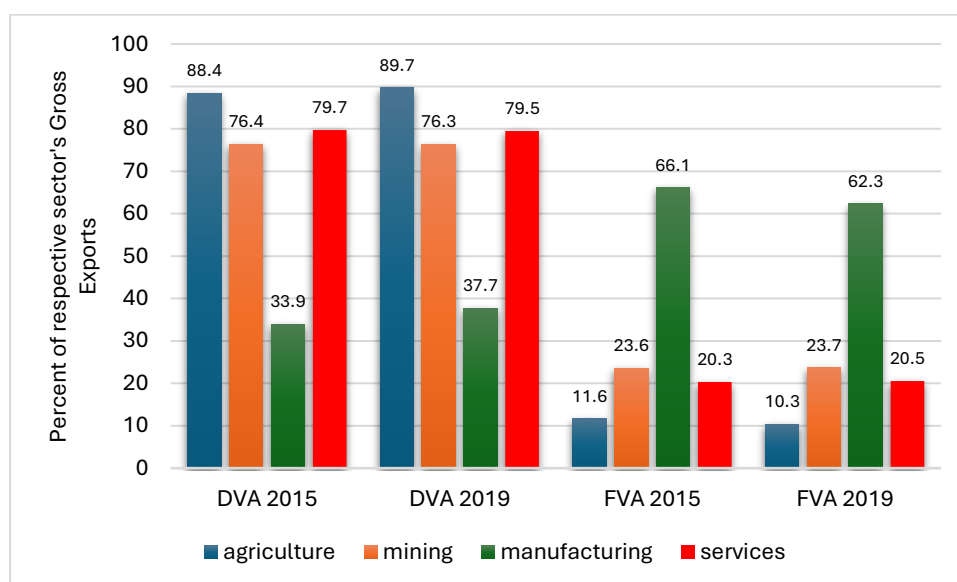
Source: Authors calculation based on 2019 IOT for Tanzania

3.3 Decomposition of Total Service Exports

Decomposition of services exports based on the 2015 and 2019 Tanzanian input-output (IOT) tables is presented in Figure 13. Generally, Tanzania depends more on domestic value added compared to imported contents for production of both goods and services. However, sectoral decomposition revealed distinctive composition among sectors. The notable is high domestic content in primary sectors, i.e agriculture and mining, 88.4 percent and 76.4 percent respectively. This reflects the high dependence on local natural resources and labour, a common phenomenon in resource rich countries including Tanzania. Conversely, manufacturing sector exports reveal high foreign content, suggesting dependence on foreign intermediate inputs with limited local content.

The service sector, similar to the primary sector, constitutes more domestic content for its exports compared to foreign content, nearly 80 percent. Like many lower- and middle-income countries, Tanzanian exports of “traditional” services that is travel, transportation and business services rely heavily on local labour which raises the domestic value added of exports.

Figure 13: Domestic and Foreign value added of gross exports by Sector



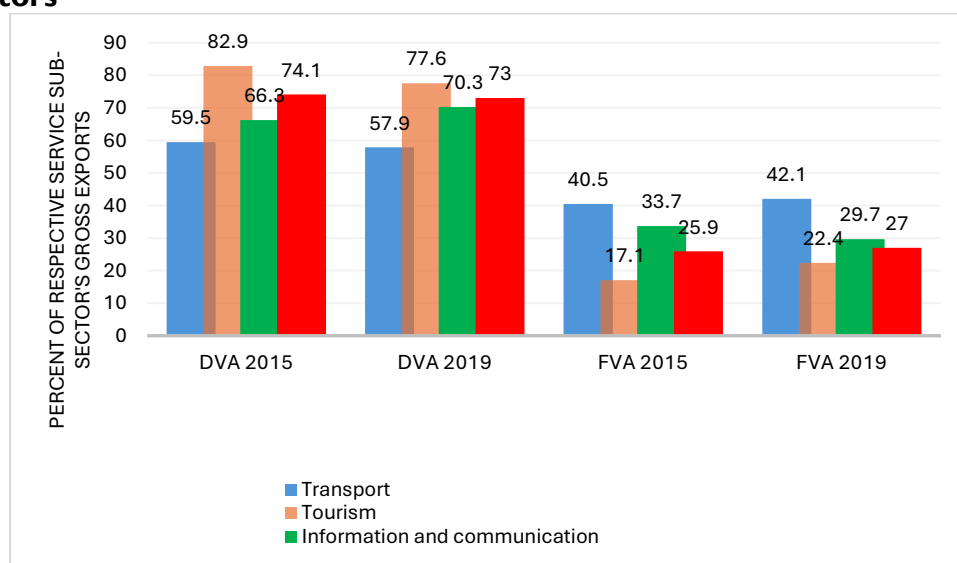
Source: Author's computation using 2015 and 2019 Tanzania I-O tables

Decomposition of gross exports of service sub-sectors reveals a similar pattern to total service sectors albeit with slight differences (Figure 14). The tourism sub-sector embeds the highest domestic value added, 82.9 per cent followed by insurance, real estate, and business services, 74.1. 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 for tourists, and certain retail goods such as arts and crafts (Kweka et al., 2003). The tourism sector is largely local labour intensive, providing more than 1.4 million direct and indirect jobs, mostly to women, explaining the high domestic value-added content of its exports (World Bank, 2021).

Figure 7 shows that the transport sub-sector has relatively less DVA content compared to other sub-subsectors, that is 59.5 percent. This signifies the importance of foreign value addition in gross exports. 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 services¹⁵. The transport system in Tanzania consists of five modes: roads, rail, water, air and pipelines. Modernization of infrastructure supported by high levels of investment increased the importance of imported intermediate inputs for building and maintaining transport 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 of the inputs are capital and technology intensive, especially in maritime, railway and air transport services, which are mostly imported.

Figure 14: Domestic and Foreign value added of gross exports by Service sub-sectors



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

4. Analysis of the Role of Services in Value Chains: Evidence from the GTAP-Africa Database

4.1 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) – see Section “Methodology”. GTAP data has already been successfully used to understand the role of GVCS in the recent global trade slowdown (UNECA, 2023).

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

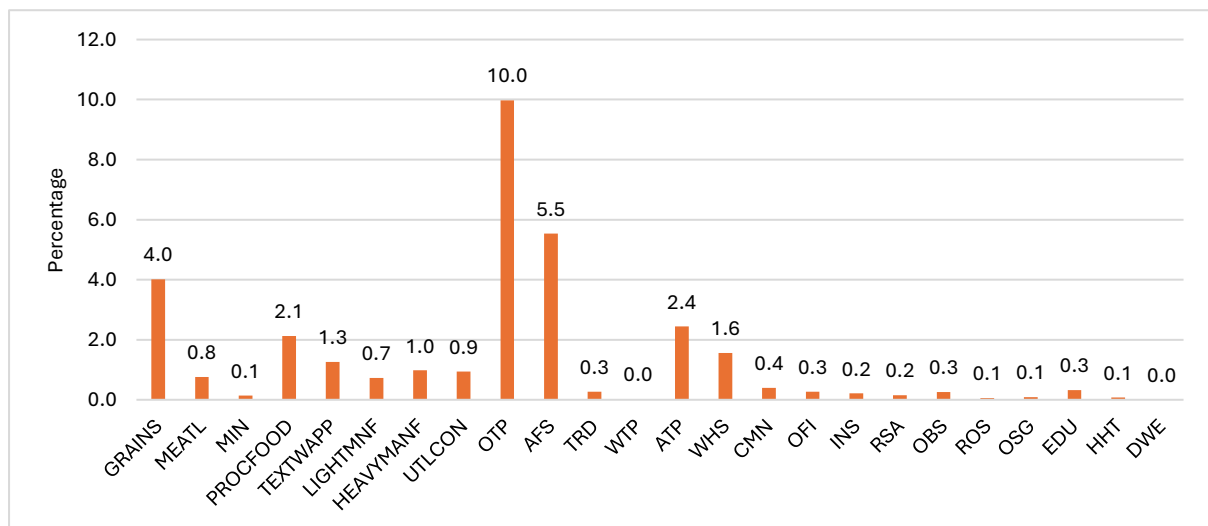
Multiple studies have found that the share of services in trade in value added is both large (significantly larger than the share of services in gross trade) and increasing (OECD, WTO, and World Bank Group 2014¹⁶). However, the total domestic value added in exports from Tanzania

¹⁵ <https://databank.worldbank.org/metadataglossary/world-development-indicators/series/BX.GSR.TAN.ZS>

¹⁶ OECD, WTO and World Bank Group. 2014. “Global Value Chains: Challenges, Opportunities, and Implications for Policy”. Report prepared for submissions to the G20 Trade Ministers Meeting, Sydney, Australia, 19 July 2014.

accounts for only 4% of the total exports across Sub-Saharan Africa, while the foreign value added in exports of Tanzania constitutes a significant 96% of the total exports across the region. These findings are not surprising, given that Tanzania's share of total Sub-Saharan Africa's gross exports was relatively small, at around 1.3% in 2017 (Figure 15). This export composition highlights the key sectors in Tanzania's export portfolio, such as raw materials and primary products, which typically involve a larger share of foreign value added. This dynamic reflects Tanzania's reliance on exports of unprocessed or minimally processed goods, where foreign inputs and international supply chains play a dominant role. The most exported goods include grains (4%), processed food (2.1%), and textiles (1.3%). In terms of services, Tanzania's highest shares are in transportation (10%), air transport (2.4%), and accommodation (5.1%). 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 totaled USD 523.97 billion. Therefore, Tanzania's exports represented approximately 2.7% of Sub-Saharan Africa's total exports in 2023.

Figure 15: 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

4.2 TiVA by industry

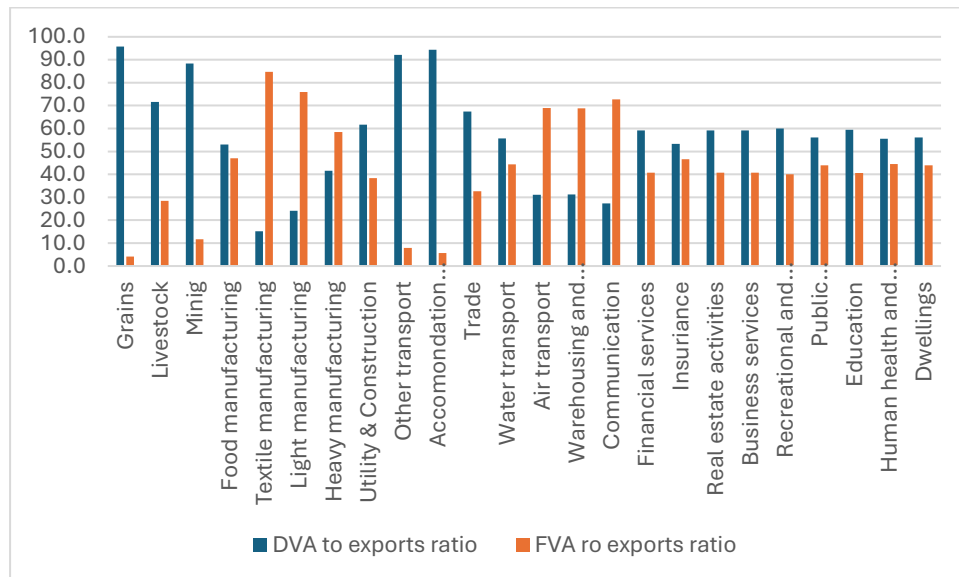
We estimated several indicators related to GVCs with a focus on the Tanzanian service sector and the whole economy.

1. The Domestic Value Added (DVA) in exports are the value added in exports whose outputs are produced by domestic industries.
2. The Foreign Value Added (FVA) in exports are the value added in exports whose outputs are produced by foreign industries (in our case SSA region). Known as backward participation.
3. GVC Participation Index $(DVA+FVA)/\text{Gross Exports}$ is the best indicator which shows how the sector is involved in 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 16 displays these ratios for the industries in Tanzania.

Figure 16. Domestic and Foreign value added in gross exports by industry

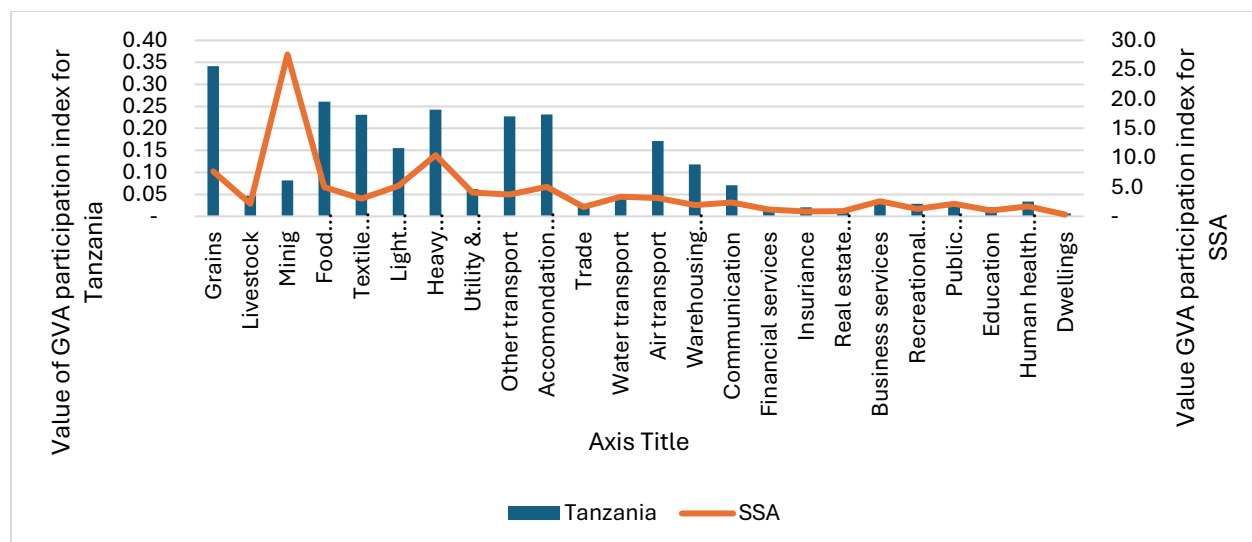


Source: Authors' calculation based on GTAP-Africa

Grain exports have more than 90% domestic value-added ratio in their gross exports, meaning that exports in this sector are locally produced. While textile, light and heavy manufacturing have 15.2%, 24.1%, and 41.6% ratios, suggesting that the manufacturing sector relies on foreign inputs or value-added. Services industries show an average 64.5% ratio.

Tanzania's overall GVCs participation index within the SSA region stands at 2.5. The country shows a low GVC participation index across all sectors (Figure 17), 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% 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 17. GVA 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 being primary goods (such as agricultural products or raw materials) rather than intermediate goods. According to Mouanda-Mouanda, 2019¹⁷, most of African countries have lower GVC participation depending on how much they rely on imports of intermediate goods for local production.

4.3 TiVA and trade in services

One of the advantages of the TiVA analysis is that it allows us to estimate the role of services in trade. Such 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. Traditionally, we value goods disregarding how upstream domestic economic activities (industries), those in the initial stages of production, contribute to their creation. Therefore, we underestimate the weight of services used in the design and commercialization of such goods. Analysis of TiVA is especially helpful as it allows us to understand the contribution of services in domestic production and their value-added contribution to trade.

We quantify the value generated in the total services value chain makes it possible:

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

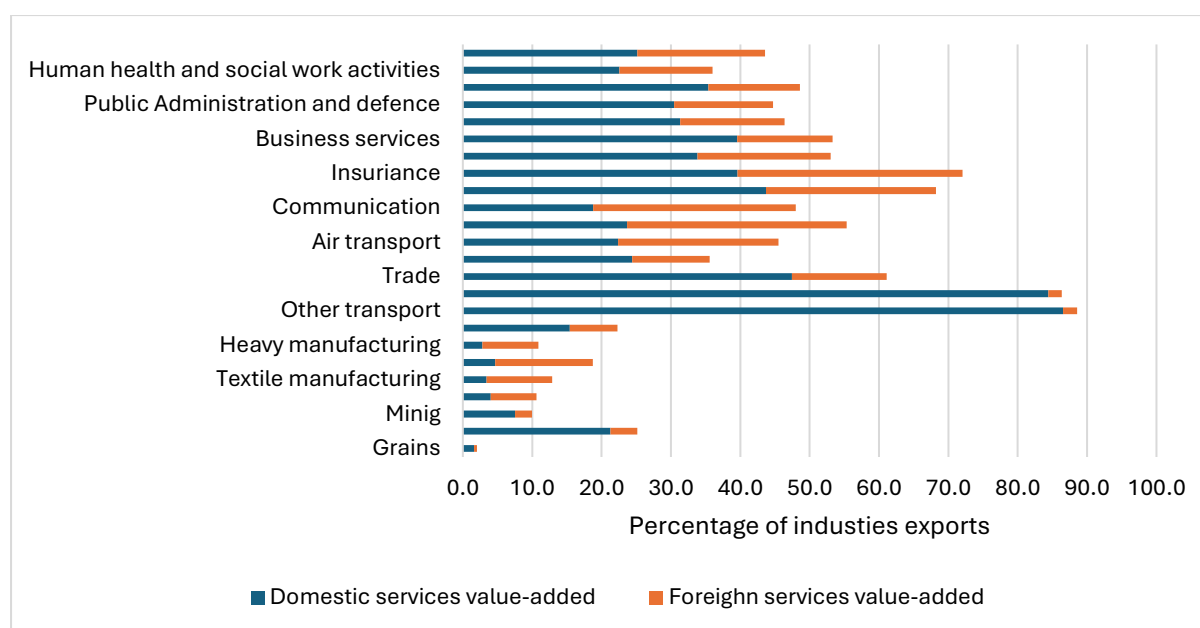
According to the report of the ESCAP¹⁸, the recognition of the value created, directly or indirectly, by services in the process of manufacturing, distribution of goods has become known as “servicification”. The expansion of servicification is driven by many factors, most notably reductions

¹⁷ 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>

¹⁸ 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>

of barriers to trade in services, and the spread of GVCs. Empirical evidence¹⁹ 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 a larger share of foreign services in industrial exports. Using data from GTAP-Africa, Figure 18 illustrates the proportion of services value-added embedded in industries' exports for Tanzania in 2017.

Figure 18. Services content in exports of Tanzania, by industries



Source: Authors' calculation based on GTAP-Africa

The share of services is not predominant in the primary and secondary sectors. For instance, in agriculture, services account for 2% of total exports, with grain and livestock exports having service shares of 25.2%. In manufacturing, the service share is relatively modest, ranging from 10.6% in food manufacturing to 18.7% in light manufacturing. However, the share of services is notably higher in sectors like Utilities and Construction (22.3%), Transportation (88.6%), Accommodation (86.3%), and Trade (61.1%). These findings align with global trends, where transport is identified as one of the most service-intensive industries (World Bank, 2013²⁰).

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

¹⁹ Gereffi, G., Humphrey, J., Kaplinsky, R. and Sturge, T. (2001). Globalisation, Value Chains and Development. Institute of Development Studies. Bulletin 32.3, 2001. <http://www.ids.ac.uk/files/dmfile/gereffietal323.pdf>

²⁰ World Bank (2013). Services Linkages and the Value Added Contents of Trade. The World Bank. Policy Research Working Paper 6432. http://econ.worldbank.org/external/default/main?pagePK=64210502&theSitePK=469372&piPK=64210520&menuPK=64166093&entityID=000158349_20130501132925

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

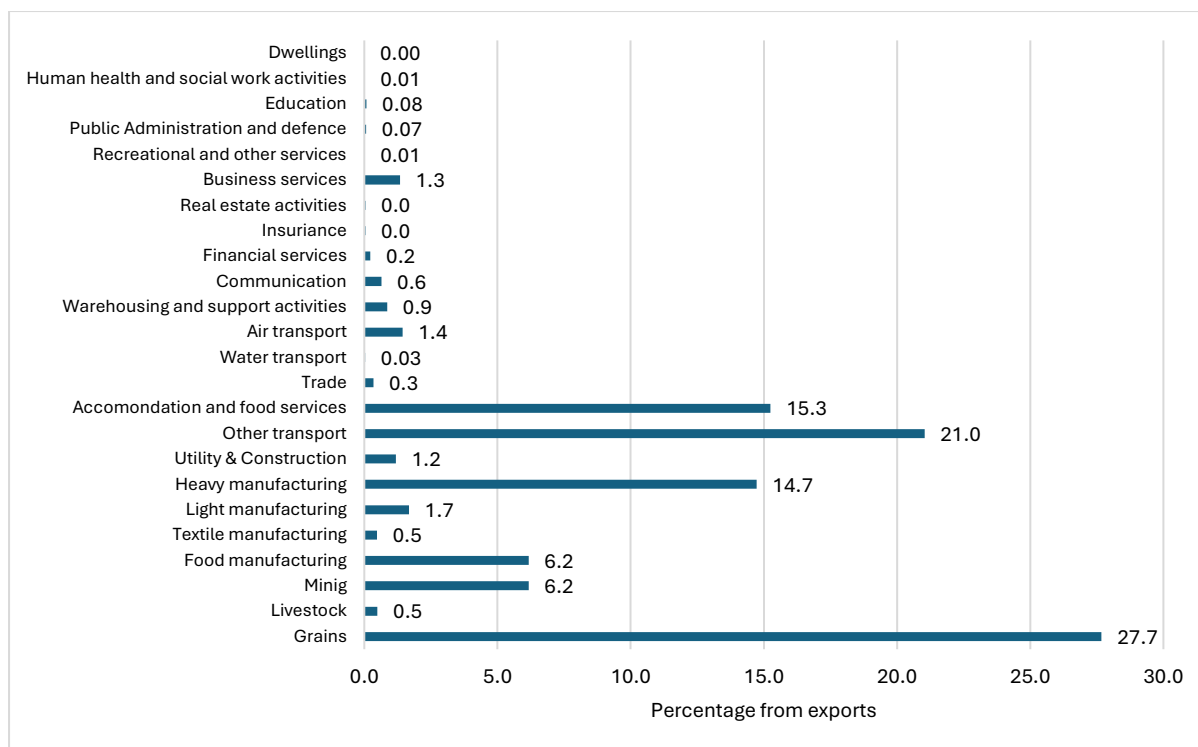
Services have a significant impact on downstream sectors in global value chains (GVCs), as they provide essential support that enhances the efficiency, flexibility, and competitiveness of industries involved in production and trade. Downstream sectors refer to the stages of production and activities that occur after the initial stages of raw material extraction or primary manufacturing. These sectors rely on services to manage logistics, financing, compliance, communication, and innovation, among other factors. Backward linkages (upstream participation²¹) and forward linkages (downstream participation) are included in the analysis.

Figure 19 illustrates the indirect domestic value-added by industry to gross exports. In other words, this shows the value added from Tanzania's sectors that is embodied in the exports of other countries. For example, transport services contribute 22.7% of the total services value added in gross exports. Accommodation and food services account for 15.3% of the services value added in exports. In contrast, other services, which include ICT services, professional services, financial services, and social sector services, represent only 2.8% of the services value added in gross exports.

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

²¹ 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).

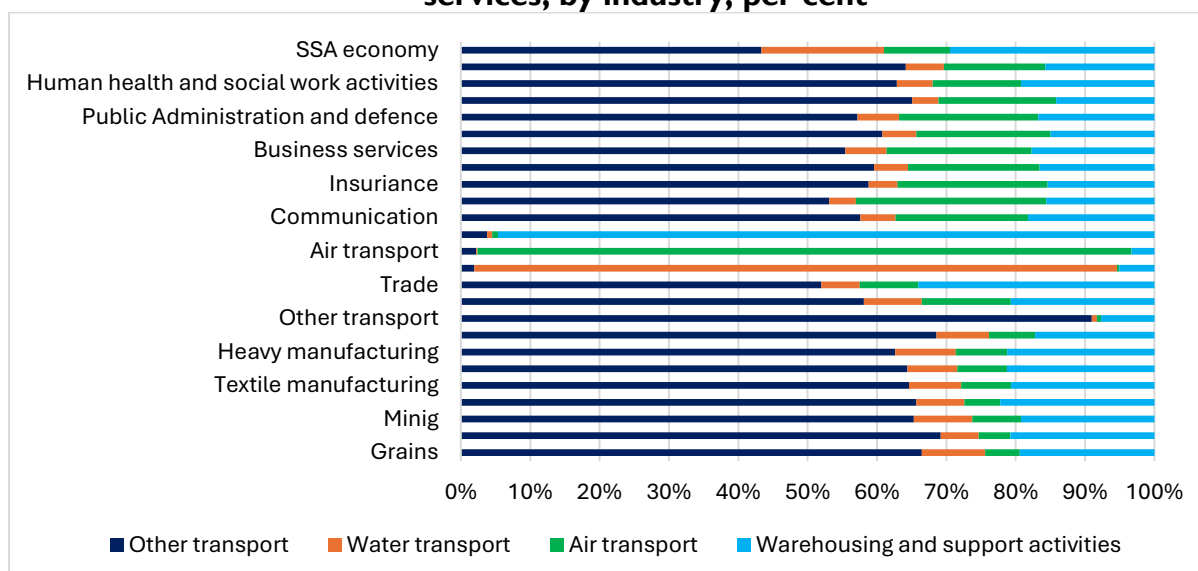
Forward linkages or downstream participation is created between a supplying industry and a purchasing industry that uses the supplier's output as input. It can be understood as the linkages between an exporting economy and an importing economy whose industries use the exports (supply) as inputs to generate 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 (%) 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.



Source: Authors' calculation based on GTAP-Africa

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. Most of the industries in Tanzania rely on transport services (Figure 20).

Figure 20: Composition of indirect domestic value added in exports of transport services, by industry, per cent



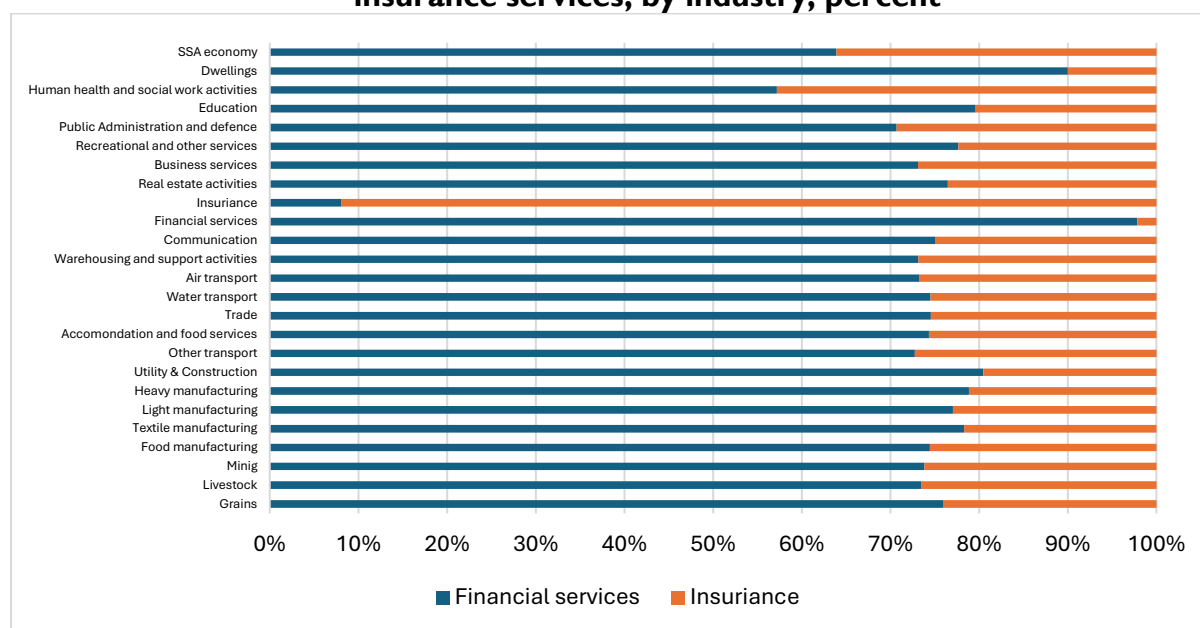
Source: Authors' calculation based on GTAP-Africa

For example, manufacturing and mining rely on land transport to move raw materials like grains or minerals to processing plants. If transport logistics are efficient, the factory can operate smoothly

without disruptions, allowing for 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 lead to production downtimes, higher inventory costs, and missed market opportunities.

Financial services 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

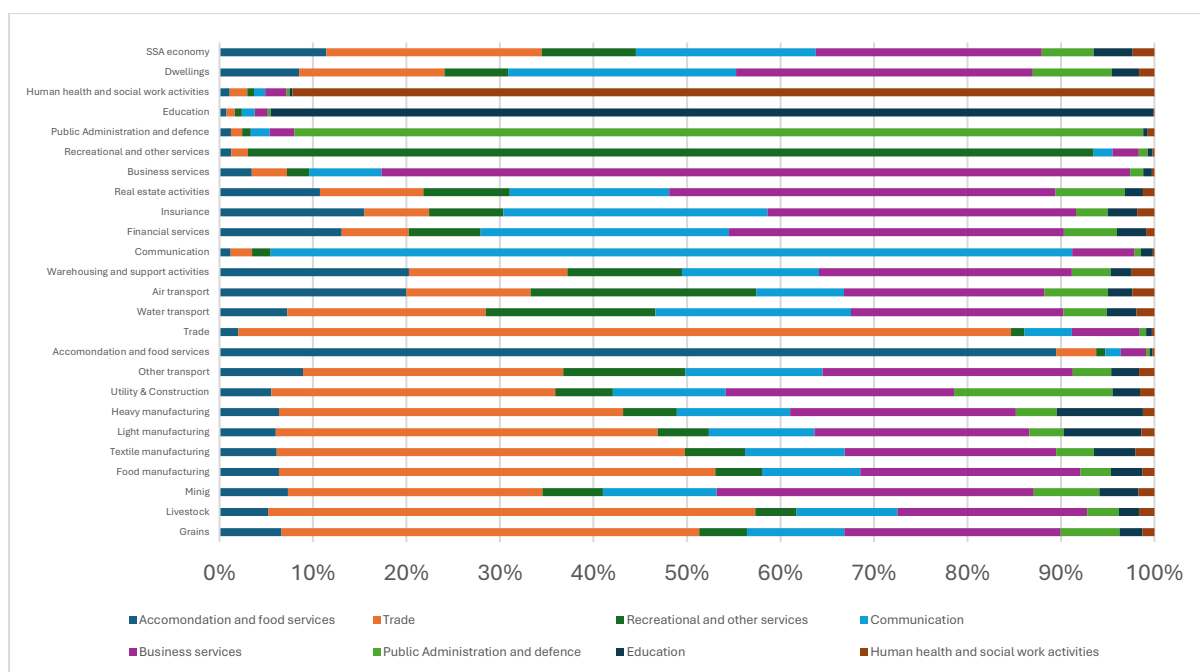


Source: Authors' calculation based on GTAP-Africa

For Sub-Saharan Africa (SSA), the contribution of Tanzania's financial sector services to value-added exports is less than 1% (Figure 21). Of the value added from Tanzania's financial services, 83% is consumed domestically, while 17% 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 help companies access credit 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

For example, tourism and hospitality services can stimulate demand in downstream industries, including food and beverage production, local handicrafts, or entertainment services. This demand boosts production in downstream sectors, contributing to economic growth.

Thus, Tanzania remains one of the least integrated countries into GVCs, with its participation primarily driven by forward linkages in value chains. Similarly, the foreign value-added content of exports (backward participation) remains relatively low compared to the domestic value-added content of exports (forward participation). Backward GVC participation accounted for just 1% of GDP in Tanzania, compared to 2.1% across Africa on average and 4.3% in Southern Africa.

6. Conclusions and next steps

This paper provides new 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.

The analysis reveals that domestic services contribute an average of 27.9% to Tanzania's total exports, while foreign services account for 13.7%. This indicates that Tanzania's exports are primarily driven by natural resource-based and agricultural products, which tend to have relatively high domestic value added. In contrast, economies more deeply integrated into production and processing stages of Global Value Chains (GVCs) often rely heavily on imported intermediate inputs, resulting in a lower share of domestic value added in their exports. These insights are critical for policymakers, as they inform the design of strategies aimed at promoting sectors with the greatest potential to enhance domestic production, stimulate trade, and create employment opportunities.

In the next steps, the study aims to split GTAP Africa among the East African Community (Burundi, the Democratic Republic of the Congo, Kenya, Rwanda, Somalia, South Sudan, Uganda, and Tanzania), the Rest of Sub-Saharan Africa (RoSSA), the Rest Other Countries (RoC) and the Rest of the World (RoW).