SERVICES AND INCLUSIVE INDUSTRIALISATION

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TIPS supports policy development through research and dialogue. Its areas of focus are industrial policy, trade and regional integration, sustainable growth, and a just transition to a sustainable inclusive economy.

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CONTENTS

Executive summary 4
1 Problem statement 6
2 The scope and evolution of the services sector 6
2.1 The nature of service industries in the modern economy 6
2.2 The evolution of services with industrialisation 8
2.3 Economic statistics and the services 9
2.4 Implications for industrial policy 10
3 The impact of service industries on the economy 12
3.1 Contribution to GDP 12
3.2 Employment 17
3.3 Small business 23
3.4 Exports 25
4 Debates around the role of services in industrial policy 28
4.1 The evolution of the discourse 29
4.2 Bringing the services back into industrial policy 31
4.2.1 Employment and small business 32
4.2.2 Impacts on growth 37
4.2.3 Productivity in industrial policy: Are we asking the right question? 38
4.2.4 Measuring productivity in the services 40
4.2.5 Pay and working conditions 42
5 Conclusions and further research needs 43
5.1 Professional business services 43
5.1.1 Technical support 44
5.1.2 Management support 45
5.2 Human capital development 46
5.3 Cultural services and hospitality 47
5.4 Logistics and retail 48
5.5 Cleaning and security 49
Annexure A. Case studies 50
1 Engineering services 50
1.1 Outcomes 50
1.2 SWOT analysis 53
1.3 Conclusions/recommendations 53
2 Freight transport 54
References 56

ABBREVIATIONS

CESA	Consulting Engineers South Africa
GDP	Gross Domestic Project
ICT	Information and Communications Technology
IZA	Institute for the Study of Labour
R&D	Research and Development
SET	Science, Engineering and Technology
US	United States

EXECUTIVE SUMMARY

Industrialisation cannot take off without adequate services such as logistics, engineering, finance and security, as well as human and social capital development. Moreover, the service sector generates around two thirds of the GDP and employment, and six out of seven jobs for women. An effective industrial policy, then, should incorporate measures to maximise the contribution of the service industries to inclusive industrialisation.

In South Africa, industrial policy faces unique demands, which necessarily shape measures around the services. Historically, industrial policy in East Asia centred on diversifying away from family farming, first into light manufacturing and later into more advanced industries. In South Africa, to be sustainable, it must also help address disastrous levels of inequality and exclusion reflected, among others, in high joblessness; the near-absence of smallholder farming, with a tiny small-business sector by global standards; unusually unequal pay scales and work organisation; and profoundly inequitable access to quality education and infrastructure.

Globally, the service industries have evolved dramatically as industrialisation has progressed. This reality has three main roots.

- First, before industrialisation, households and businesses produced a range of activities and inputs they now contract to independent service providers. Today, separate producers provide many critical functions, including R&D, engineering, design, technologically advanced inputs, marketing and skills development. As these functions have been externalised and commodified, they have emerged as industries, increasingly measured by distinct statistical categories.
- Second, as incomes have risen, households have tended to spend a higher percentage of their income on personal services. To some extent these industries overlap with business services such as legal, accounting, cleaning and security.
- Finally, as societies grow increasingly complex and mobile, investment in human and social capital has become more important. It takes the form of education and healthcare, and cultural work and social protection, which build communities and shape the basic trust that every economy needs to succeed.

As a whole, the share of the services sector in the South African GDP stabilised in the 2010s. It climbed from 65% in 2000 to 69% in 2010, then inched up to 70% over the following decade. Finance, retail, tourism and low-level business services grew rapidly from 2000 to 2010, especially during the commodity boom. They then slowed with the rest of the economy. In contrast, professional services in both the private and public sector proved comparatively resilient. Logistics expanded strongly in both periods. In 2020, the COVID-19 pandemic depression brought a sharp decline in hospitality services and logistics.

As of mid-2020, services accounted for two thirds of formal employment, and almost four fifths of women's formal jobs. Controlling for qualifications, formal services provided pay and conditions equivalent to or better than that found in other sectors. They were, however, heavily dualised, with an extraordinarily high share of professionals but also many poorly paid jobs, especially in the informal sector and domestic work. This dualisation still aligned largely with race and gender.

The professional services in particular had extraordinarily high skill levels. Professional business services plus health and education employed one in five formal workers in South Africa, but over half of all those with a university degree. In contrast, formal manufacturing employed one in seven of all formal workers, but less than a tenth of those with a degree. This largely reflected the externalisation of high-level services to outside suppliers.

The services are relatively hospitable to small business because some industries have low capital requirements. In the 2010s, around 60% of all small formal employers were engaged in services.

Around half were in retail, with well over a tenth in professional business services. The services were most important for self-employed people in the formal sector. Some 85% of this group provided services rather than goods. A third were business professionals, and one in seven worked in logistics.

The international statistical system has not kept up with the rapid growth in trade in services over the past 30 years or so. That has led to significant understatement of the total value and limited information on destinations. According to Reserve Bank data, South African services exports as a whole climbed an average of 10% a year in constant rand terms from 1994 to 2019. They remained stable at around 16% of total exports, despite a few higher spikes. In 2020, as foreign travel ground to a halt during the pandemic, the value of reported services exports plummeted by 40%. The bulk of services exports comprised personal and business travel, although other activities (excluding logistics) climbed from a fifth of the total in 1994 to a third in 2019. A consistent although highly variable surplus in personal and business travel was more than offset by the deficit in logistics and business services.

Given the dominance of the service industries in the economy, employment and innovation in virtually all modern economies, it seems logical for industrial policy to optimise their contribution to inclusive industrialisation. Many industrial-policy proponents have, however, defended a narrow focus on manufacturing. (See for instance ECA 2016:31; Rocha 2018; Andreoni et al., 2021:3) This approach effectively holds that successful industrial policy has to replicate the changes in production structure and trade associated with rapid economic growth and rising living standards in the global North from the late 18th Century and East Asia from the mid-20th Century. From the 1960s, this view also drew on academic studies that claimed manufacturing is inherently more productive and able to generate decent work than the services.

In the event, since 2000, the earliest fairly comprehensive data, the services have generated virtually all employment in every region of the world, even those that have seen rapid growth in employment. In contrast, even when manufacturing increased its share in GDP, its share in global employment shrank. These trends reflected the combination of relatively rapid growth in demand for the services industries with their substantial labour intensity.

That fact does not contradict the unique role of manufacturing in providing capital and consumer goods and upgrading technology. Rather, it indicates the growing importance of other sectors and smaller businesses for more inclusive growth. It means industrial policy has to adapt to complex modern economies, rather than relying on state support for Fordist industrial and infrastructure projects along the lines of the New Deal and Soviet planning in the 1930s.

The service industries' potential for growing employment and small businesses is particularly important for South Africa. The long history of dispossession and exclusion before the transition to democracy effectively destroyed a range of economic opportunities for black people, especially from self-employment. It entrenched profound asymmetries in business support systems, education and social relationships. As a result, inclusive growth is out of reach unless the related services are reconstructed.

As with the rest of the economy, facilitating developmental growth in the service industries requires both targeted measures and management of trade-offs. That in turn necessitates more in-depth analysis of opportunities, constraints and risks. The final section of this paper outlines the implications for five major subsectors of the services: professional business services; human capital development; cultural services and hospitality; logistics and retail; and cleaning and security. The aim is to provide a broad framework for further research and practical policy initiatives. To that end, for each industry the paper summarises the potential contribution to industrial policy as well as some core strengths and weaknesses.

1 PROBLEM STATEMENT

Industrialisation cannot take off without adequate services such as logistics, engineering, finance and security, as well as human and social capital development. Moreover, the service sector generates around two thirds of the GDP and employment, and six out of seven jobs for women. An effective industrial policy, then, should incorporate measures to maximise the contribution of the service industries to inclusive industrialisation.

In South Africa, industrial policy faces unique demands, which necessarily shape measures around the services. Historically, industrial policy in East Asia centred on diversifying away from family farming, first into light manufacturing and later into more advanced industries. In South Africa, to be sustainable, it must also help address disastrous levels of inequality and exclusion reflected, among others, in high joblessness; the near-absence of smallholder farming, with a tiny small-business sector by global standards; unusually unequal pay scales and work organisation; and profoundly inequitable access to quality education and infrastructure.

To assist in understanding the role of the service industries in inclusive industrialisation in South Africa, this paper undertakes the following:

- It outlines the factors behind the changing role of services in the economy.
- It maps out the main services industries in South Africa. The analysis points to five broad groups from the standpoint of industrial policy: the professional business services including finance; the services needed for human capital development (mostly education and health); cultural and personal services and hospitality; logistics and retail; and cleaning and security.
- The paper then summarises the main debates around the role of services in industrial policy.
- The concluding section briefly outlines the potential contribution to inclusive industrialisation of the five services subsectors and where they now fall short, as the basis for further research.

The annexure provides case studies of engineering and logistics.

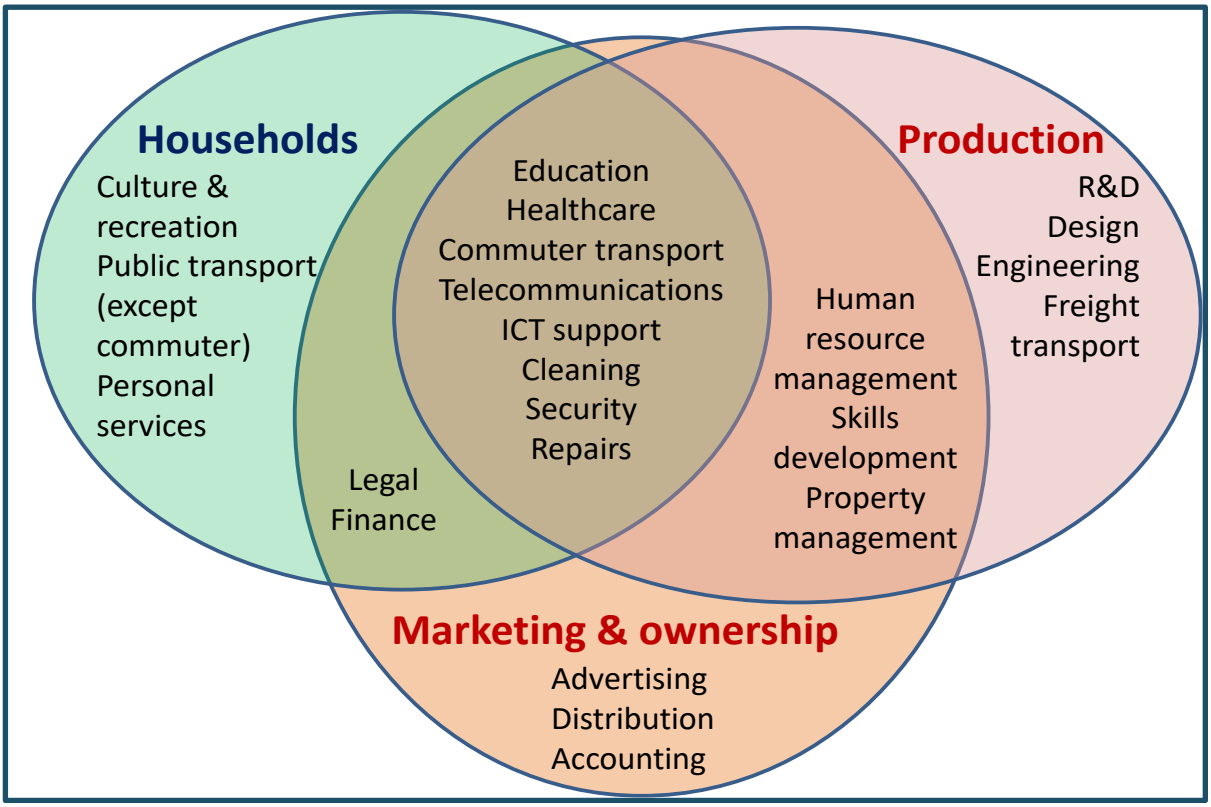
2 THE SCOPE AND EVOLUTION OF THE SERVICES SECTOR

This section defines the scope of the services sector. It then reviews the emergence of service industries as independent from goods production as industrialisation has matured, and the associated challenges for statistical systems. From this standpoint, the dominance of service industries in modern economies largely reflects the commodification of activities historically provided internally by households and businesses. At the same time, increasingly complex modern production systems and societies place increasing demands on service activities.

2.1 The nature of service industries in the modern economy

Service industries are defined by the production of intangible goods, such as skills, health or changes in location, rather than material objects. Figure 1 maps out the main services based on whether they supply households or producers (including government). In the case of producers, it distinguishes between support for production and for marketing and managerial control.

Figure 1. Categorisation of services by user (households; goods production; marketing and ownership)



Source: TIPS, based in part on Schettkat, R., and Yocarini, L. 2003. The shift to services: a review of the literature. IZA Discussion Papers No. 964. Institute for the Study of Labour (IZA). Bonn. Accessed at https://www.econstor.eu/bitstream/10419/20200/1/dp964.pdf in June 2022. Pages 14 ff.; Cheng, D. 2013. The development of the service industry in the modern economy: mechanisms and implications for China. In China Finance and Economic Review I.3. Accessed at https://chinafinanceandeconomicreview.springeropen.com/track/pdf/10.1186/2196-5633-1-3.pdf in June 2022. Pages 4 ff.

In standard statistical systems, the services industries are grouped under the tertiary sector. In this classification they encompass the following:

- Retail and wholesale trade.
- Catering and accommodation, which constitute the bulk of tourism.
- Transport and communication for both producers and individuals.
- Financial and other business services, which include professional services (such as engineering, legal, software and property management) as well as cleaning and security.
- Education, childcare, health, security and other community services, which in South Africa are mostly provided by the state, although high-income households often use private suppliers.
- General government administration and defence.
- Other personal services, such as entertainment, gyms and grooming services like hairdressing.

In modern economies, the line between tangible and intangible products is not always hard and fast. For instance, in engineering services, the design of a building's electrical system was historically recorded on paper as well as being embodied in the building itself. Today, it may only be manifested and communicated digitally, leading to temporary and invisible physical changes inside computers. In the case of logistics and construction, the distinction between services and goods production corresponds to the line between the organisational set up, on the one hand, and the physical equipment, infrastructure and buildings involved, on the other. From a policy standpoint, the two aspects entirely condition each other, and policy interventions often require changes in both.

2.2 The evolution of services with industrialisation

Globally, the autonomy and size of the service industries has escalated as industrialisation has progressed. This development has three main roots.

- First, before industrialisation, households and businesses themselves produced a range of activities and inputs that they now contract to outside service providers. Today, many critical functions, including R&D, engineering, design, technologically advanced inputs, marketing, education and skills development, have been externalised and commodified, with separate producers and industries providing them.
- Second, as incomes have risen, households have tended to spend a higher percentage of their income on personal and some business services.
- Finally, as societies grow increasingly complex and mobile, investment in human and social capital has become more important, whether in the form of education and healthcare, or through cultural activities that build communities and shape the basic trust that every economy needs to succeed.

Before industrialisation, production centred on households, which provided the bulk of inputs, design and engineering, marketing and legal services, and investment in human capital (that is, primarily education, skills, housing and healthcare). A century ago, manufacturing occurred mostly outside of the household, but companies still used internal capacity for design and engineering as well as most advanced intermediate inputs and training. Even then, they generally externalised, to the state or to other businesses, the bulk of infrastructure, general education, healthcare and housing. (See Cheng 2013:4; Tregenna 2010). Today, most manufacturers procure all of these inputs principally from outside suppliers.

The nature of reliance on external services varies between the dominant companies in the Global North and those in the Global South. The leading firms in global value chains retain a high degree of control over advanced technologies, design and marketing strategies, even if they contract out many of the activities required for actual implementation. They often supply these services to contractors in the Global South that undertake the actual manufacturing of final products and some intermediate inputs.

The following table provides a (stylised) representation of the externalisation of goods and services by manufacturing producers from the pre-industrial period through traditional manufacturing ("Fordist") production, to modern global value chains. It illustrates the gradual shift of key functions from manufacturing companies themselves to outside providers.

Table 1. Schematic representation of division of labour between manufacturing producers and external suppliers over time

			Modern globalisation	
Product/input	**Pre-industrial**	**Fordist**	**Global North**	**Global South**
Consumer goods	Internal	Internal	Largely external	Internal
Capital goods and technologically advanced inputs	Internal	Internal	Largely internal for capital goods	External
R&D, engineering, design	Internal	Internal	Largely internal	Largely external
Marketing and legal	Internal	Largely internal	Largely external	Largely external
Other semi-manufactured inputs	Largely internal	Largely internal	Largely external	Largely external

Product/input	Pre-industrial	Fordist	Modern globalisation	
			Global North	Global South
Production skills	Internal	Largely internal	Largely external	Largely external
Raw materials	Largely internal	Largely external	Largely external	Largely external
Worker education, healthcare and housing	Largely internal	Largely external	External	External
Energy	Internal	Largely external	Largely external	Largely external
Communications	Largely internal	Largely external	External	External
Transport of inputs and outputs	Largely external	External	External	External
Roads/rail, ports, water	Largely external	External	External	External

2.3 Economic statistics and the services

The evolution of economic statistics has reflected the gradual externalisation and commodification of services. Still, significant shortcomings remain, particularly around the measurement of exports and investment in human and social capital.

The categorisation of economic industries and production phases as well as data collection systems originated primarily to analyse manufacturing as distinct in particular from agriculture. The resulting systems initially provided only highly aggregated information on services. As service industries have increasingly separated out of manufacturing, industrial categories have differentiated them more precisely. (See UN 2008:11; Eurostat 2008:47). Still, three main weaknesses persist.

- When it comes to service exports and to tourism, statistical systems still do not match up to conceptual frameworks. For instance, in theory a service provided through the internet to a foreigner, by a South African working abroad as a subcontractor, or to a foreigner in South Africa counts as an export. In practice, national trade data rarely captures these activities. This situation is discussed in greater detail in Section 3.4.
- Some critical services, including virtually all of the public sector (and consequently most of education, health, social protection and national security), do not charge market prices for their products. As a result, statistics typically extrapolate the value of their outputs from budgets and other indicators of cost. By definition, however, measuring output by inputs makes it virtually impossible to track changes in productivity.[1] (See Griliches 1992:6)
- The concept of value added arose primarily to capture changes in material products, from raw materials to final goods. It is not well suited to measuring the benefits of services, which often take the form of (intangible) improvements in human and social capital. As a result, it systematically undervalues the impact of services in value chains and society. But value added has been a foundational tool in analysing value chains and economic multipliers for industrial policy, as well as in compiling the GDP.

[1] Productivity is defined as the ratio of outputs to inputs, for instance the number of cars produced per worker in a plant. The assumption is that outputs are determined in terms of quantity or through sales. Where the output is valued as a function of inputs, however, the function effectively determines the ratio between outputs and inputs, and consequently "productivity". This approach cannot determine the actual relationship between inputs and the value of outputs to society.

The challenges of adapting economic statistics systems to the services have been central in theoretical arguments about their importance in industrial strategy, which Section 4 outlines. Several authors argue that the services are inherently less able to raise productivity than manufacturing. (See Schettkat, R., and Yocarini, L. 2003:24 ff). These arguments essentially define productivity in ways derived from goods production, which do not adequately capture intangible products. (See Griliches 1992). As a result, they do not adequately measure either the changes in the structure and quality of services over the past 200 years, or the increasing importance of investment in (largely intangible) human and social capital for both the economy and society.

Finally, all economic data for South Africa before 2000 should be treated as estimates. The statistical systems inherited from apartheid excluded the majority of the population and were distorted by efforts to evade sanctions and foreign consumer boycotts. Unless otherwise noted, the analysis in this report relies on estimates by Quantec, which extrapolates them from a variety of government business and labour force surveys.

2.4 Implications for industrial policy

The outsourcing of services by manufacturers has major implications for industrial policy in the Global South.

First, the quality, availability and competitiveness of service providers helps determine the success of strategies to diversify the economy into more advanced production systems. Manufacturing companies depend on an array of services, from engineering, design and logistics to retail, finance and skills development. By extension, effective industrialisation policies cannot focus narrowly on material production and inputs. Instead, they have to identify and remedy shortfalls in key services. That includes services that feed directly into manufacturing, for instance telecommunications, logistics, the provision of industrial sites, and finance. It also encompasses services that are broadly needed to strengthen human and social capital, notably education, healthcare, security, utilities and cultural activities.

Second, the dominant multinationals often control production across global value chains, not through direct ownership or operations, but by dominating technological development and marketing. The concept of global value chains originally arose to explain how companies like Nike and Apple can govern production processes even though they contract out virtually all manufacturing of their goods to independent producers in the Global South. Their power arises primarily from their dominance of the associated services. It works, for instance, through ownership of brands and by extension the standards set for suppliers as well as access to retail outlets; control of technological advances, design and marketing in that context; and coordination of the supply chain, from contracting advanced inputs to final assembly.

These realities mean that the pattern of outsourcing varies substantially between manufacturers in the Global North and the Global South, especially where they participate in global value chains. In the Global North, dominant firms are more likely to outsource technological development and marketing to local suppliers, and maintain close supervision and control. In the South, producers who feed into global value chains typically rely on foreign partners to provide more advanced production services, such as engineering and design, as well as global marketing. For other inputs, such as finance and accounting, legal and advertising, they often turn to local subsidiaries of international companies. This pattern is pronounced in the global value chains for auto, capital equipment, appliances (notably cellphones) and clothing.

Table 2. Main sources of supply for externally produced inputs to manufacturing

PRODUCT/INPUT	GLOBAL NORTH	GLOBAL SOUTH
Final consumer goods	Producers from the global South	n.a.
Advanced capital equipment and inputs	Internal or contracted to specialist firms from Global North	*Foreign owners/suppliers* Producers from the Global North and East Asia
R&D, engineering, design	Specialist firms from Global North Universities and research institutes	*Foreign owners/suppliers* Specialist domestic and foreign firms Universities and research institutes
Marketing and legal	Retail chains; advertising, customer service, legal, accounting, security and property management firms	*Foreign owners/suppliers* Retail chains; advertising, customer service, legal, accounting, security and property management firms
Other semi-manufactures	Outside producers, some from the global South	*Foreign owners/suppliers* Other foreign and domestic suppliers
Production skills	Vocational schools, internal training	Vocational schools, internal training
Raw materials	Domestic and foreign producers	Domestic and foreign producers
Education	Mostly government	Mostly government
Transport of inputs and outputs	Transport companies, with some state-owned rail and ports	Transport companies, with some state-owned rail and ports
Freight, water	State agencies or heavily regulated private suppliers	State agencies or heavily regulated private suppliers
Energy		
Communications		

Finally, the process of externalisation means service industries now exist independently, providing opportunities for value add, employment and exports. As with manufacturing, the different sub-industries within the tertiary sector vary in their technological sophistication, direct and indirect contribution to economic development, and employment conditions.

High-level services require a hugely disproportionate share of highly qualified workers, as discussed in Section 3.2. This poses some tough choices for industrial policy. In particular, engineering, design, education and healthcare are crucial for local and regional socio-economic development. Alternatively, they can prioritise exports to support foreign companies and export earnings. For instance, software producers can form part of global value chains, upgrading marketing and security networks for foreign clients; or they can focus on innovations to meet South African needs. The latter usually brings slower growth and lower returns, at least initially, but may do more to support domestic industrialisation in the long run. Similarly, universities can maximise foreign-exchange earnings by accepting foreign students and writing for international journals, but that inevitably diverts resources from local needs. In practice, some combination of domestic and export markets emerges, but the balance is particularly important when local shortfalls exist, as in South Africa.

The growing importance of the services in the national accounts of virtually every country reflects the changing organisation of value chains. Manufacturing producers have externalised key services while social and household needs have evolved. In South Africa, too, service industries have become increasingly important. That in turns means effective industrial policy interventions need to analyse their actual and potential role in promoting inclusive industrialisation in two ways: through their direct contribution to growth, decent work, small business development and exports; and through indirect support for economic development and competitiveness.

3 THE IMPACT OF SERVICE INDUSTRIES ON THE ECONOMY

This section provides an overview of the available data on the service industries. It aims both to identify key areas for policy support and to analyse key trends. The analysis focuses on the different service industries' contribution to the GDP, employment and small business development. It also looks at exports as far as the (highly imperfect) data permit.

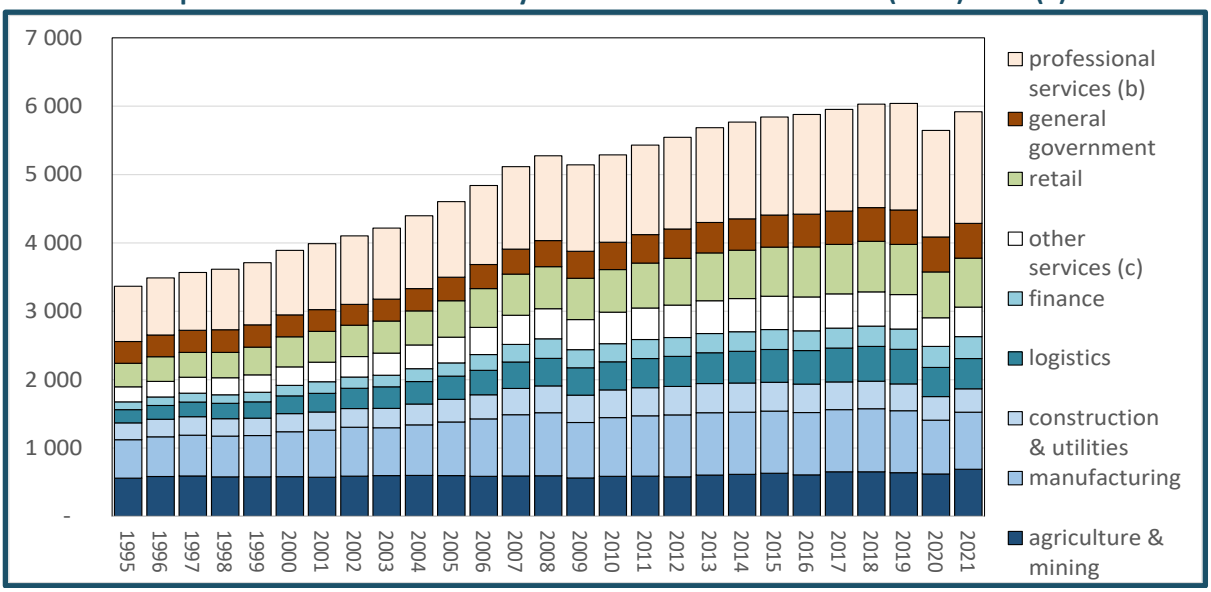
The analysis identifies five services subsectors with divergent socio-economic outcomes. These subsectors are high-level support provided by the professional business services to other producers; human and social capital development (primarily education and health); tourism and cultural services; logistics and retail; and a set of mass employment services dominated by cleaning and security.

3.1 Contribution to GDP

As a whole, the share of the services sector in the GDP climbed from 65% in 2000 to 69% in 2010, then inched up to 70% over the following decade. Finance, retail, tourism and low-level business services grew rapidly from 2000 to 2010, especially during the commodity boom. They then slowed with the rest of the economy. In contrast, professional services in both the private and public sector proved comparatively resilient. Logistics expanded strongly in both periods. In 2020, the COVID-19 pandemic depression brought a particularly sharp decline in hospitality services and logistics.

As Graph 1 shows, in volume terms production in agriculture, mining, manufacturing, construction and utilities grew slowly after 2000, and especially from 2010 to 2020. Before the pandemic began in early 2020, economic growth arose almost exclusively from the tertiary sector. The professional services – education, health and high-end business services – dominated value added in the services, followed by retail and logistics. During the pandemic, logistics, hospitality and cultural activities (mostly covered by "other services") suffered crushing falls. As a result, the services as a whole contracted more sharply than the rest of the economy in 2020. They then rebounded faster, however. In 2021, their contribution to the GDP was 1% below 2019 levels in constant rand, while the rest of the economy was still down by 4%. Professional services accounted for most of the growth in services in 2021, with almost no recovery in tourism.

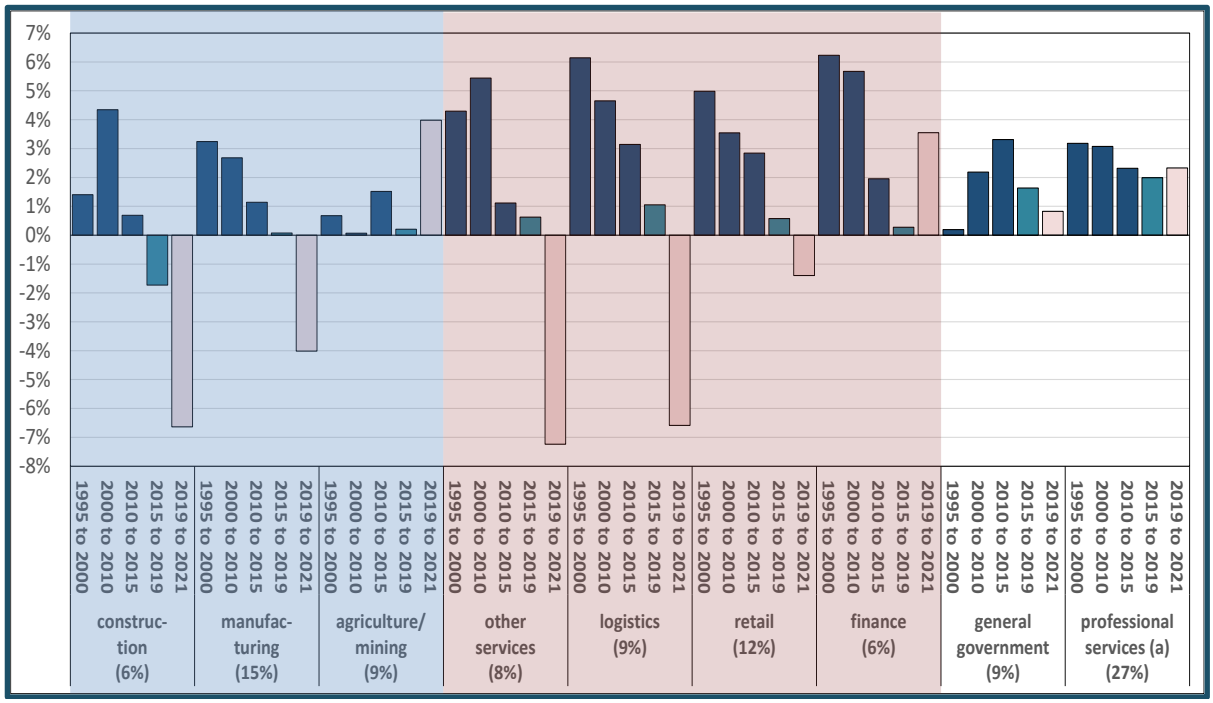
Graph 1. Contribution to GDP by sector in billions of constant (2021) rand (a)



Note: (a) Reflated using implicit deflators rebased to 2021. The purchasing power from mining in particular climbed during the commodity boom although production volumes reportedly remained virtually unchanged. (b) Professional business services (legal, engineering, design, etc.) plus education and health. (c) Mostly cleaning, security, accommodation and catering. *Source:* Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series. Accessed at www.quantec.co.za in October 2022.

Every sector of the economy experienced slower growth in the 2010s than during the commodity boom. The decline was, however, less pronounced in general government and professional services. (Graph 2) As a result, these services became increasingly important for overall growth over the decade. They also recovered relatively strongly from the pandemic compared to the rest of the economy. Their rebound was exceeded only by financial services and agriculture.

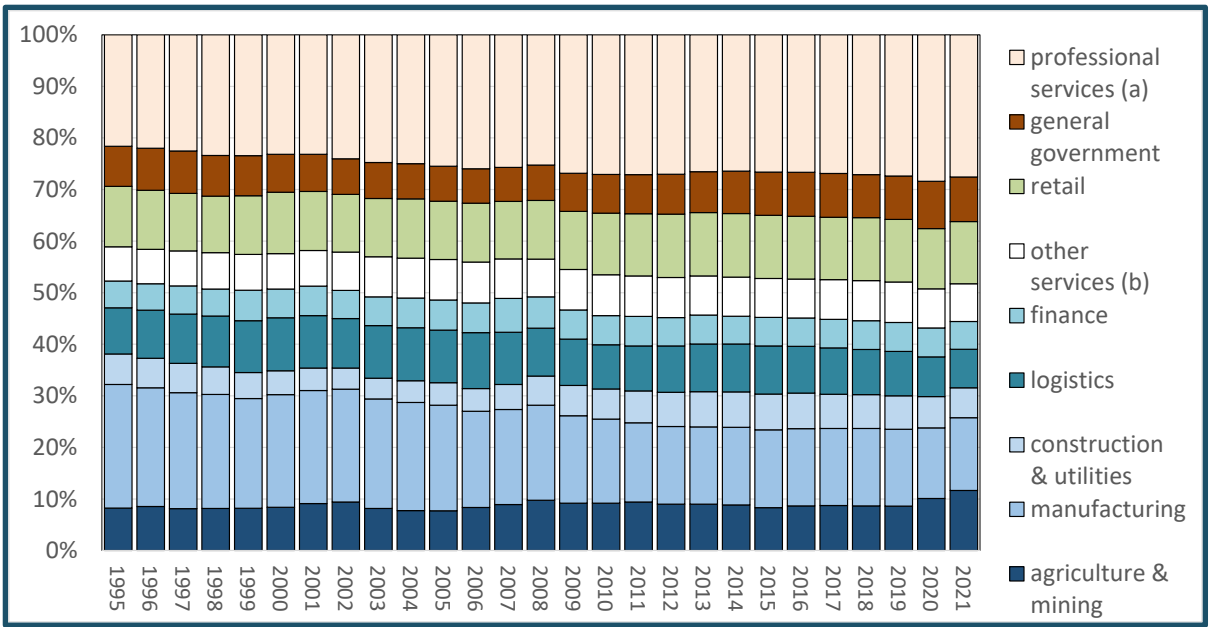
Graph 2. Average annual growth rates by sector and industry for selected periods from 1995 to 2021 (share of GDP in 2019 in parentheses)



Note: (a) Professional business services plus education and healthcare. *Source:* Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series. Accessed at www.quantec.co.za in February 2022.

Public and private professional services accounted for most of the stability of the services sector in the 2010s. According to Quantec estimates, they climbed from 22% of the GDP in 1995 to 27% in 2019 and 28% in 2021. General government rose from 8% to 9% in the same period. In contrast, finance, retail, cleaning and security stagnated. Finance increased from 5% in 1995 to a peak of 6,6% in 2007, but fell below 6% in 2009, during the global financial crisis, and then plateaued at around 5,5%. The share of retail in the GDP rose only marginally, climbing from 11,7% in 1995 to 12,1% in 2021. Other services – mostly security, cleaning, catering and accommodation – fluctuated around 7% of the GDP. Of the service industries, only logistics declined as a share of the GDP in the 2010s, falling from 10% in the 2000s to 9% in the 2010s, and then to 7,5% in 2021 as the pandemic slashed global trade.

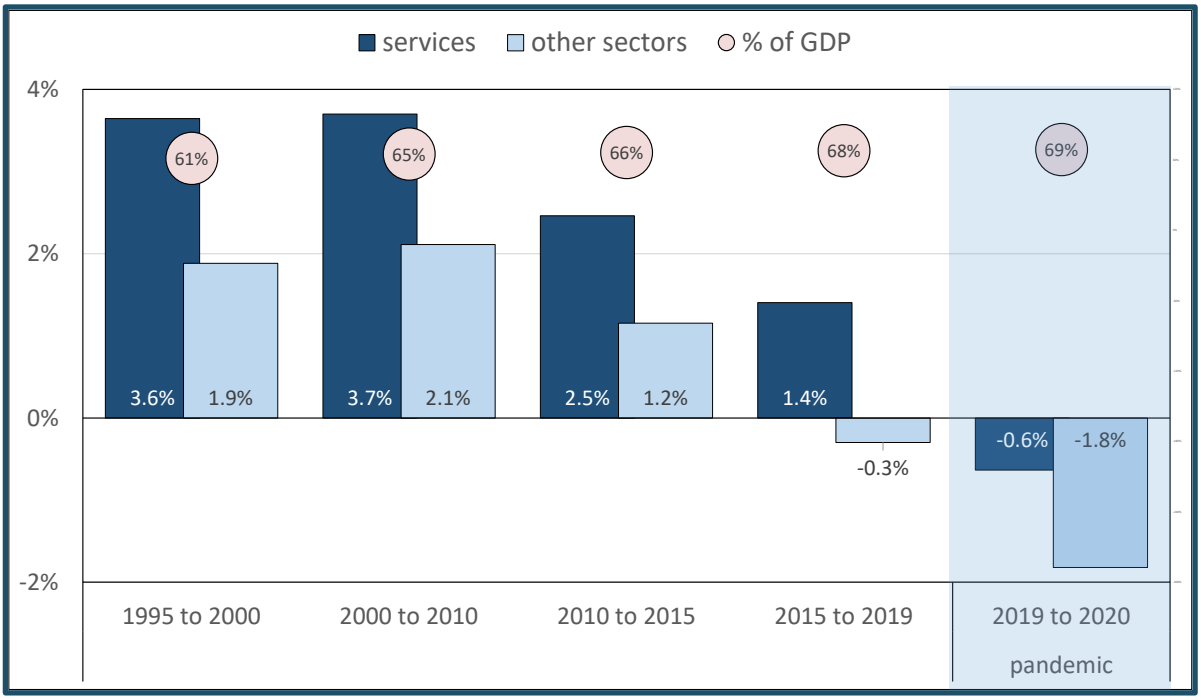
Graph 3. GDP by sector and industry 1995 to 2020 (a)



Note: (a) Calculated using current rand figures. (b) Professional business services (legal, engineering, design, etc.) plus education and health. (c) Mostly cleaning, security, accommodation and catering. *Source:* Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series. Accessed www.quantec.co.za October 2022.

Relatively rapid growth of the services as a whole underpinned their rising share in the GDP. But their increased GDP share after the end of the commodity boom in the mid-2010s did not result from particularly rapid growth. Instead, growth rates for the services fell, but not as rapidly as other sectors. The main reason was the relative resilience of government and professional services. (Graph 4)

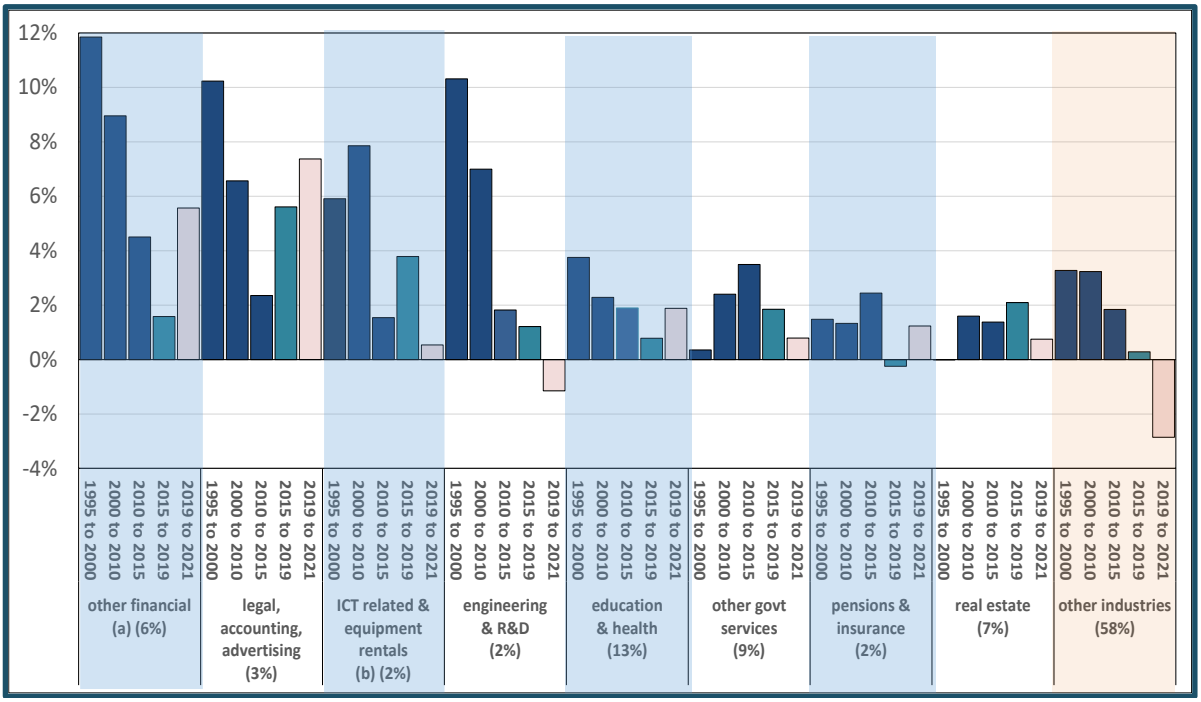
Graph 4. Growth rates of services compared to the rest of the economy for selected periods from 1995 to 2021, with the share of services in the GDP in the final year of each period



Source: Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series. Accessed at www.quantec.co.za in February 2022.

The advanced services – defined as professional and financial services, including government – accounted for just over half of value added in the tertiary sector. Education, healthcare and government services in turn accounted for half the value added in the advanced services. Within this group of industries, growth rates varied substantially, as Graph 5 shows. Both financial intermediation and engineering services saw a sharp decline following the global financial crisis in 2008/9 and the end of the international commodity boom three years later. Other advanced services grew less rapidly before 2010, but showed greater resilience thereafter.

Graph 5. Growth rates in advanced service industries for selected periods from 1995 to 2020 (share of GDP in parentheses)

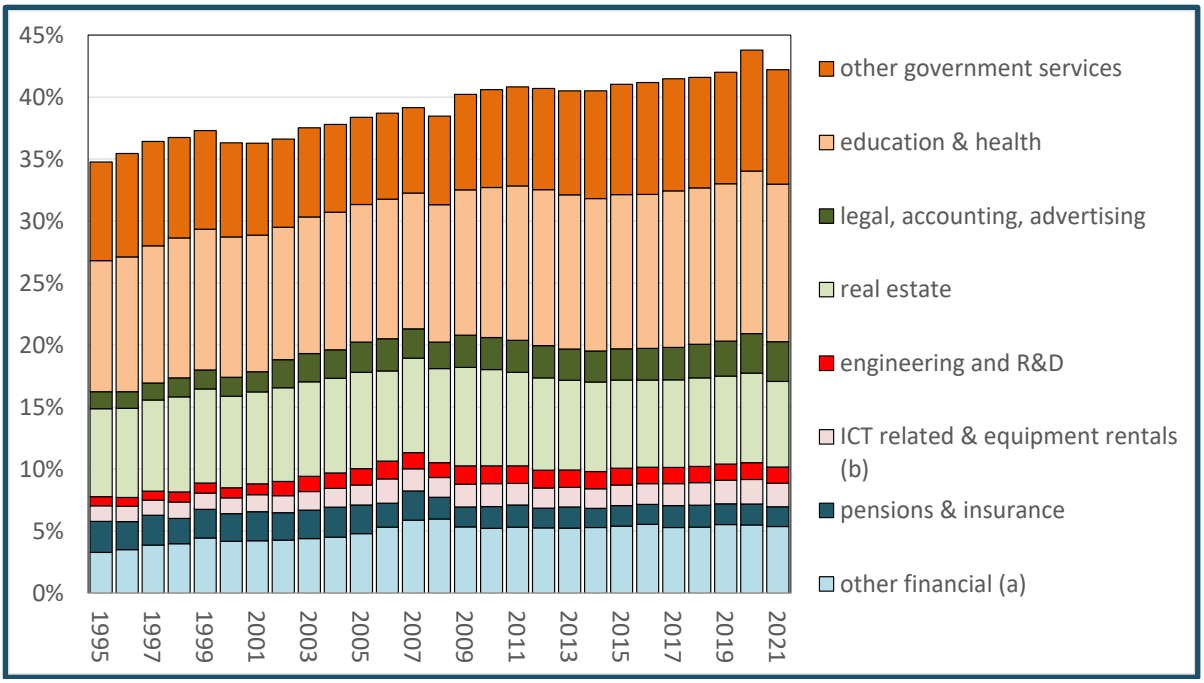


Note: (a) Intermediation and auxiliary services, excluding pensions and insurance. (b) Rental of machinery and equipment plus computer and related services. *Source:* Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series. Accessed at www.quantec.co.za in October 2022.

As a result of the relatively high growth rate in the advanced services as a whole, their value added doubled from R1,2 trillion in 1995 to R2,5 trillion in 2021, in constant 2021 rand. Their share in the GDP rose from 35% in 1995 to 40% in 2019 and 42% in 2021. Education and healthcare accounted for 30% of value added in this grouping. Other government services – mostly police and other security plus infrastructure services, including at municipal level – contributed over 20%. Real estate and finance (both intermediation and savings management) each made up 17%, while other advanced business services, mostly legal, engineering and ICT, added 14%.

Graph 6 shows the evolution in the share of these industries in the total GDP from 1995 to 2020. It underscores the importance of the public sector for the comparative resilience of the professional services after the commodity boom ended.

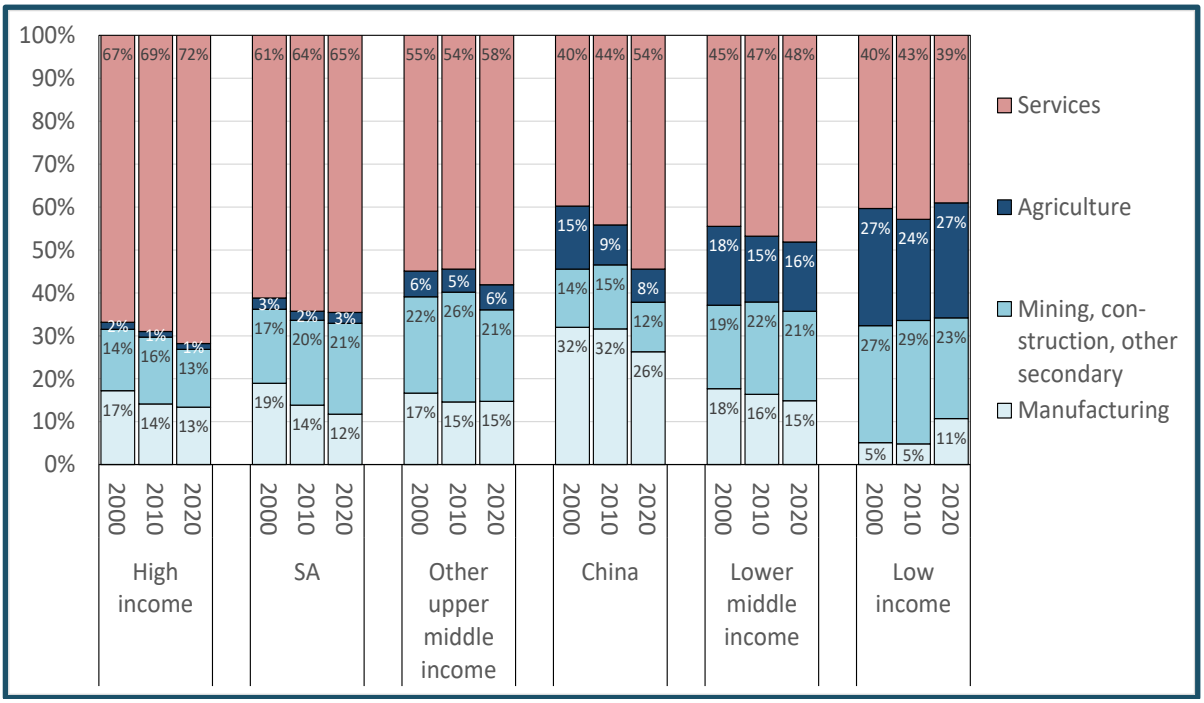
Graph 6. Share of advanced service industries in the GDP, 1995 to 2020



Note: (a) Intermediation and auxiliary services, excluding pensions and insurance. (b) Rental of machinery and equipment plus computer and related services. *Source:* Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series. Accessed at www.quantec.co.za in October 2022.

Compared to other middle-income economies excluding China, services were large in South Africa. As Graph 7 indicates, this reflected in part the extraordinarily low share of agriculture compared to peer economies, as well as a decline in the share of manufacturing, especially metals refining, from 2000. That said, the share of services in South Africa was stable in the 2010s, while it grew rapidly in China and other upper-middle-income economies.

Graph 7. GDP by sector, South Africa compared to other countries by income level in 2000, 2010 and 2020



Source: Calculated from World Bank. World Development Indicators. Interactive database. Accessed at www.worldbank.org in October 2022.

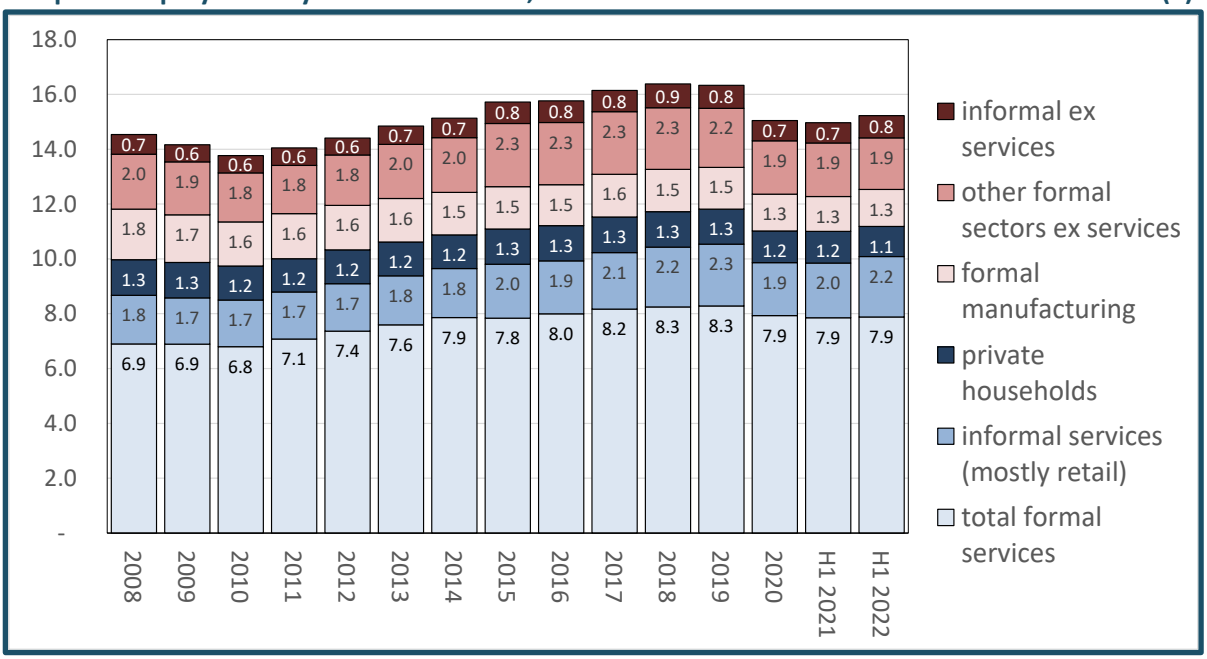
In short, for most of the past two decades services have been the immediate driver of South Africa's GDP growth. When overall economic growth fell from 2011, the main public services and advanced business services expanded faster than the rest of the economy, although they also slowed down compared to the previous decade. As a result, their share in the economy continued to rise.

3.2 Employment

In mid-2020, the service industries generated two thirds of all formal employment, and almost four fifths of women's formal jobs. Controlling for qualifications, formal services provided pay and conditions equivalent to or better than that found in other sectors. They were, however, heavily dualised, with an extraordinarily high share of professionals but also many poorly paid jobs, especially in informal and domestic work. This dualisation still aligned largely with race and gender. White men dominated high value-adding private business services; the social services were equally skilled but more representative and less lucrative; and domestic work, which accounted for a fifth of all women's paid employment, was almost entirely African. The COVID-19 pandemic had little impact on higher-level workers but led to substantial job losses for less skilled employees, especially in hospitality.

Graph 8 shows employment in services compared to other sectors from 2008 – when total employment began to drop during the global financial crisis – to the first half of 2022, after two years of the COVID-19 pandemic. As a percentage of total employment, formal services climbed from 49% in 2010 to 53% in 2019, and 54% in the first half of 2022. In the same period, informal services rose from 12% to 13% of total employment, but climbed sharply to 15% in 2022 as formal jobs remained slow to return. Domestic work dropped from 9% in 2010 to 7% in 2022. Overall, services accounted for over 80% of all growth in formal employment from 2010 to 2019. They contributed almost half of formal job losses during the pandemic, from 2019 to mid-2022.

Graph 8. Employment by sector in millions, 2008 to 2020 and in the first half of 2021 and 2022 (a)

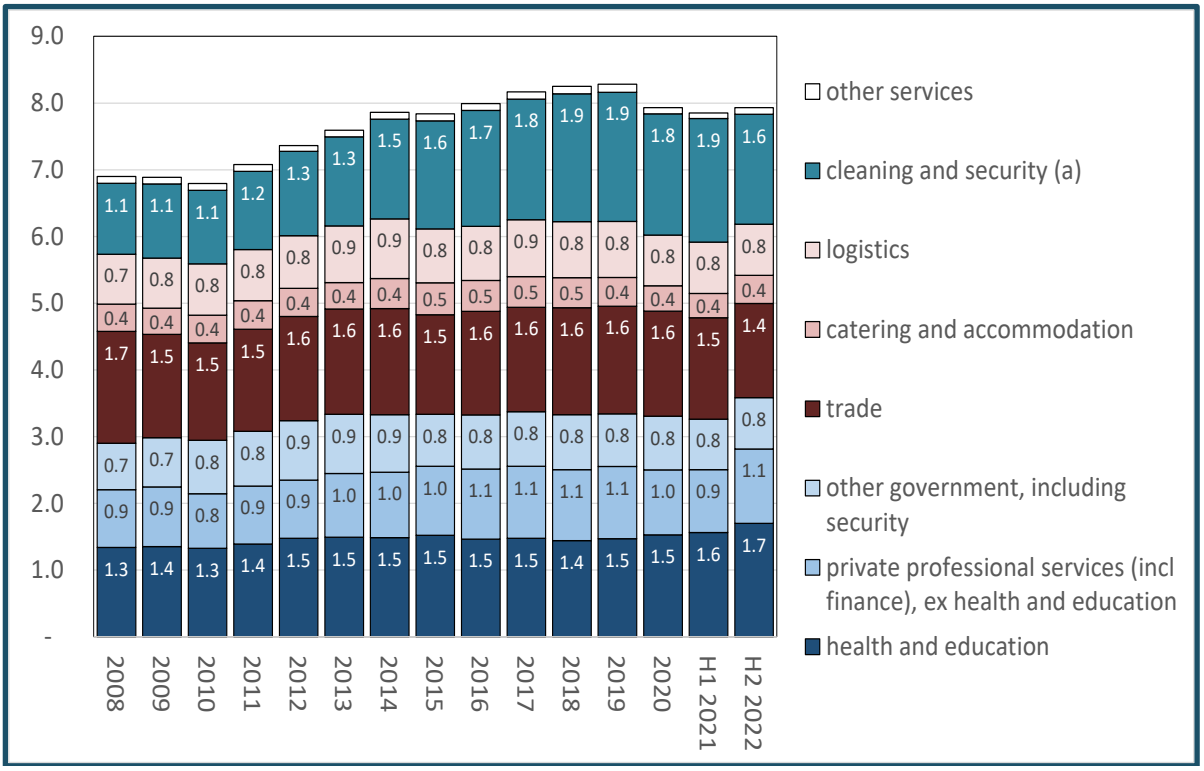


Note: (a) Aged 18 to 64. *Source:* Calculated from Statistics South Africa. Labour Market Dynamics and Quarterly Labour Force Surveys for relevant years. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za.

While cleaning and security work saw the fastest jobs growth in the formal sector in the 2010s, other private services also expanded relatively rapidly. The number of formal cleaning and security workers (excluding domestic work) almost doubled from 2010 to 2019. That equalled a third of all formal jobs created in the period, although cleaning and security made up just over a tenth of total formal employment. Professional workers in the public and private sector gained 400 000 jobs, or a fifth of net new jobs over the decade. As a result, they stabilised at around a quarter of formal employment. In contrast, formal retail, catering and accommodation and logistics, as well as government jobs outside of health and education, created almost no net new positions in the 2010s.

During the pandemic, lower-level services saw large job losses, while professional employment saw a net expansion (as of mid-2022). Cleaning and security lost 290 000 jobs from 2019 to mid-2022 while health and education gained 230 000 and the business professions 35 000. But formal retail lost 200 000 jobs and logistics 75 000. Catering and accommodation lost 70 000 jobs, or one in seven positions, in the first two years of the pandemic, but recovered almost to 2019 levels by mid-2022.

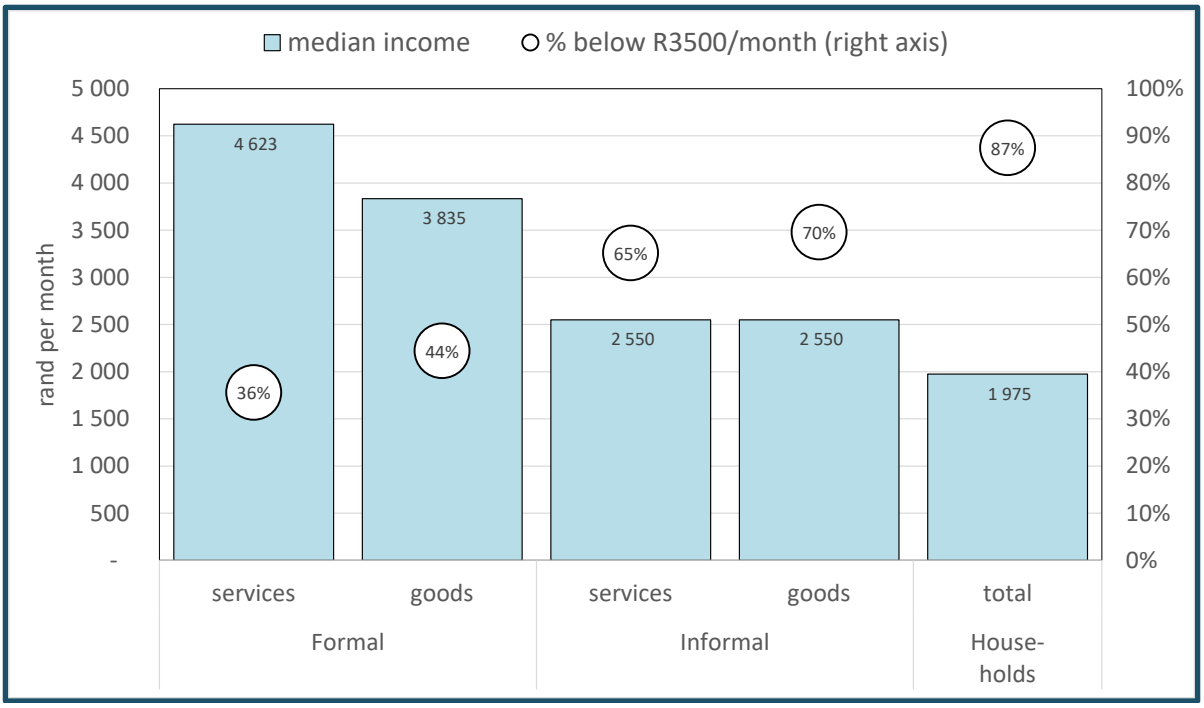
Graph 9. Formal employment in services by industry, 2010 to first half 2021 (a)



Note: (a) Aged 18 to 64. *Source:* Calculated from Statistics South Africa. Labour Market Dynamics and Quarterly Labour Force Surveys for relevant years. Interactive datasets. Accessed Nesstar facility at www.statssa.gov.za.

Incomes in the services were as high or higher than in goods production, with the exception of domestic work. As Graph 10 shows, the median income in formal services in 2019 was 20% higher than in formal goods production. In the informal sector, the median income for workers in services was virtually the same as in goods production.

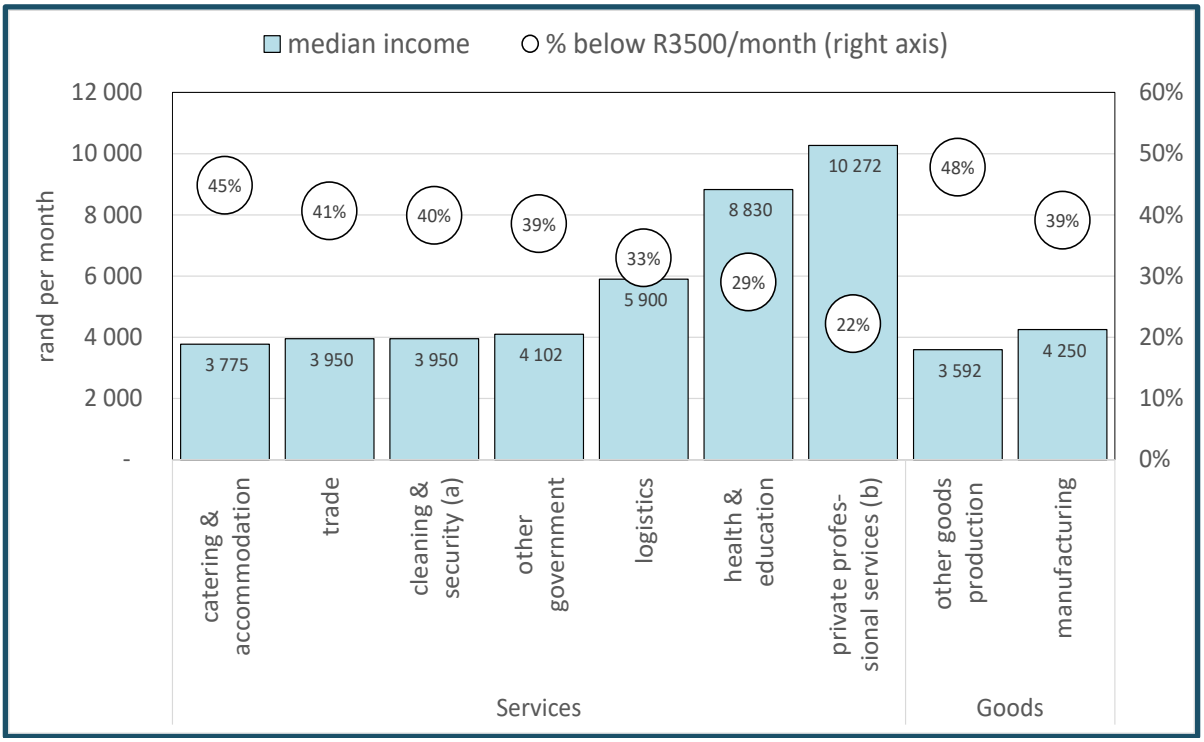
Graph 10. Median monthly income by sector, 2019



Source: Calculated from Statistics South Africa. Labour Market Dynamics 2019. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za.

By industry, higher incomes emerged (predictably) in the professional services. Even in services that relied on lower skilled workers, however, pay was on par with goods production in the formal sector. (Graph 11)

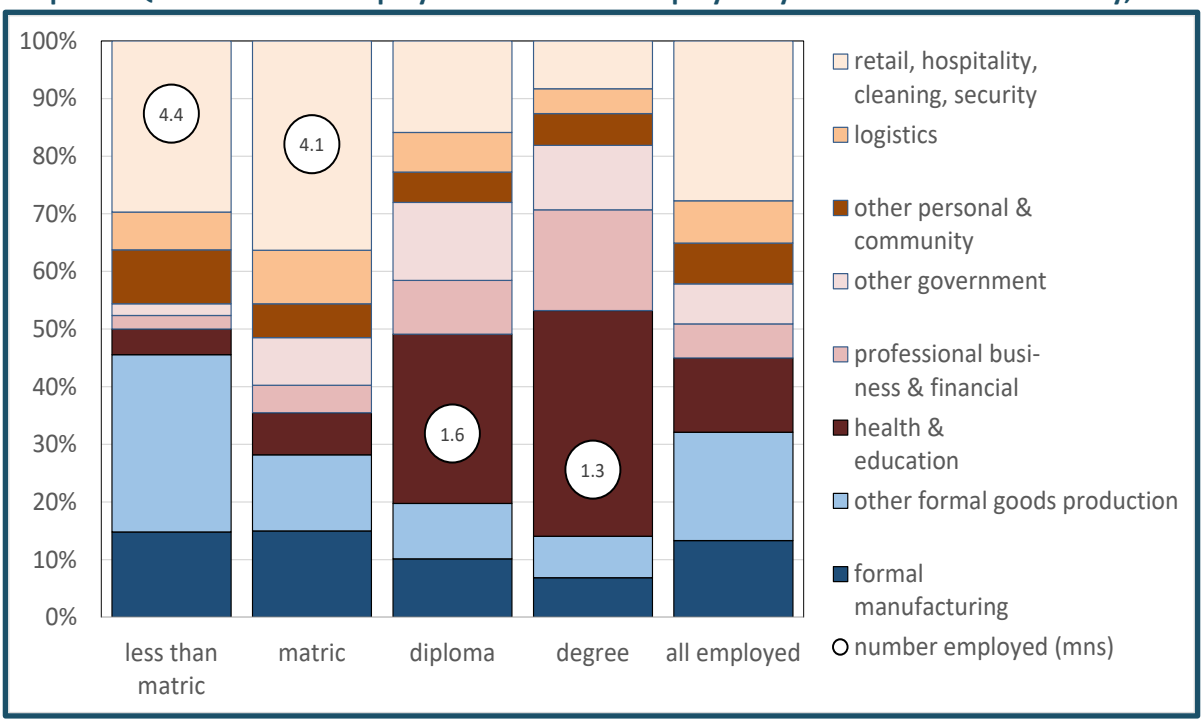
Graph 11. Median monthly income by industry, 2019



Source: Calculated from Statistics South Africa. Labour Market Dynamics 2019. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za.

Relatively high incomes in the professional services reflected extraordinarily high qualifications. Professional business services plus health and education employed one in five formal workers in South Africa, but over half of all those with a university degree. In contrast, formal manufacturing employed one in seven of all formal workers, but less than a tenth of those with a degree. This situation mainly reflected the externalisation of high-level services to outside suppliers, as discussed in Section 2.2.

Graph 12. Qualifications of employees and millions employed by sector and service industry, 2019

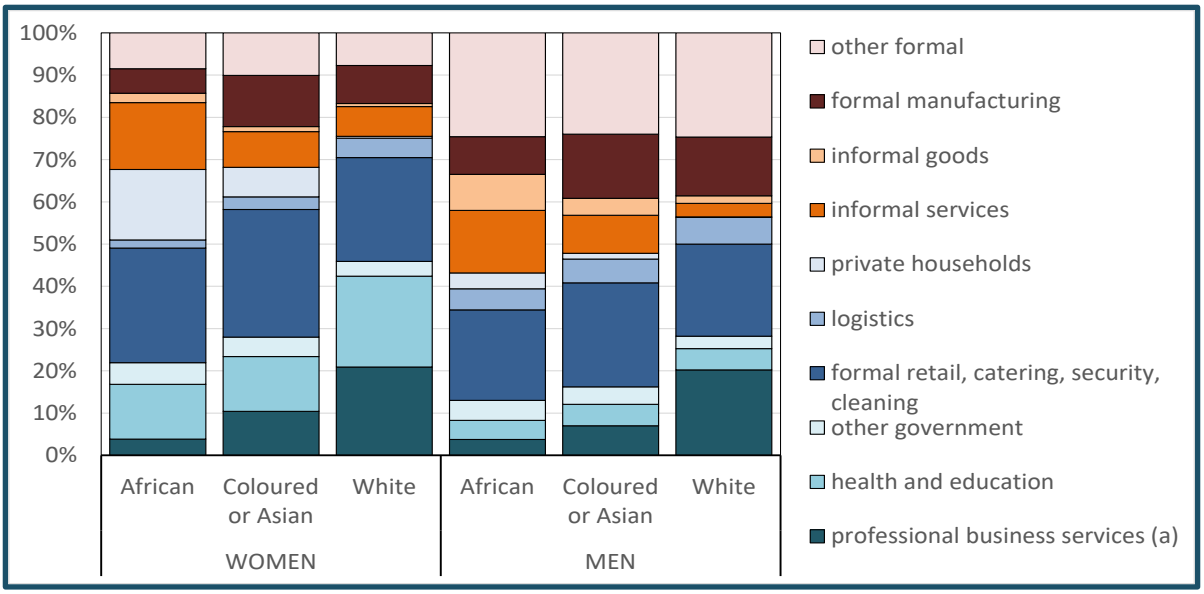


Source: Calculated from Statistics South Africa. Labour Market Dynamics 2019. Interactive dataset. Accessed at Nesstar facility at www.statssa.gov.za.

The services as a whole were more representative than goods production in terms of race and gender. That said, extreme variations emerged between different service industries. Formal professional business services were far less diverse than the rest of the economy.

Women were much more likely to be employed in services than men, and less likely to be in manufacturing, construction or mining. As long as industrial policy downplays support for service industries, it effectively shuts out the vast majority of women workers. In 2019, only 16% of employed women worked outside of a service industry, compared to 34% of men. (Graph 13) Women comprised 80% of paid employment in households, and 70% in health and education; almost half in other services; around a third in manufacturing; and a quarter in other primary and secondary industries. Overall, only around a third of women had paid employment, compared to over two out of five men.

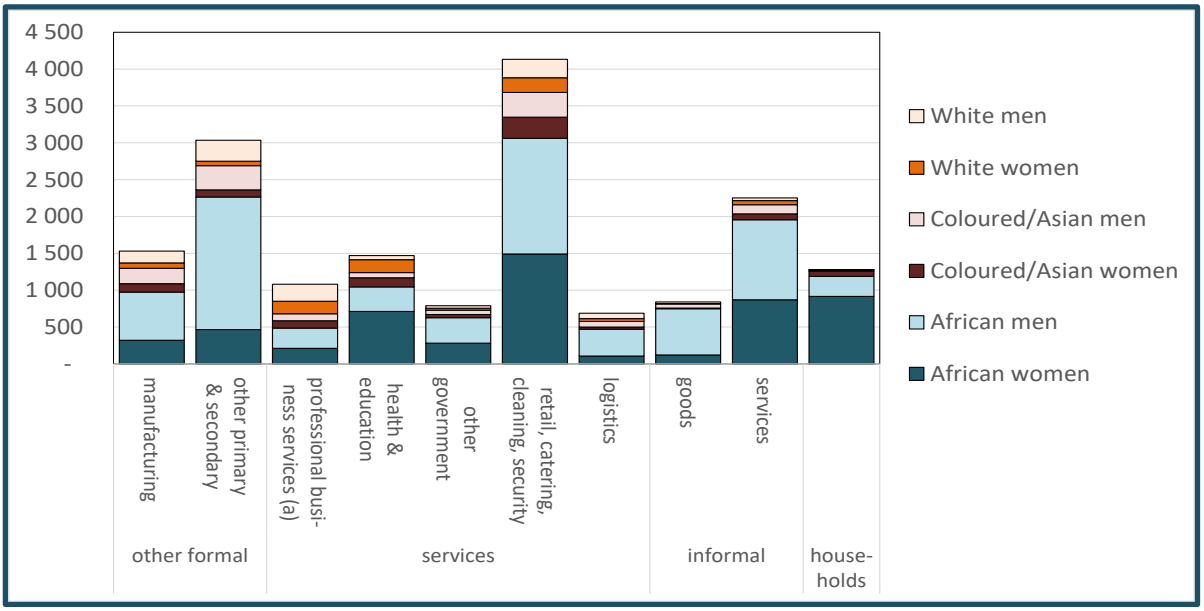
Graph 13. Distribution of employment by race and gender across sectors and industries, 2019



Note: (a) Includes finance. *Source:* Calculated from Statistics South Africa. Labour Market Dynamics 2019. Interactive dataset. Accessed at Nesstar facility at www.statssa.gov.za.

By race, employment in the private business services skewed heavily toward whites. Africans, and especially African women, were more likely to be employed in health and education as well as services with lower qualifications and pay. A fifth of whites worked in professional business services, compared to around a twentieth of Africans. In contrast, the informal sector was almost exclusively African. (Graph 14)

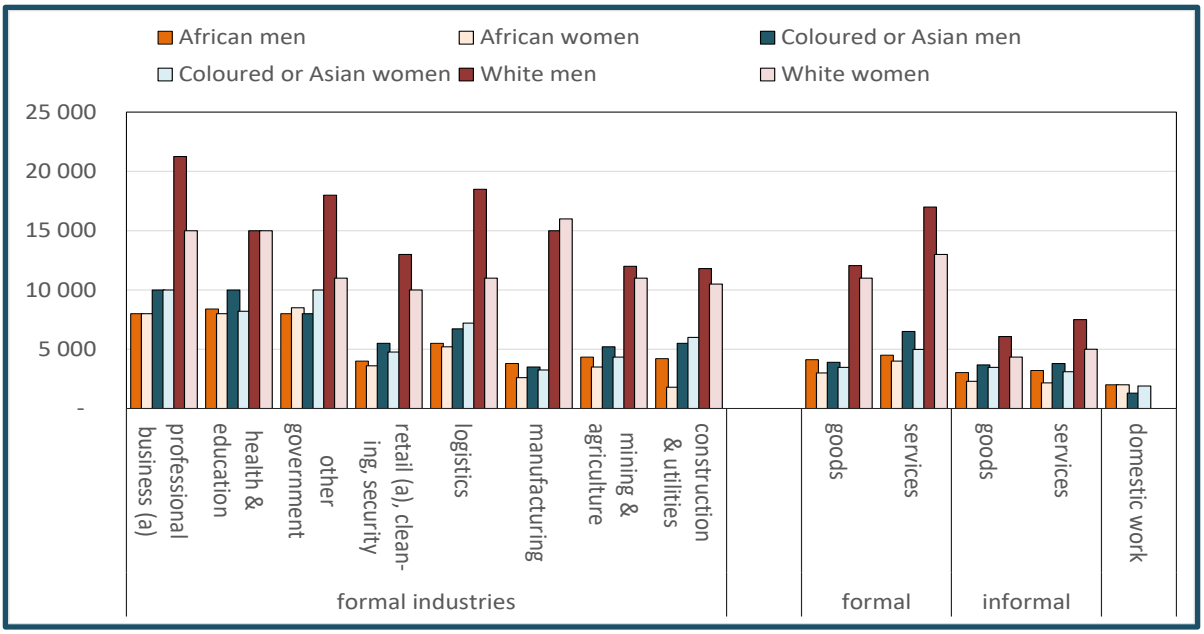
Graph 14. Employment in the services and other industries for women and men, by race, 2019 (in thousands)



Note: (a) Includes finance. *Source:* Calculated from Statistics South Africa. Labour Market Dynamics 2019. Electronic dataset. Downloaded at Nesstar facility at www.statssa.gov.za.

White men earned more than any other group in virtually every sector and industry. In other racial groups, women and men generally earned around the same. In the formal sector, the differential between men and women was larger in goods production, including manufacturing, than in services. In informal work, women were disadvantaged relative to men. Domestic workers – who were overwhelmingly black women – had the lowest median earnings of any industry.

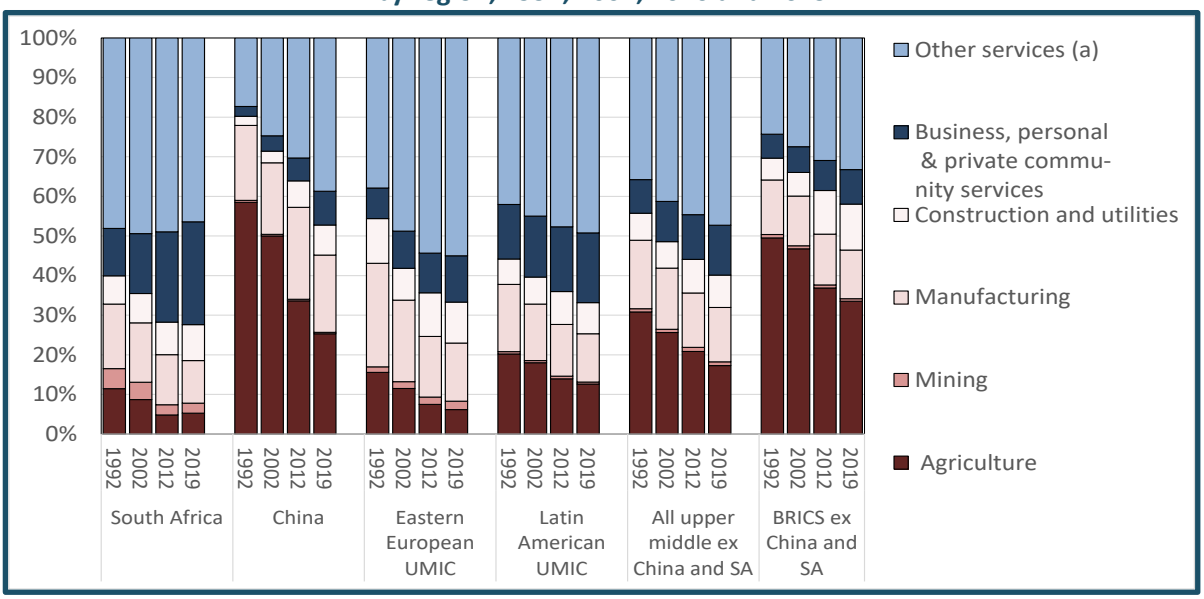
Graph 15. Monthly median income by race, gender, industry and sector, in current rand, 2019



Note: (a) Includes finances. Source: Calculated from Statistics South Africa. Labour Market Dynamics 2019. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za.

As with the GDP, the services accounted for a high share of total employment compared to peer economies. Again, one reason was the unusually low share of agriculture in employment. The suppression of African agriculture before 1994 left South Africa generally with a higher level of joblessness and lower self-employment than in peer economies. In addition, South Africa's reliance on heavy industry, especially metals and coal refineries (including Eskom and Sasol) as well as auto, depressed the share of employment in manufacturing below its proportional contribution to GDP.

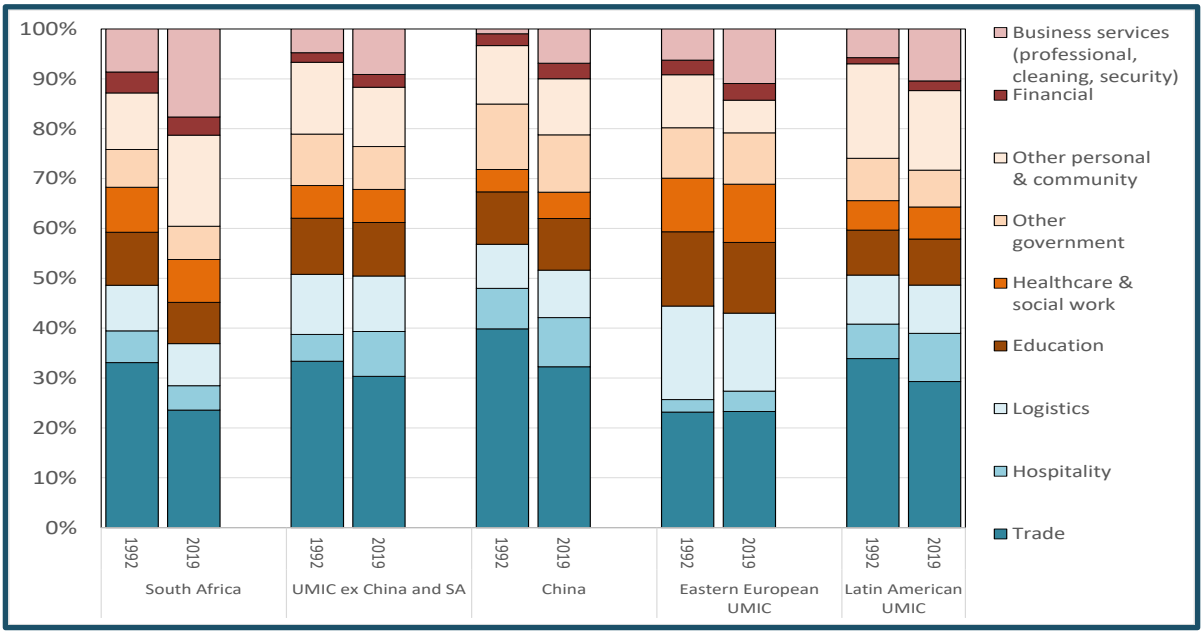
Graph 16. Employment by sector in South Africa and other upper middle-income economies, by region, 1992, 2002, 2010 and 2019



Note: (a) Retail, government and social services, logistics and hospitality. *Source:* Calculated from ILO. ILOStat explorer. Interactive dataset. Employment by sex and economic activity. ILO modelled estimates as of November 2020. Accessed at https://bit.ly/3XfGO2M in February 2022.

The structure of services in South Africa also differed significantly from peer economies, as Graph 17 shows. Business services, which in this dataset includes cleaning and security, provide a larger share in total service jobs than in other upper middle-income countries, as does finance. Trade and hospitality are, in contrast, comparatively small employers.

Graph 17. Share of employment in services by industry in South Africa and other upper middle-income countries, by region, 1992 and 2019



Source: Calculated from ILO. ILOStat explorer. Interactive dataset. Employment by sex and economic activity. ILO modelled estimates as of November 2020. Accessed at https://bit.ly/3GMC65l in February 2022.

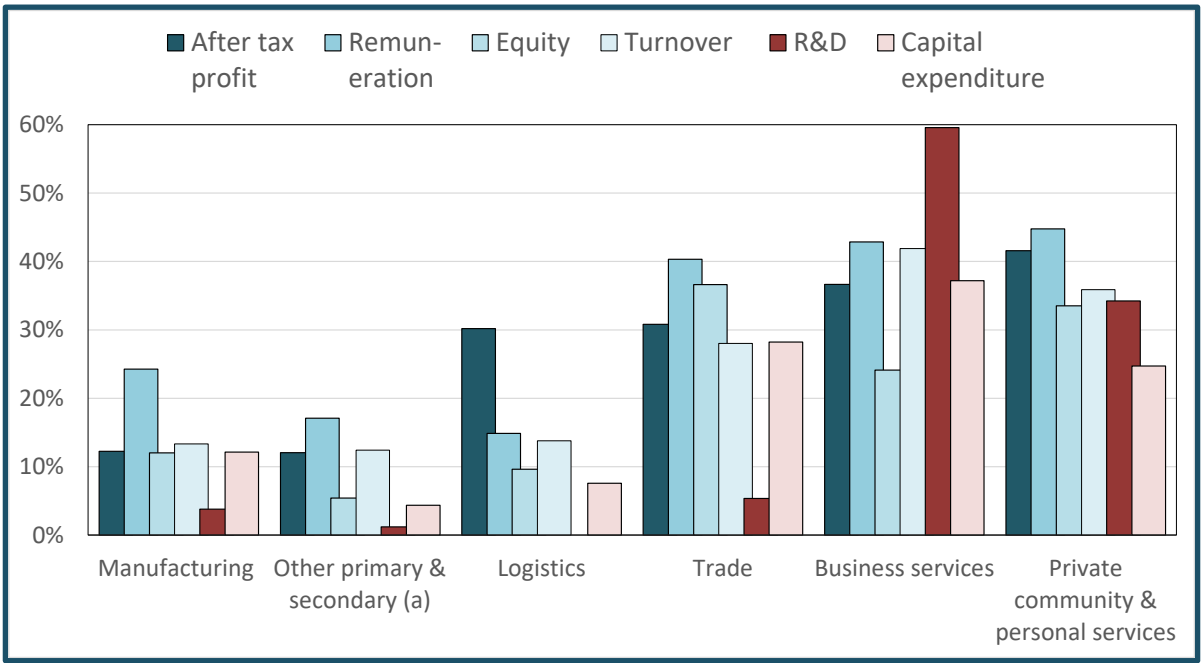
In sum, the services are a critical source of job creation in South Africa, especially for women. The immediate reason is obvious – the services are relatively labour intensive, which means they can generate employment for limited investment. The question for industrial policy has become whether the services have as much of an indirect impact on employment as manufacturing. As discussed in more detail in Section 4.2, in conceptual terms the answer depends largely on how the multiplier is measured. Services look problematic if assessed only in terms of value added to material inputs, as in a standard input-output or value chain analysis. Their multipliers are larger, however, if evaluated against their (largely intangible) impact on the production, design and sales of goods, and on human and social capital. Either way, the impacts vary strongly between the different service industries.

3.3 Small business

The services are relatively hospitable to small business because of their comparatively low capital requirements. In the 2010s, around 60% of all small formal employers were engaged in services. Half were in retail and over a tenth in professional business services. For self-employed people in the formal sector, the services were even more important. Some 85% provided services rather than goods. A third of formal self-employed people were in professional business services, and a seventh in logistics. In contrast, less than 15% of the self-employed produced commodities or manufactures.

As Graph 18 shows, in 2019 small businesses contributed around of third of value added (measured by after-tax profits and remuneration) in the formal services outside of logistics. For formal goods production, the figure was closer to a seventh. Small businesses dominated research and development in the business services industry.

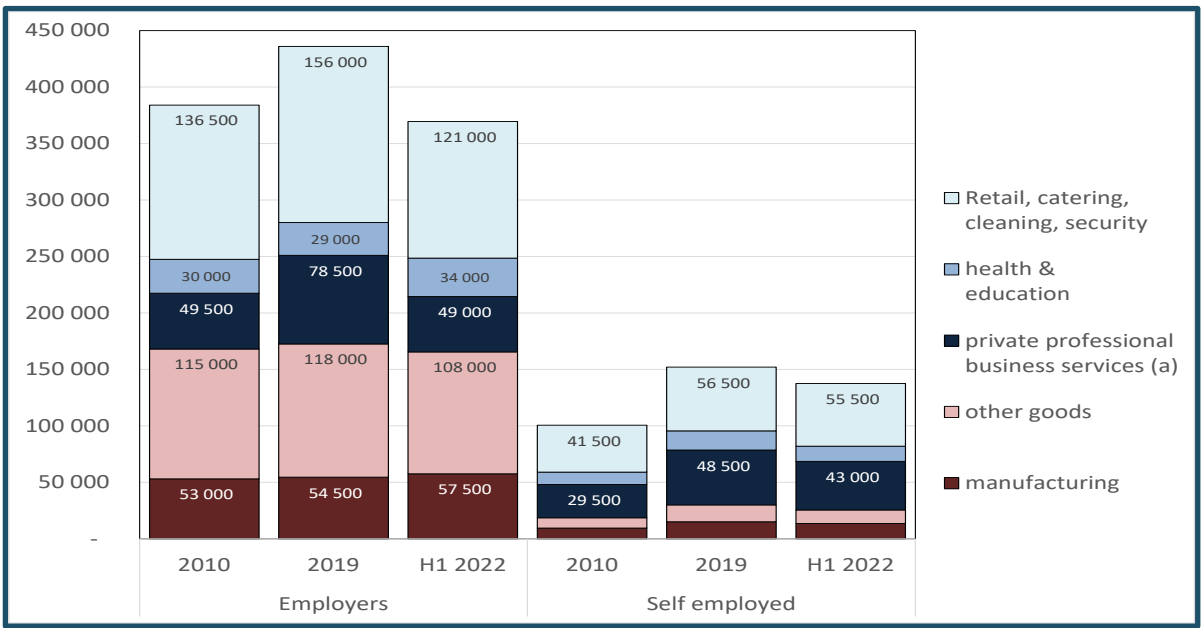
Graph 18. Share of small business (a) in manufacturing and other goods production and by major service industries, 2019



Note: (a) The definition of small business in the Annual Financial Statistics depends on turnover and varies by industry, in line with the relevant legislation. As a result, the category of small business in the aggregation of primary and secondary activities outside of manufacturing combines producers of very different sizes. *Source:* Calculated from Statistics South Africa. Annual Financial Statistics. AFS 2019 revised – Estimates by business size. Excel spreadsheet. Downloaded from www.statssa.gov.za in October 2022.

Graph 19 shows the number of employers and self-employed people by sector and industry in 2010, 2019 and the first half of 2020. It suggests that the pandemic had a particularly harsh impact on small businesses in the services, which saw a greater decline than those in manufacturing and other sectors producing goods.

Graph 19. Employers and self-employed people by sector and industry, 2010, 2019 and first half of 2020



Source: Calculated from Statistics South Africa. Labour Market Dynamics 2019. Interactive datasets. Accessed at Nesstar facility at www.statssa.gov.za.

Businesses providing professional services generally had fewer employees than other small businesses, in part because they often specialised in high-level formal expertise. The average number of employees in these enterprises came to around five in the 2010s, compared to close to 20 in other formal services and in manufacturing.

Overall, the services generally present lower barriers to entry for smaller businesses than industries in the primary and secondary sector. In this context, small providers of professional services, from managerial and marketing inputs to technological support, play a crucial role in promoting more dynamic and efficient production, ensuring flexibility while supporting a diversity of larger enterprises.

3.4 Exports

The statistical system for trade in services globally remains inadequate. (See UN 2011) The gaps emerge in three areas. To start with, from the 1990s service exports diversified rapidly from the traditional categories of transport, travel and the related insurance into areas such as finance, construction, software and design, security and retail. The World Trade Organisation and the United Nations only provide standardised international data for these services from 2005. In addition, for most countries including South Africa, statistics on trade in services do not include destinations.

In an effort to address the conceptual gaps, by 2010 multilateral agencies defined four modes of services exports: cross-border trade, for instance through the internet or for transport; spending by foreigners within a country's border, as with tourism or business travel (grouped under "travel" services); provision of services in a foreign country, for instance through a subsidiary of a South African bank or construction company; and services provided by individuals working as an independent contractor (but not an employee) outside of their home country, for instance a South African engineer in Zambia or a DJ in London.

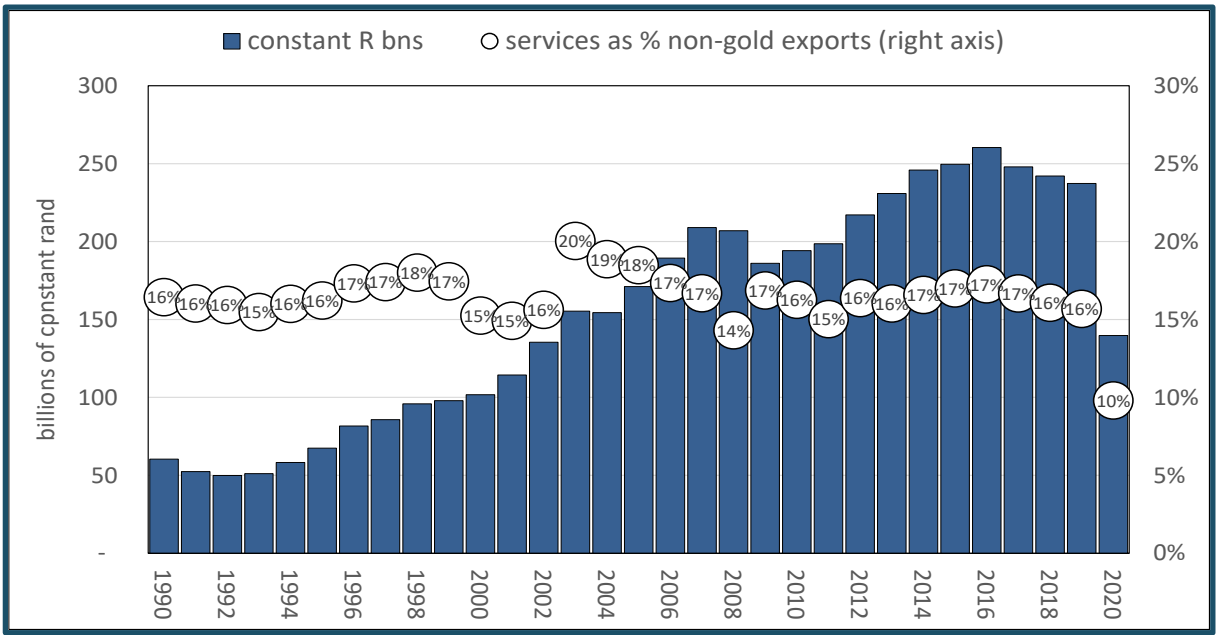
For virtually all of these modes, the data both internationally and for South Africa are inadequate. As a result, the trade data tend to understate the impact of service exports. They may also overstate growth in foreign sales as the data incorporated new kinds of services over time without data to update earlier years.

In part, the understatement of services exports reflects the difficulty of collecting the relevant information, for instance on expenditure by visitors within a country or internet transactions. In part, it results from the failure to realign balance-of-payments data with the four modes defined for trade in services. In particular, income from the provision of services abroad by individuals and companies is recorded as factor income (remuneration, profits or interest payments) rather than as services exports. In the case of financial transactions undertaken for foreigners, the data measure the services provided solely as the associated fees, excluding normal interest payments.

These realities mean that the Reserve Bank trade figures likely capture personal travel and freight transport data fairly well, but understate trade in other services. As a result, the reported trends should be treated with caution.

According to the Reserve Bank data, South African services exports as a whole climbed an average of 10% a year in constant rand terms from 1994 to 2019. Still, they remained around 16% of total exports, with only short-lived increases above that share. In 2020, as foreign travel ground to a halt in the pandemic, the value of reported services exports plummeted by 40%. (Graph 20)

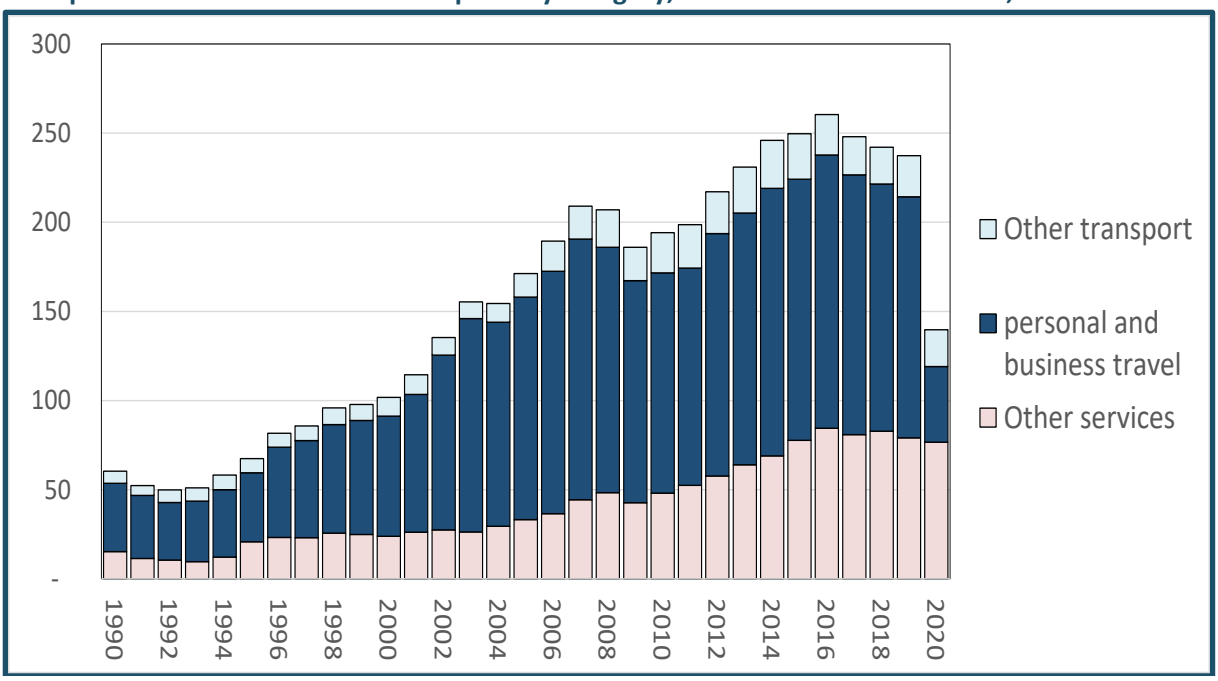
Graph 20. Exports of services in constant (2020) rand (a) and as a percentage of total exports of goods and services, 1990 to 2020



Note: (a) Deflated with CPI. *Source:* Calculated from Reserve Bank. Quarterly Bulletin. Data accessed via Quantec. EasyData. Macroeconomic service. Accessed at www.quantec.co.za in October 2021.

Graph 21 shows the composition of reported exports. The bulk comprised personal and business travel, although other activities (excluding logistics) climbed from a fifth of the total in 1994 to a third in 2019, before the pandemic slashed international travel.

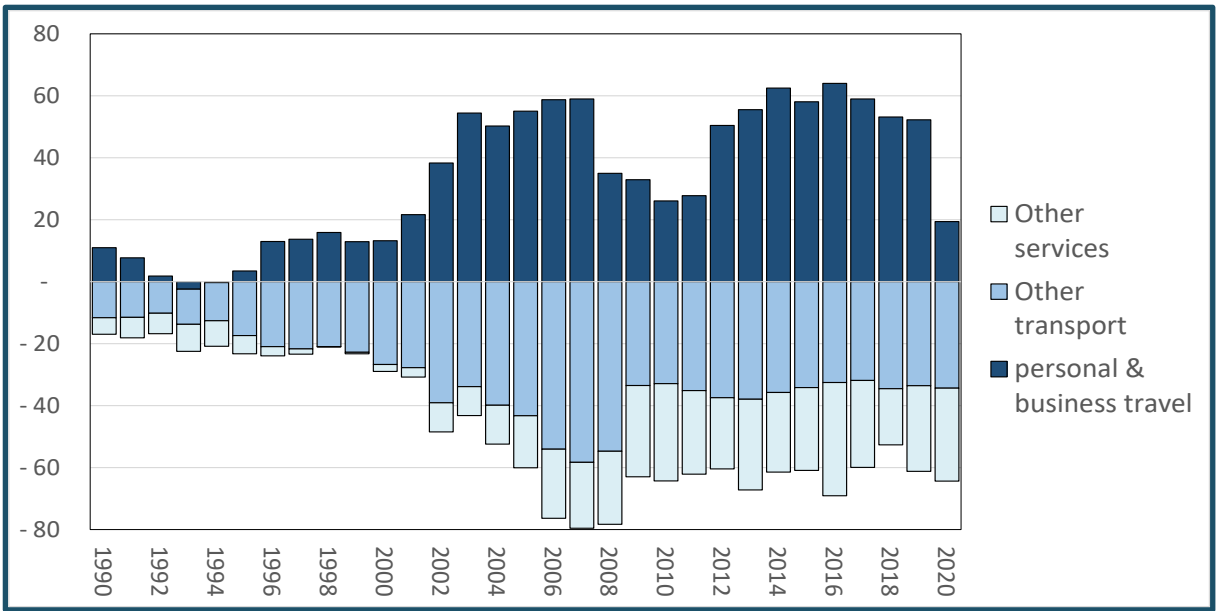
Graph 21. South African services exports by category, in billions of constant rand, 1990 to 2020



Source: Calculated from Reserve Bank. Quarterly Bulletin. Data accessed via Quantec. EasyData. Macroeconomic service. Accessed at www.quantec.co.za in October 2021.

In the services, South Africa reported a positive balance of trade in services only once after 1994, in 2003, although the deficit declined in the 2010s before peaking again during the pandemic. The deficit in logistics and business services offset a consistent although highly variable surplus in personal and business travel.

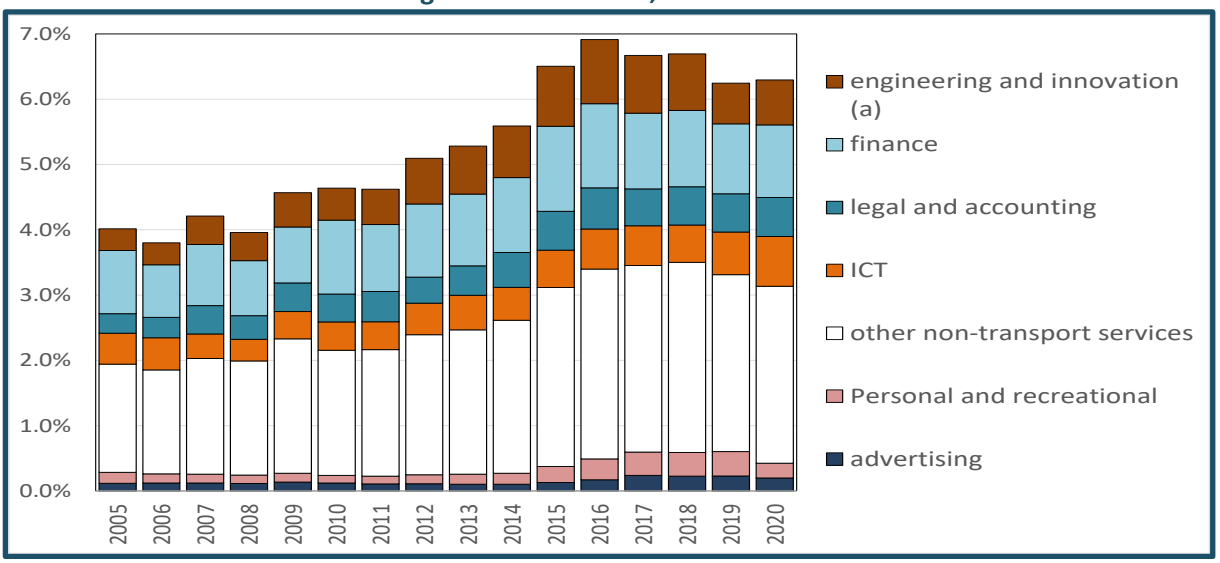
Graph 22. Balance of trade by category of surplus in billions of constant rand, 1990 to 2020



Source: Calculated from Reserve Bank. Quarterly Bulletin. Data accessed via Quantec. EasyData. Macroeconomic service. Accessed at www.quantec.co.za in October 2021.

Details of services exports outside of travel and transport are available only from 2005, and even then the largest category is "other business services" without further definition. Of the specified services, the largest is finance, followed by information and communications technology. As a whole, exports of business services declined with the slowdown in the national and global economy from 2015. In consequence, they dropped from a peak of almost 7% of total foreign sales of goods and services in 2016 to 6% in 2019 and 2020. (Graph 23). As noted, it seems likely that the statistics understate the actual value of exports of these services. As Section 5.3 indicates, the World Bank estimates South African earnings from tourism at 9% of total export revenue. Most of that would come under personal and business travel, but it still suggests some underestimate of exports of personal and recreational services in the Reserve Bank's trade data.

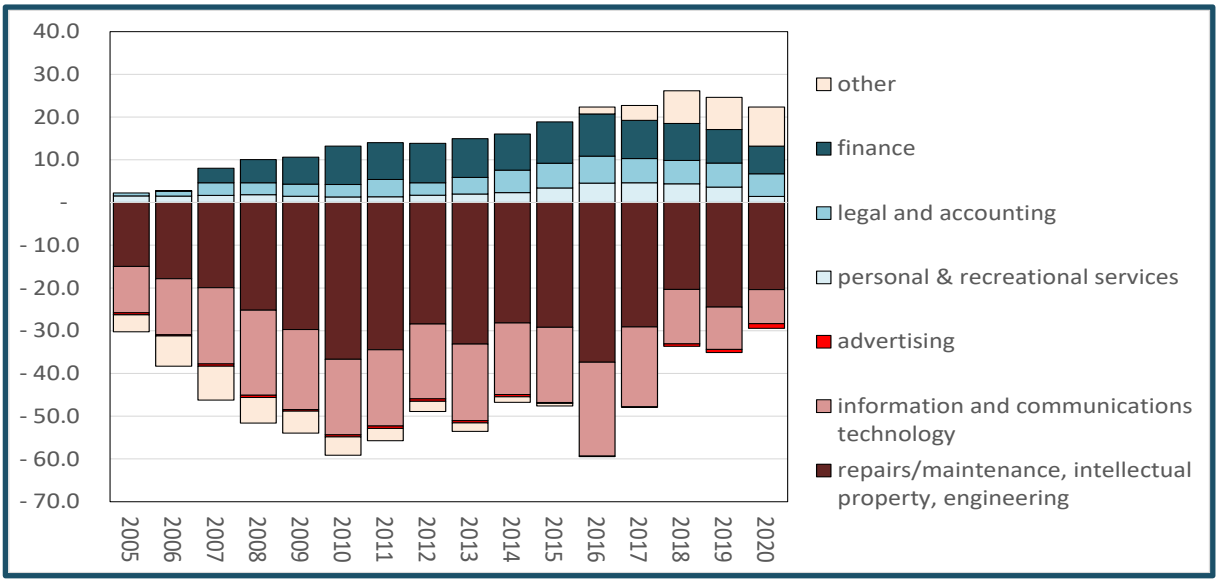
Graph 23. Business services by type as a percentage of total exports of goods and services,1990 to 2020



Notes: (a) Engineering, income from intellectual property, repairs and maintenance. *Source:* Calculated from Reserve Bank. Quarterly Bulletin. Data accessed via Quantec. EasyData. Macroeconomic service. Accessed at www.quantec.co.za in October 2021.

South Africa ran a significant deficit in technology-related services, while recording a modest surplus in financial, legal and accounting services. This situation reflected its position in global value chains, with advanced production still largely dependent on imported technologies.

Graph 24. Balance of trade in business services, 1990 to 2020, in billions of constant rand



Source: Calculated from Reserve Bank. Quarterly Bulletin. Data accessed via Quantec. EasyData. Macroeconomic service. Accessed at www.quantec.co.za in October 2021.

The balance of trade in services points to the technology gaps in South African production as well as the scope for expanding local provision of logistics. That said, the data on business-service exports are poor, particularly when they are provided in the form of skills either in person or digitally. These sales are especially important for self-employed professionals and smaller businesses.

4 DEBATES AROUND THE ROLE OF SERVICES IN INDUSTRIAL POLICY

Given the dominance of the service industries in the economy, employment and innovation in virtually all modern economies, it seems logical for industrial policy to optimise their contribution to inclusive industrialisation. Many industrial-policy proponents have, however, defended a narrow focus on manufacturing. (See for instance ECA 2016:31; Rocha 2018; Andreoni et al., 2021:3) This approach effectively holds that successful industrial policy has to replicate the changes in production structure and trade associated with rapid economic growth and rising living standards in the global North from the late 18th Century and East Asia from the mid-20th Century. From the 1960s, this view also drew on academic studies that claimed manufacturing is inherently more productive and able to generate decent work than the services.

In the event, since 2000, the earliest fairly comprehensive data, the services have generated virtually all employment in every region of the world, even those that have seen rapid growth in employment. That fact does not contradict the unique role of manufacturing in providing capital and consumer goods and upgrading technology. Rather, it indicates the growing importance of other sectors and smaller businesses for more inclusive growth. It means industrial policy has to adapt to complex modern economies, rather than relying on state support for Fordist industrial and infrastructure projects along the lines of the New Deal and Soviet planning in the 1930s.

The service industries' potential for growing employment and small businesses is particularly important for South Africa. The long history of dispossession and exclusion before the transition to democracy effectively destroyed a range of economic opportunities for black people, especially from self-employment. It entrenched profound asymmetries in business support systems, education and

social relationships. As a result, inclusive growth is out of reach unless the related services are reconstructed.

This section first reviews the historic and academic arguments for excluding services from industrial policy. It then explores the relevance of these arguments for inclusive industrialisation in South Africa.

4.1 The evolution of the discourse

Debates around the role of services in industrialisation have evolved over time. (See Delauney, J.-C. and J. Gadrey 1992.) This section outlines their development from early days of industrialisation to the present.

Industrialisation in Europe and the US from the late 18th Century pitted the interests of the emerging manufacturing class against large landowners. Economic policy debates revolved largely around whether the state should change long-standing policies to favour emerging industrial producers, often at the cost of long-established agricultural estates. Areas of contestation included cutting tariffs on imported food to reduce urban wages; freeing up imports of raw materials, especially wool; limiting imports that competed with domestic manufacturing; tolerating the displacement of skilled craft workers by often exploitative mass production; encouraging migration from traditional agricultural estates to industrialising towns; and subsidising technological advances, including by enticing skilled labour and stealing industrial secrets from other countries.

The services barely existed as independent industries in this period, and had very little role in policy debates. Both Adam Smith and Karl Marx defined services narrowly as (a) personal services for the aristocracy and (b) general government spending, which at the time centred on defence, taxation and market regulation. For both authors, the rich effectively paid for these services from surpluses generated in other sectors. Marx considered finance, marketing and accounting in particular to be parasitic props for private control of production, rather than meeting broader social or personal needs.[2]

In the 1930s, the New Deal in the US and Stalinist planning in the then Soviet Union entrenched a new paradigm of industrialisation. In this model, extraordinary growth resulted from massive infrastructure construction and large, mechanised factories that drew on a range of new raw materials (often imported from colonies or semi-colonies) to produce innovative products. These "Fordist" projects employed large numbers of (mostly male) workers. They provided fertile ground for union organisation in the US and Europe, leading to decent pay and conditions. Ultimately, that expanded the market for industrial output.

In this model, industrial policy became associated with powerful state support for huge new factories, power plants and ports, plus the mobilisation of men on a mass scale for the new industries. Policy choices were simpler than today because of the size of the new projects and the reliance of technological advances on mechanisation and chemistry. In South Africa, the 1930s saw vast state investments in Eskom, Transnet and Iscor, combined with trade policies to promote local production of mining and agricultural inputs as well as consumer goods.

[2] In his theory of value, however, Marx did not contend that only goods have value. Rather, as long as a product of labour has both labour and exchange value, it would in his system have value, whether or not it was tangible.

The Fordist industrialisation project generally underplayed government activities outside of direct support for industry. In reality, the role of the state was much wider. It included using sometimes brutal force to maintain low-cost inputs from the Global South (colonies and semi-colonies for Europe and the US, and central Asia and Ukraine for Russia); the modernisation of defence spending, which was crucial for many new technologies; rapid growth in public education, social protection and cultural services; financial regulation; and support for industrial agriculture to release workers for industry. In South Africa, the 1920s and '30s brought a range of measures to force black people to labour in white-owned agriculture and mines, including the destruction of their farms and other businesses and brutal measures against their organisations. At the same time, the colonial government supported "European" standards for white workers, bolstered by political and organisational rights and social protection.

After World War II, studies of economic growth began to reflect the experience and needs of the Global South rather than historic industrialisation in Europe and America. In this context, dependency theory largely framed the discourse on industrial policy.

Dependency theory centred on the argument that in order to achieve stable growth, developing economies had to diversify away from commodity production. Over centuries, colonialism shaped reliance on exports of agricultural and mineral raw materials, especially in Latin America and Africa. Even after the affected countries gained independence, these production structures subjected them to the vagaries of global markets. Moreover, because most raw materials have substitutes, export prices faced an effective ceiling. As a result, even a prolonged increase in demand would not lead to a long-run improvement in prices. (See Prebisch 1950:8)

Dependency theorists concluded that developing economies should encourage growth in manufacturing, which was more diverse and had more scope for technological advances. The emphasis on manufacturing reflected its importance in global production, employment and trade in the 1950s and '60s. These theorists did not, however, argue that the services were inherently less desirable or productive, in contrast to their views on commodity production and especially agriculture. (See Prebisch 1950)

In the 1960s, academics in the Global North offered more abstract interpretations of the role of sectors in economic growth. Their work formed an alternative to the single-sector growth models that had emerged in the 1950s (most prominently Harrod-Domar and virtually all fiscal and monetary models), which effectively ignored the structure of production altogether. In the process, it provided an intellectual justification for industrial policy, understood as government intervention to promote industrialisation. Like the single-sector growth models, however, these authors believed that growth everywhere followed implacable universal laws. In this, they diverged qualitatively from the kind of heterodox, evidence-based and context-specific policymaking that characterised both dependency theory and industrial policy.

This body of work gave rise to three main methodological approaches.

One strategy, exemplified by Nicholas Kaldor (Kaldor 1968:387; see also Kaldor 1977 and Di Meglio and Gallego 2020; Maroto-Sanchez, A. and Cuadrado-Roura, J.R. 2009), researches the correlation of different sectors with economic growth across groups of countries during various time periods.[3] Kaldor and his successors conclude that manufacturing generally drove economic growth spurts. This methodology is explicitly premised on the belief that if a relationship emerges in a significant

[3] Kaldor himself analysed 12 industrialised economies' experience in the decade to 1964. (Bronfenbrenner 1969:278)

majority of economies, then it constitutes an economic "law". By extension, it then applies in all economies in all periods and regions.

A second approach, building largely on William Baumol (see for instance Baumol 2002; Baumol 1993), focuses on personal services. He included in this category music, education, healthcare and repair services, among others. He argued that these activities rely on personal relationships and therefore cannot be mechanised. By extension, they cannot achieve the productivity gains seen in manufacturing.

Third, various researchers showed that input-output tables for a range of economies generated higher multipliers for manufacturing than for services. They concluded that expansion in manufacturing would have a larger impact on economic growth than similar dynamism in services. (See Park 1994; Wölfl 2004; Rocha 2018:120)

From the 1980s, more practical arguments around the relative benefits of manufacturing and services arose in the Global North. In this view, the movement of manufacturing to China and other parts of the Global South, which accelerated from the 1990s, left lower skilled workers in the US and Europe dependent on low-paid, insecure care and retail jobs. Offshoring effectively compelled these workers to compete with much worse-off and sometimes politically oppressed workers in less industrialised economies. The direct relationships required for personal and social services means they cannot easily move overseas, but also leads to strong downward pressure on pay. As a result, the skills in these positions are systematically undervalued. In the Global North, employers often recruited women and migrants, effectively expanding the labour supply. These workers often have less power to demand decent pay and conditions.

Some authors suggested that in response, industrialised countries should seek to prevent countries in the global South from accessing global value chains and modern technology. (See Rocha 2018:122) The recent US sanctions on Chinese purchases of cutting-edge electronics reflects this strategy. This strategy makes it harder for less industrialised countries to catch up and narrows the space for industrial policy.

In 2022, Dani Rodrik effectively turned Kaldor's argument on its head, while accepting the concerns around working conditions in the services. (Rodrik 2022). He agreed that productivity generally rises faster in manufacturing than in services. That, he concluded, placed a ceiling on its potential for job creation. In contrast, the services continued to generate new employment through the 2010s. Rather than trying to reverse these trends, industrial policy should address the shortcomings in the services, ideally through higher productivity as well as improved labour standards. To that end, Rodrik proposed programmes to support skills development and new technologies in the services, rooted ideally in flatter work organisation that would empower employees.

4.2 Bringing the services back Into industrial policy

The argument that the services have little relevance to industrial policy relies on the contention that they have slower productivity growth and lower multipliers. These arguments, however, ignore implications for job creation and small business as well as the pivotal importance of some service industries in building human and social capital.

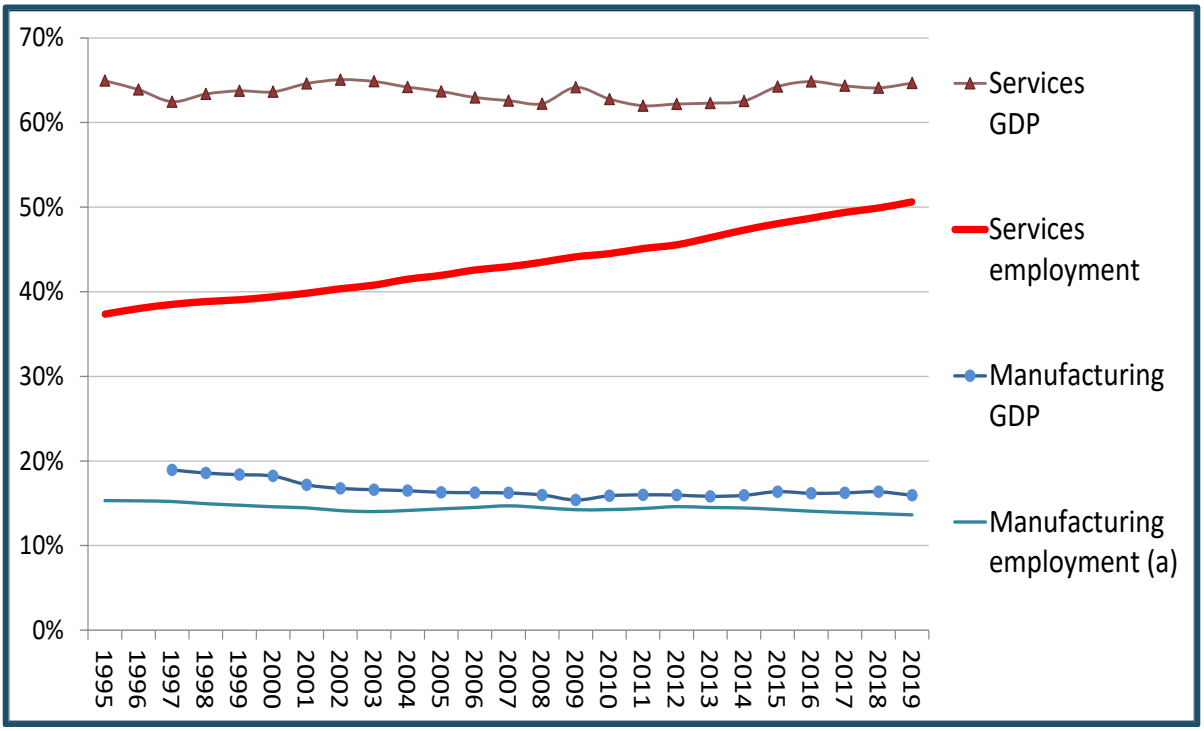
In South Africa, high joblessness and unusually deep inequality result above all from profound disparities in education, ownership, work organisation and asset ownership that were historically entrenched by the state. Accelerating productivity improvements in existing manufacturing industries will not address these ills. Rather, any effective solution requires structural change – the core rationale for industrial policy in the first place. Job creation in particular requires massive

growth in activities that may not be globally competitive but that are sustainable and that provide livelihoods and security. More rapid job creation and dynamic growth also necessitates strategies to address South Africa's unusually profound inequalities in human and social capital. That in turn depends heavily on improving as well as expanding the relevant services, notably education, health and cultural work.

4.2.1 Employment and small business

Since 1995 – the earliest data available – the services have accounted for virtually all job creation globally. In contrast, even when manufacturing increased its share in GDP from 2009 to 2015, its share in global employment continued to shrink. (See Rodrik 2022:9) These trends reflected the combination of relatively rapid growth in demand for the services industries with their substantial labour intensity.

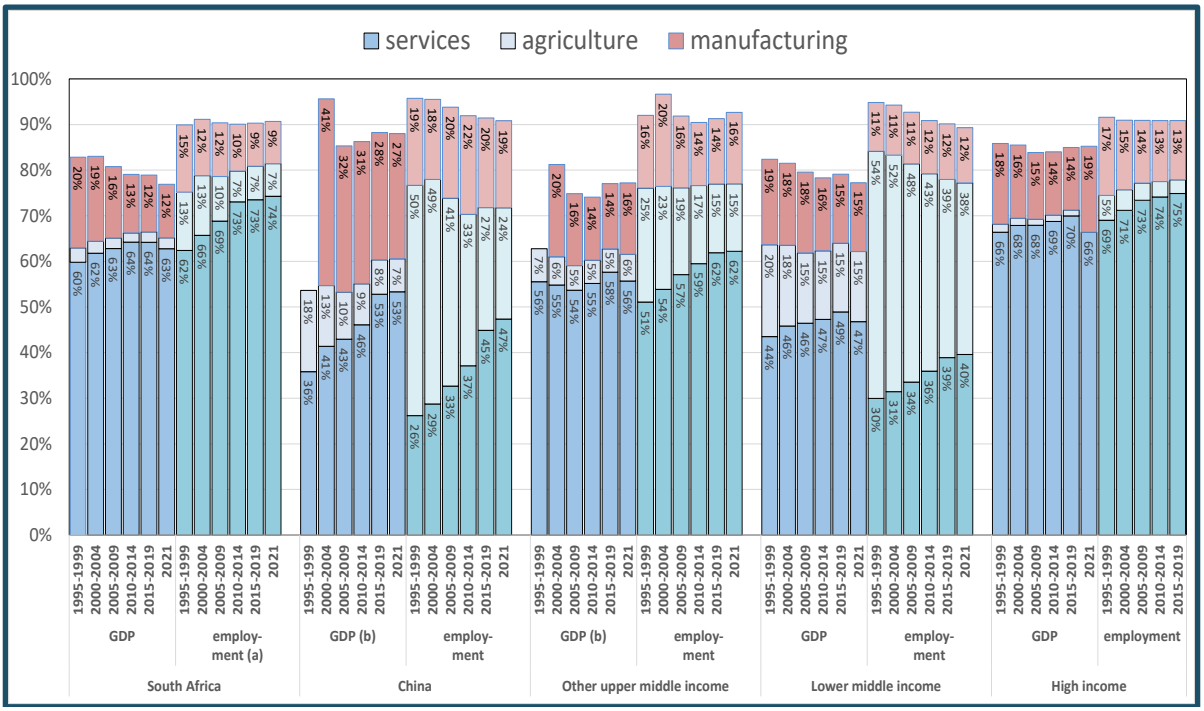
Graph 25. Percentage manufacturing and services in global GDP and employment, 1995 to 2019



Note: (a) Data on manufacturing employment are from ILOStat because the World Bank does not provide them. The World Bank employment data draw on the same ILOStat series. *Source:* For services GDP and employment and manufacturing GDP, World Bank. World Development Indicators. Interactive database. Accessed at www.worldbank.org in October 2022. For manufacturing employment, ILO. ILO Stat. Modelled ILO estimates. Accessed at www.ilo.org in October 2022.

A similar pattern emerged in China and in other upper-middle-income countries, as well as in South Africa. Overall, the share of manufacturing in GDP tended to decline in the 2000s, with a similar fall in employment. The exception was low- and lower-middle-income economies (which accounted for less than a tenth of global GDP but over a third of world employment in 2020). India, Pakistan and Bangladesh dominate the lower-middle-income group.

Graph 26. Share of manufacturing and services in GDP and employment in South Africa, China, middle-income and high-income economies, five year averages from 1995 to 2019 and in 2021

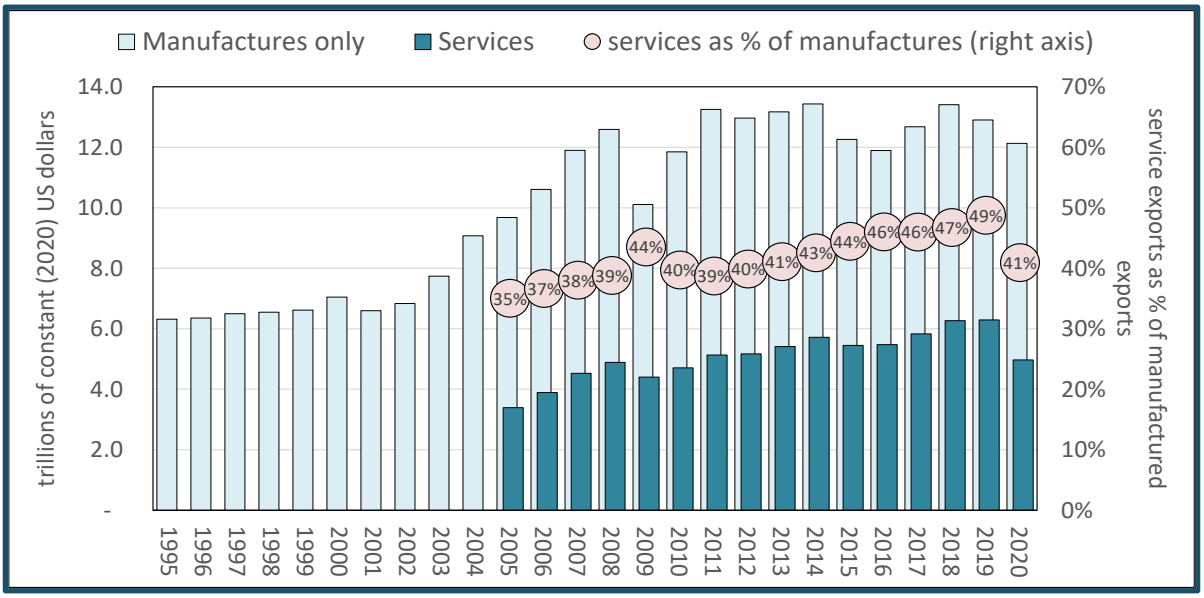


Note: (a) South African employment is calculated from Quantec because the modelled ILO data diverge substantially and without explanation from official sources with regard to agricultural and services employment (overstating agriculture at the cost of services). It seems likely that the ILO assumed South Africa undercounted informal agricultural employment because of its extraordinarily low levels compared to peer economies. In the event, the employment data are borne out by figures on household activities from the General Household Survey. As noted below, the divergence derives from the destruction of African smallholdings under apartheid. *Source:* For GDP, calculated from World Bank. World Development Indicators. Interactive database. Accessed at www.worldbank.org in October 2022. For employment outside South Africa, calculated from ILO. ILO Stat. Modelled ILO estimates. Accessed at www.ilo.org in October 2022. For employment in South Africa, calculated from Quantec. EasyData. Standardised industry series. Interactive database. Accessed at www.quantec.co.za in October 2022.

The dominance of service industries in job creation worldwide reflects in part the evolution of global demand. International trade figures show the trend.

- From 2011 to 2019, exports of manufactures shrank 0,3% annually in constant US dollars. In 2020, the pandemic brought a 6% fall. The decline in manufactured exports followed almost constant growth from 1980, averaging 4,5% a year in constant US dollars.
- In contrast, reported exports of services increased 2,6% a year from 2011 to 2019, after rising 7,2% a year from 2005 – the earliest available data – to 2011. As a result of these trends, recorded services exports climbed from a quarter of all international exports in 2005 to around a third in 2019. The pandemic hit service exports far harder than manufacturing, however, with the fall concentrated on personal and business travel. Reported global services exports plummeted over 20% from 2019 to 2020. (Graph 27)

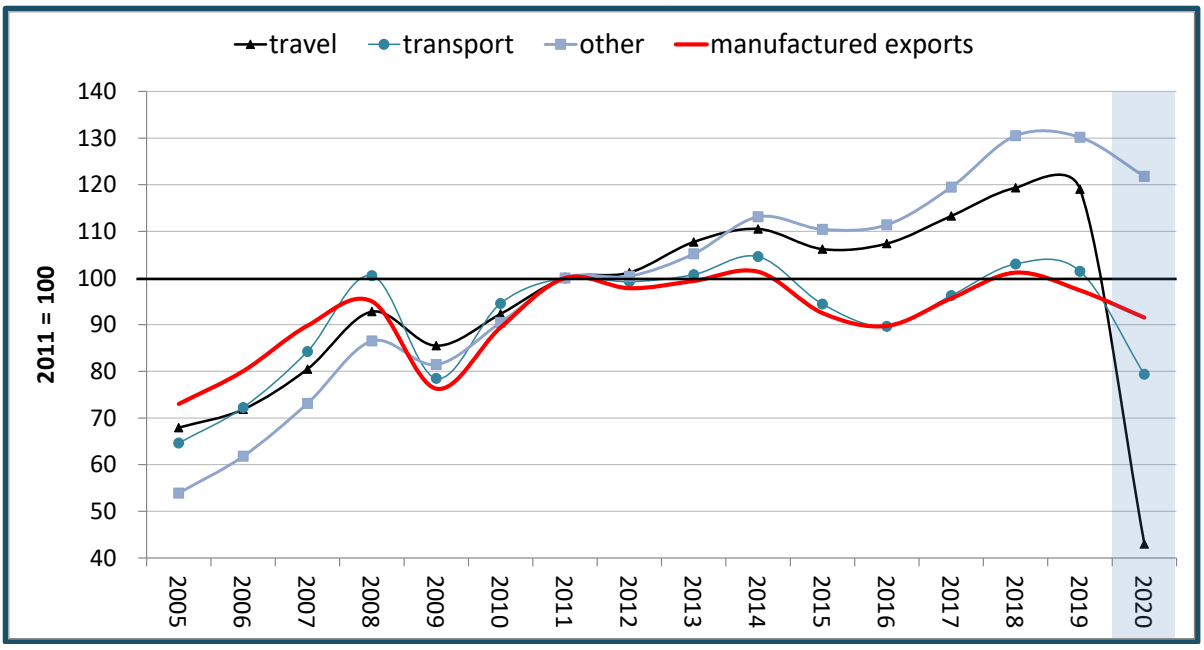
Graph 27. Global trade in manufactures and in services in trillions of constant US dollars and service exports as percentage of manufactured exports (a)



Notes: (a) Reflated with US CPI rebased to 2020. Data on services only available from 2005. *Source:* Manufactured goods trade calculated from World Trade Organization. WTO Stat. Interactive dataset. Accessed at www.wto.org in October 2022. Global service exports calculated from ICT. Trade Map. Interactive dataset. Accessed at www.trademap.org in November 2022.

The level of services trade is likely under-reported, but its growth rate may be overstated. Most of the reported expansion occurred in the historically under-recorded business and social services. As a result, it may reflect more complete recording over time. Still, travel and transport, which trade statistics have long captured more completely, also expanded faster than manufactured exports. In constant US dollars, these exports grew 7% a year from 2005 to 2011 and 1,3% annually from 2011 to 2019, with most of the growth in tourism, other personal trips, and business travel. (Graph 28)

Graph 28. Indices of global service subsectors and total manufacturing exports in constant US dollars (2011 = 100)

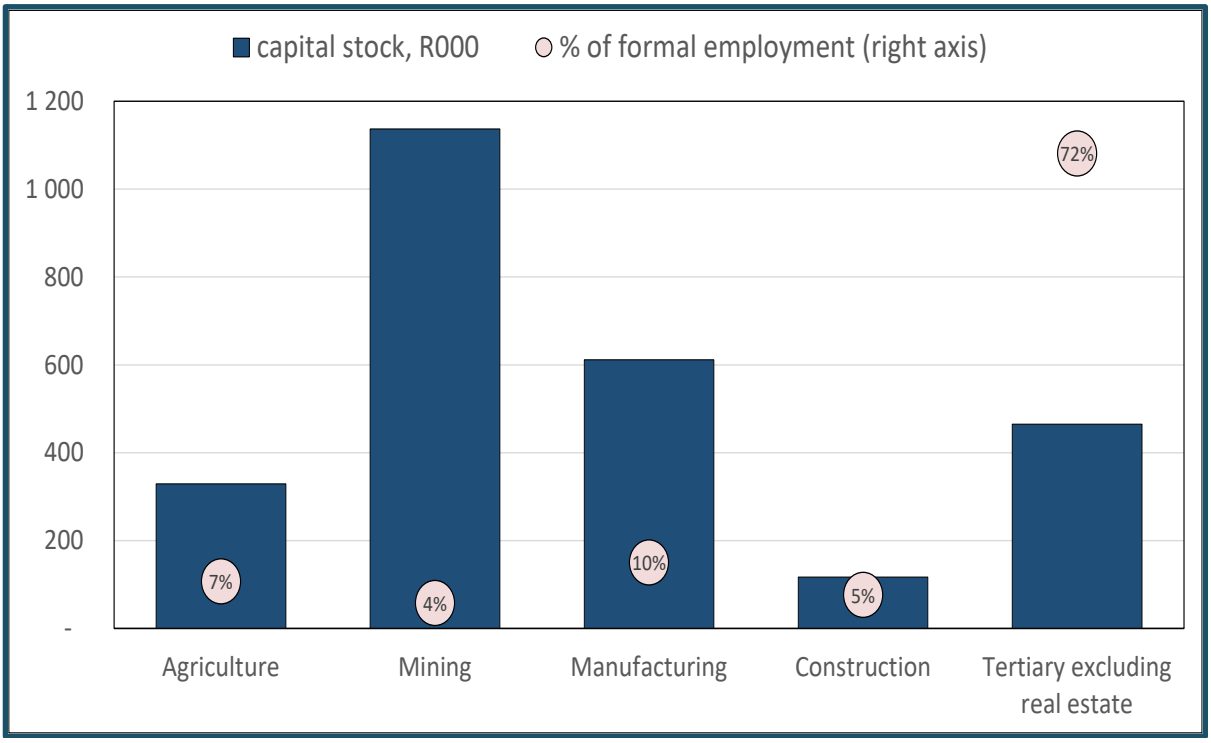


Notes: (a) Reflated with US CPI rebased to 2020. *Source:* Manufactured goods trade calculated from World Trade Organization. WTO Stat. Interactive dataset. Accessed at www.wto.org in October 2022. Global service exports calculated from ICT. TradeMap. Interactive dataset. Accessed at www.trademap.org November 2022.

Given growing demand, some of the service industries offered relatively low barriers to entry for workers and the self-employed. Outside of real estate, the capital-labour ratio for the tertiary sector was relatively low, and in many industries – notably cleaning, security, caretaking of all kinds and to a lesser extent retail – educational requirements were modest even in the formal sector (see Section 3.2).

Outside of real estate the ratio of capital stock to formal workers in the tertiary sector as a whole averaged R465 000 in the late 2010s, compared to over R610 000 in manufacturing. (Graph 29) The figure was even lower in agriculture and construction. Formal employment in these two sectors was nonetheless much lower than in services. Property managers that owned their sites pushed the ratio in real estate to over R12 million per worker.

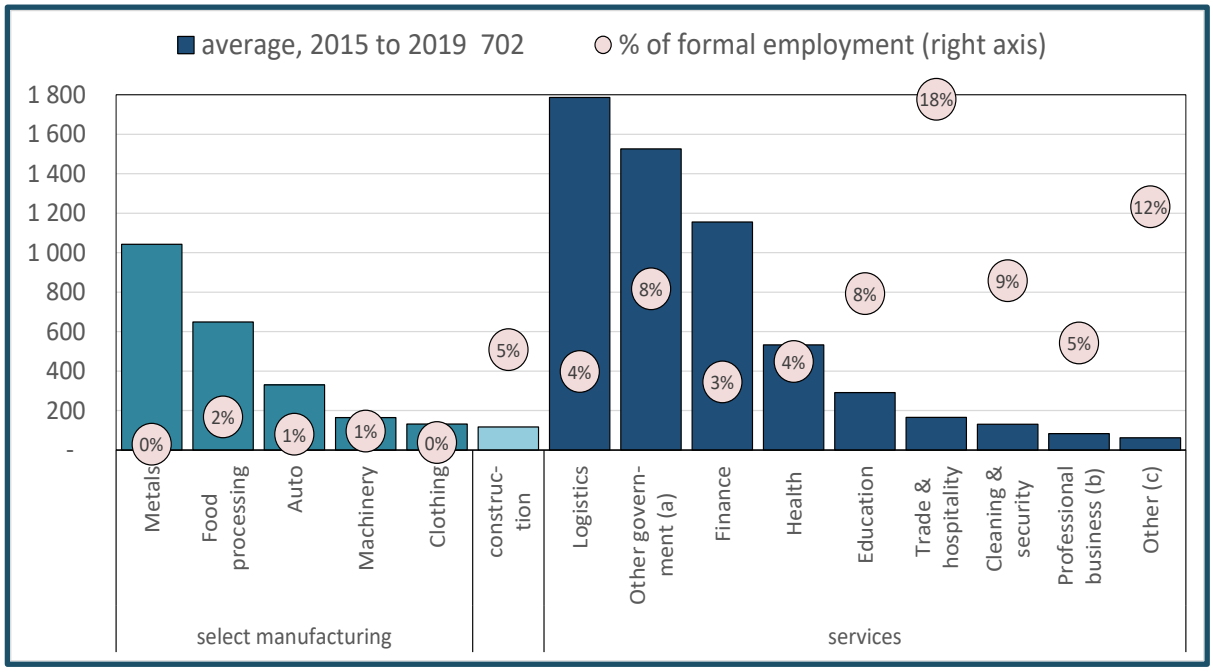
Graph 29. Capital stock per formal worker, average for 2015 to 2019, by sector, in thousands of constant 2015 rand



Source: Calculated from Quantec. EasyData. Standardised industry service. Interactive database. Accessed at www.quantec.co.za in October 2022.

The figures for the capital-labour ratio by industry points to substantial variations within sectors. In manufacturing, some light industries – notably food processing and machinery production – were more labour intensive than many services. Even excluding real estate, logistics and finance were heavily capital intensive. Health, education and the business professions required much less in the way of assets but much greater investment in qualifications, as Graph 12 shows.

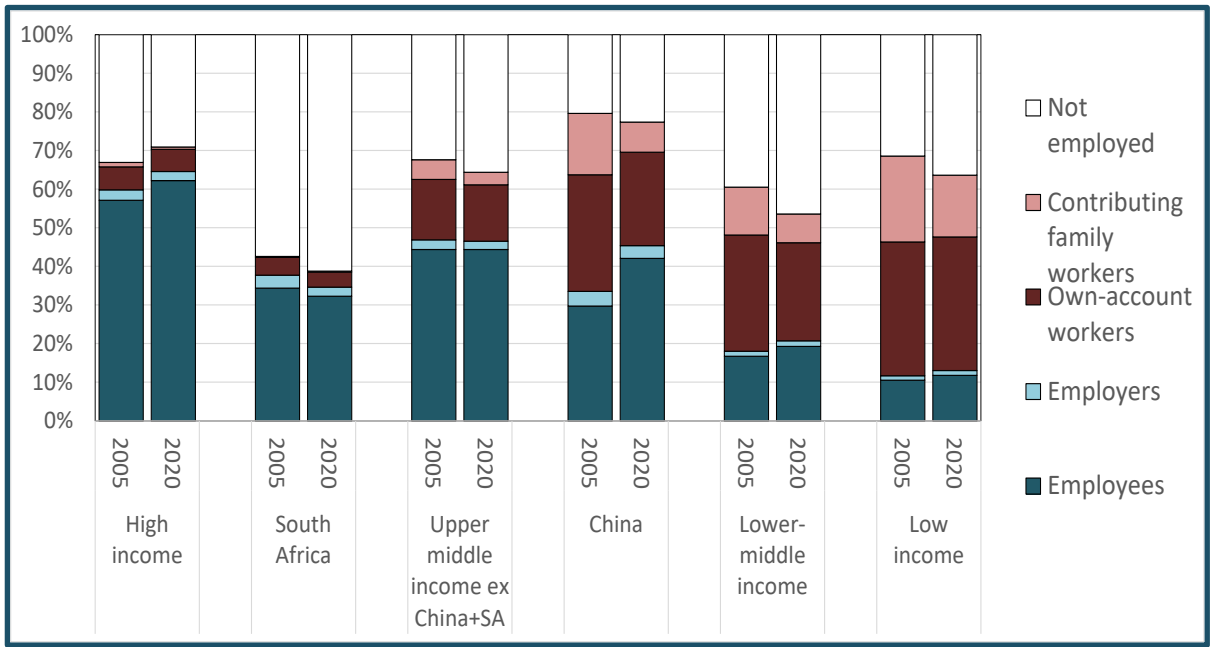
Graph 30. Capital stock per formal worker, average for 2015 to 2019, for selected manufacturing industries and for service industries, in thousands of constant 2015 rand



Source: Calculated from Quantec. EasyData. Standardised industry service. Interactive database. Accessed at www.quantec.co.za in October 2022.

The role of the services in job creation is particularly important in South Africa. Around 40% of working-aged people are employed, compared to the international norm of about 60%. In large part, this reflects the near-elimination of smallholder farming before the transition to democracy. In other upper-middle-income countries, and notably in East Asia, family farms still accounted for around a third of employment in the late 2010s.

Graph 31. Business owners (employers and the self-employed) as percentage of total employment in South Africa compared to other countries by income group, 2005 and 2020 (a)



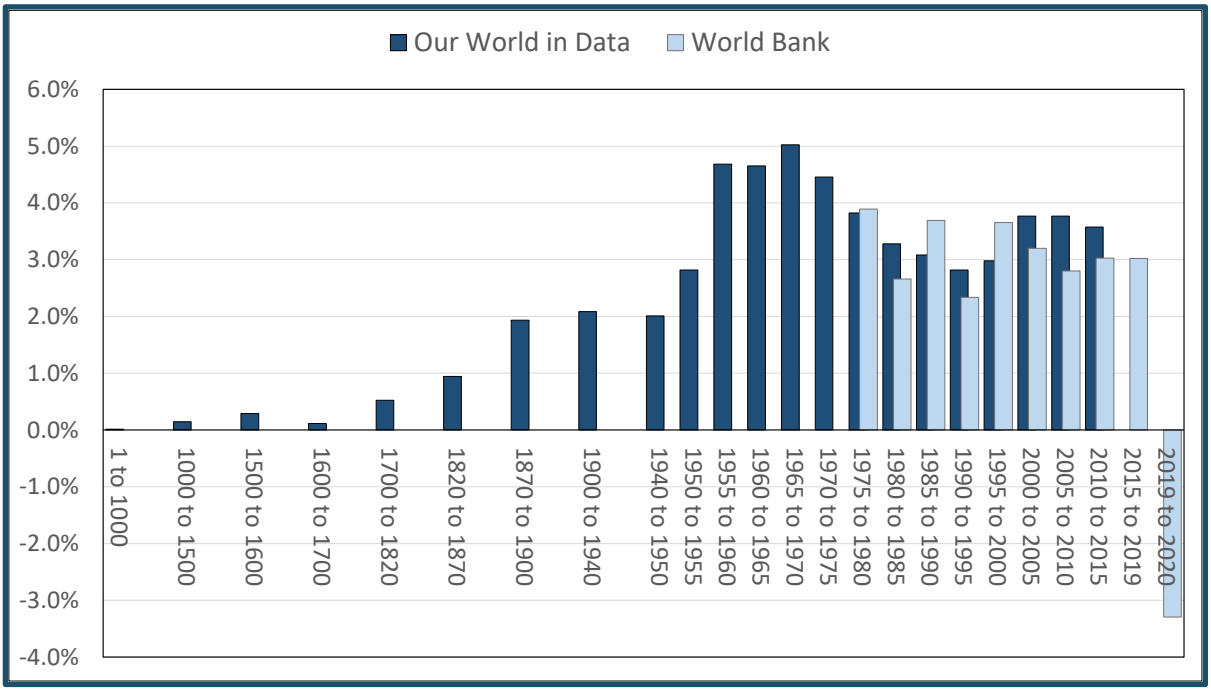
Note: (a) ILO modelled estimates try to standardise findings for countries, which requires some modification of national data when data are missing or not comparable. *Source:* calculated from ILO. ILOStat. Employment by sex, age and economic class. Interactive dataset. Accessed at www.ilo.org in August 2022.

In South Africa, extraordinarily high joblessness, due in large part to inequalities in asset ownership and education, meant that industrial policy had to visibly address the crisis of joblessness and poverty. That in turn meant judging industries by their capacity for supporting small businesses and decent work on a mass scale, not by experiences of industrialisation in the past century or other regions.

4.2.2 Impacts on growth

The contention that the services are less productive draws its strength largely, although often only implicitly, from the perception that the international economy has slowed over time, and that the slowdown correlated with the rising importance of services. The available estimates do not, however, show a long-run slowdown in growth as the service industries increased their share in the GDP (Graph 32.) Growth remains far higher today than it was before World War II. It is lower than in the 1950s and '60s, but that period was an outlier. Obviously, the sharp fall in the pandemic and the current structural changes in globalisation may affect the trends going forward.

Graph 32. Estimates of annual growth rates, 0 to 2020



Source: Calculated from Roser, M. Economic Growth. Interactive dataset. Our World In Data (Oxford). Accessed at https://ourworldindata.org/economic-growth in October 2022; and World Bank. World Development Indicators. Interactive dataset. Accessed at www.worldbank.org in October 2022.

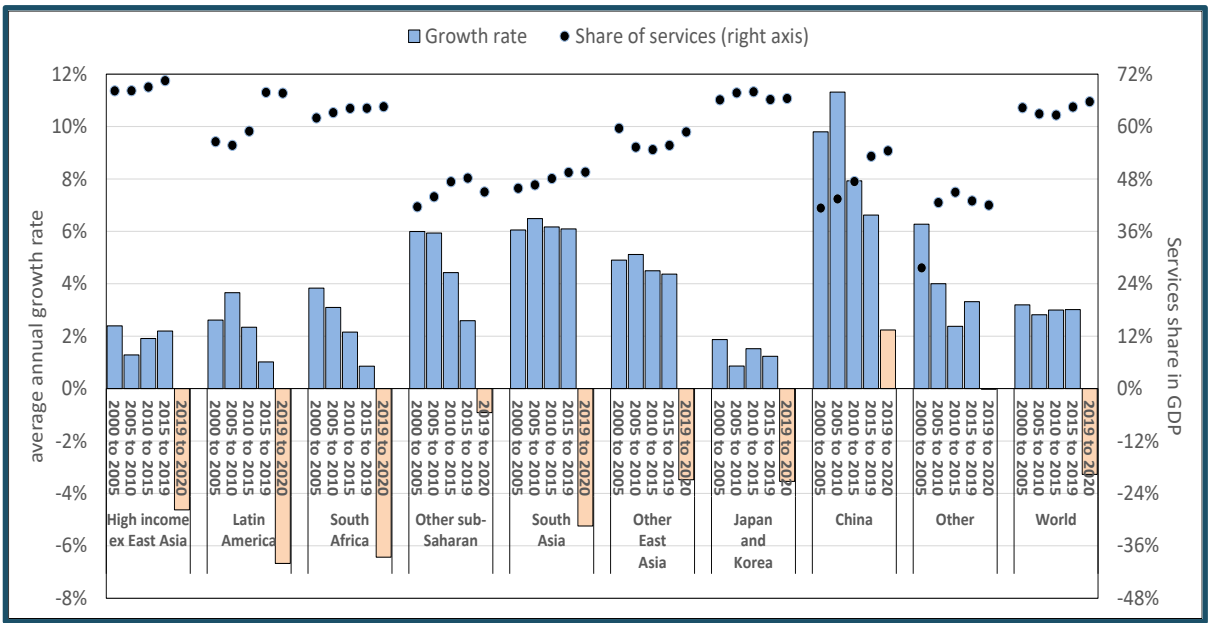
Far-reaching changes in the location of production complicate analysis of long-run trends in the global growth rate. In particular, growth accelerated in East Asia while slowing in the Global North, and remained comparatively low in Latin America and Africa. China in particular grew far more rapidly than the rest of the world, including the Global South, from 1980. As a result, China's share in the world's GDP climbed from 1% in 1980 to almost 20% in 2020, while high-income countries saw their share fall from 80% in 1960 to 60% in 2020. In contrast, African and Latin American economies expanded far less rapidly. South African growth rates mostly mimicked Latin America except for the sharp contraction in the decade leading up to the transition to democracy. The pandemic downturn from 2019 to 2020 also affected Latin America and South Africa particularly harshly.[4]

[4] Calculated from Our World In Data. Gross-domestic-product.csv. Excel spreadsheet. Oxford University. Downloaded from https://ourworldindata.org/economic-growth#different-data-sets-on-growth-in-the-last-decades in July 2022.

The available evidence shows no correlation between the share of services in the GDP and overall growth rates. In the 2000s, services held steady as a share of the global GDP, but the overall economic growth fluctuated and never recovered from the 2008/9 crisis. The services share climbed noticeably only briefly, during the 2008/9 crisis and again in the COVID-19 downturn. That reflected relative stability rather than growth. It mostly resulted from higher public spending designed to counter broader economic declines.[5]

At the regional level, as internationally, the share of services does not simply correlate with economic growth (Graph 33). High-income and more unequal economies tend to have a higher share of services in the GDP, and the share of services has generally risen in most regions. But there is no visible or consistent link to growth rates.

Graph 33. GDP growth and share of services in the GDP by region at five-year intervals and from 2019 to 2020



Source: Calculated from World Bank. World Development Indicators. Interactive database. Series on services and GDP in current US dollars and GDP in constant US dollars. Downloaded from databank.worldbank.org in July 2022.

4.2.3 Productivity in industrial policy: Are we asking the right question?

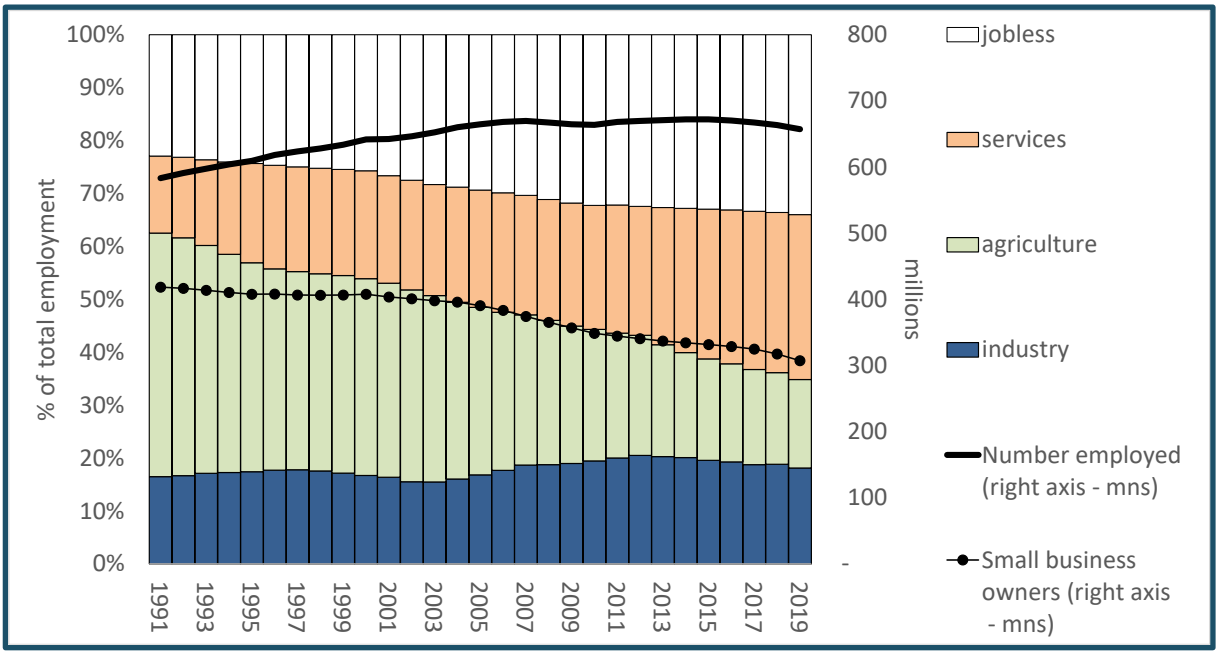
Academic studies that focus on productivity by industry as the driver of growth risk misdirecting industrial policy. They effectively prioritise measures to support technologically advanced activities. But industrialisation starts by moving underemployed labour into more productive employment, not by raising productivity within the existing production structure. Especially in its early stages, improving productivity in existing sectors or, for that matter, promoting technologically advanced processes have played a secondary role.

Historically, industrialisation in the Global North and East Asia has meant that people moved off family-owned farms, initially into light industry, construction, and an array of urban services. In China, rapid industrialisation saw agricultural employment plummet from 60% of the total in 1991

[5] Calculated from World Bank. World Development Indicators. Interactive database. Series on GDP growth and services as percentage of GDP for the world. Accessed at www.worldbank.org in July 2022.

to 25% in 2019. Almost all of the shift went into services, where employment climbed from 19% of the total to 47%. In contrast, industrial employment (defined as mining, manufacturing, construction and utilities) rose only from 21% to 27%. (Graph 34)

Graph 34. China: Employment by sector, number employed and small business owners (a), 1991 to 2019

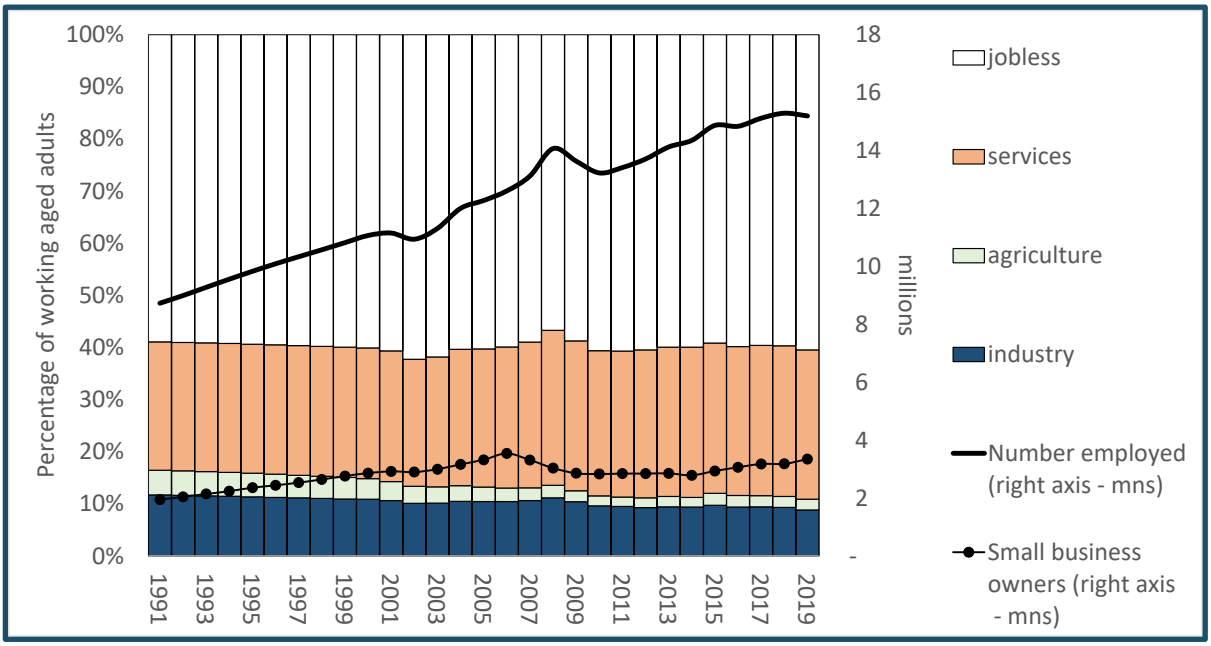


Note: (a) Calculated from number of employers and self-employed. Industry comprises mining, manufacturing, construction and utilities. *Source:* Calculated from World Bank. World Development Indicators. Interactive dataset. Series on employment by sector, number of working-aged people and share employed. Downloaded from www.databank.worldbank.org in July 2022.

South Africa stands out from other upper-middle-income economies because colonial and apartheid regimes effectively destroyed African family farming. Very low levels of self-employment and agricultural employment resulted, with an extraordinarily high level of joblessness instead (Graph 31). By extension, industrialisation cannot move labour out of low-level farming into higher-income activities. Instead, it has to create opportunities for people who now depend primarily on family support and social grants.

From 1991 to 2019 South Africa created jobs at a faster rate than China, with most new opportunities in services. According to standardised ILO estimates, farming jobs fell from a million to 800 000, or from 12% to 5% of total employment. Industrial employment climbed from 2,5 million to 3,4 million, but still dropped as a share of total employment, from 29% to 22%. In contrast, service jobs more than doubled from 5,2 million to 11 million, rising from 60% to 72% of the total. Nonetheless, the number of jobs kept up with growth only in the adult population. As a result, the share of jobless adults remained stable at around 60%. In contrast, in China the share of jobless people increased, albeit off a much lower base. It rose from 23% in 1991 to 35% in 2019, in part because more youth pursued higher education.

Graph 35. South Africa: Employment by sector, number employed and small business owners (a), 1991 to 2019



Note: (a) Calculated as number of employers and self-employed. *Source:* Calculated from World Bank. World Development Indicators. Interactive dataset. Series on employment by sector, number of working-aged people and share employed. Downloaded from databank.worldbank.org in July 2022.

Expanding employment fast enough to make a dent in joblessness, at least outside of commodity booms, requires growth in activities that are not innovative or possibly even competitive by global standards. The critical criterion becomes whether a cluster or value chain can sustainably support decent work and small business on a mass scale. Various factors may make such activities viable, even if they are not technologically advanced. Among others, they may be protected by distance from international competitors; family-owned businesses may accept long hours for low earnings; and government may subsidise consumers or products, for instance community and cultural services, educational support systems, public health and food gardens and kitchens.

To use a different terminology, "extensive" growth, where production grows principally due to greater use of resources rather than higher productivity, is central in the early phases of industrialisation. The shift to "intensive" (productivity-based) growth generally comes only after achieving a high level of productive employment. Extensive growth will always expand employment, but with only limited improvements in value added and consequently in wages and profitability. In contrast, more intensive growth will grow employment only if demand for output grows faster than productivity. Ultimately, however, it lays the basis for higher wages and profits.

4.2.4 Measuring productivity in the services

The methods used to measure productivity notoriously have a number of weaknesses. Above all, they cannot measure externalities, which are particularly important for services that build human and social capital. In addition, productivity measures that centre on physical output per worker necessarily ignore long-run changes in how society values an output, which is generally measured by movements in relative prices.

Industrial policy has historically relied heavily on value-chain analyses and the associated input-output modelling framework. As noted in Section 2.3, the services do not fit this model well in three ways.

First, because the services do not provide tangible inputs such as raw materials or capital goods, they are often left out when value chains are conceptualised. Design, engineering, logistics, finance and marketing are critical for any modern production process, and typically supplied in large part by outside providers. These functions rarely feature in value chain analyses. Instead, they are usually subsumed in the manufacturing process. The result is to divert attention away from the role of services in promoting industrialisation.

Second, services in both the public and private sectors that build human and social capital have generally been treated as outside of the scope of industrial policy measures. This is particularly problematic in South Africa given the distortion in state services before 1994. As a result, education and healthcare systems were not designed to support industrialisation but rather to maintain privilege for a minority. Strategies for industrialisation have mostly shied away from indicating the reforms required to promote more inclusive, diversified and dynamic growth.

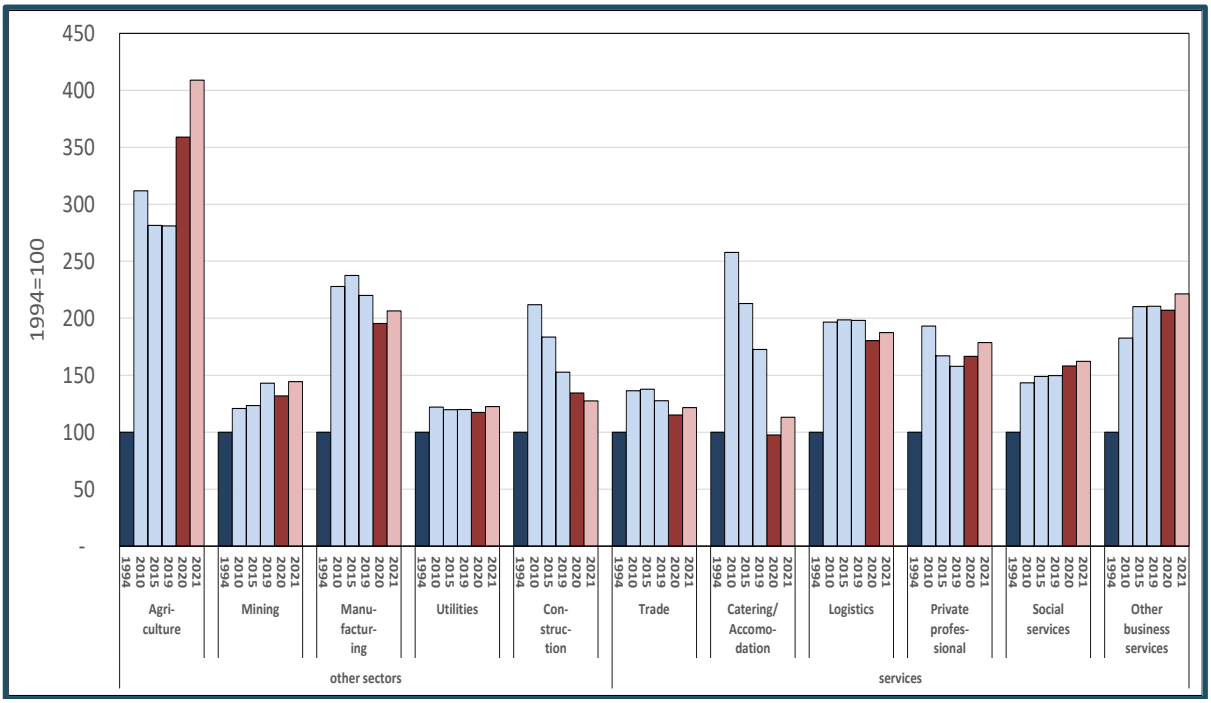
Finally, the argument that services cannot improve productivity much often relies on the argument that they have only limited scope for mechanisation. That approach generally relies more on anecdotes and theoretical views of the production process than evidence. Above all, it ignores improvements in the quality and value of outputs as well as digitisation and changes in the division of labour between skilled and less skilled workers.

These shortcomings emerge graphically from Baumol's influential initial think piece. It was built around the observation that for centuries classical orchestras have required the same number of players to "produce" a piece of music, with limited scope for replacement by machines. This example has been widely repeated without much evidence. (See ECA 2016:31) Yet it patently ignores fundamental changes in the musicians' product over time. In particular, broadcast and recording technologies enable orchestras to reach bigger audiences and to resell and repurpose performances. (See Tiongson 1997) Furthermore, research has shown that orchestras have improved productivity even by Baumol's definition, among others by increasing the frequency of concerts and the size of audiences. (See Griliches 1992:20 and Tiongson 1997:118)

Similar shortcomings afflict the argument that healthcare cannot increase productivity because nurses and doctors must meet personally with patients. In practice, improved medical technologies have led to vast advances in health outcomes over time, as the COVID-19 pandemic again underscored. In addition, in many countries and institutions, treatment has been reorganised to shift less skilled activities away from doctors and, in many countries, to cut the amount of time they spend with each patient. Telemedicine, which took off during the pandemic in the Global North, vastly reduces transaction and overhead costs around visits for both patients and doctors.

In the event, the available data suggest no significant differences in productivity growth between private services and other industries, as traditionally measured. (Graph 36) The COVID-19 pandemic affected retail and entertainment services severely because their business models depend on large in-person gatherings that risk infection. For agriculture, unreliable data on farm employment and variations in the weather substantially distort the figures. As noted, the data on the public services reflect government employment and spending trends more than the value of production.

Graph 36. Indices of labour productivity by industry in South Africa in constant rand terms, 1994 to 2010, 2015, 2019, 2020 and 2021 (a)



Note: (a) Calculated as total output divided by formal employees. *Source:* Calculated from Quantec. EasyData. Interactive dataset. Standardised industry series on total output in constant rand and formal employment. Accessed at www.quantec.co.za in July 2022.

4.2.5 Pay and working conditions

As discussed in Section 3.2, in South Africa the formal services as a whole provide pay and conditions more or less equal to those in the rest of the formal sector. Arguably the services are more dualised, because they encompass most professions as well as low-wage, mass employment industries such as cleaning and personal care. As a result, the services provide some of the best employment conditions in South Africa, especially for women, as well as generating millions of precarious jobs, notably in domestic work and the informal sector, again mostly for women.

For industrial policy, low-wage industries inside and outside of the services pose harsh tradeoffs. On the one hand, they are typically both labour intensive and able to employ people with limited qualifications. For South Africa, given extraordinarily high joblessness, that makes them a relatively easy and cheap way to generate more jobs, even if they are poorly paid and vulnerable. On the other hand, employers in these industries often effectively maintain competitiveness by pushing down pay rather than improving technologies. That in turn slows overall growth in the long run.

The historic view of the services in industrial policy has arguably been influenced by the misogyny that shaped mainstream economics. The discipline long treated reproductive labour of all kinds as irrelevant to the economy. In consequence, it ignored most work traditionally performed predominantly by women. That view applies to much of the services, and in particular education and health, personal services, cleaning and retail. If these activities are not seen as providing “real” jobs, because most of the work goes to women, then they will obviously not be prioritised in industrial policy development. The opposite applies, of course, to more paradigmatic, “manly” jobs in infrastructure construction, mining, heavy industry and auto assembly.

5 CONCLUSIONS AND FURTHER RESEARCH NEEDS

The growing role of service industries in modern economies reflects, primarily, the changing division of labour within production and the formation of social and human capital as industrialisation progresses. Service industries have increasingly been externalised from households and industrial producers. In South Africa, they have a somewhat higher share in production and employment than peer economies, mostly because of the virtual absence of smallholder agriculture. The available data suggests, however, that the formal service industries in South Africa provide remuneration on par with manufacturing.

The services can contribute directly to growth in output, employment and exports, as well as supporting goods production. Some of them – notably retail, the professions, cleaning, security and other personal services – are relatively labour intensive and therefore particularly suited to growing employment and providing opportunities for small business. From a structural standpoint, however, the various service industries have very different roles in inclusive industrialisation, which in turn requires a differentiated response from industrial policy. Three main roles emerge.

1. Providing direct inputs for other industries, primarily through the business professions; logistics and marketing; and cleaning and security.
2. Investing in human capital through education and healthcare.
3. Building social capital through social protection, hospitality and cultural work.

As with the rest of the economy, facilitating developmental growth in the service industries requires both targeted measures and management of tradeoffs. That in turn necessitates more in-depth analysis of opportunities, constraints and risks. The rest of this section indicates a broad research agenda for the five services subsectors identified in Section 3: professional business services; human capital development; cultural services and hospitality; logistics and retail; and cleaning and security. In each case, it briefly summarise the potential contribution to industrial policy as well as some core strengths and weaknesses. The aim is only to provide a framework for more detailed analysis for each grouping as the basis for developing practical strategies.

5.1 Professional business services

High-level business services can contribute to broader competitiveness, innovation and diversification through:

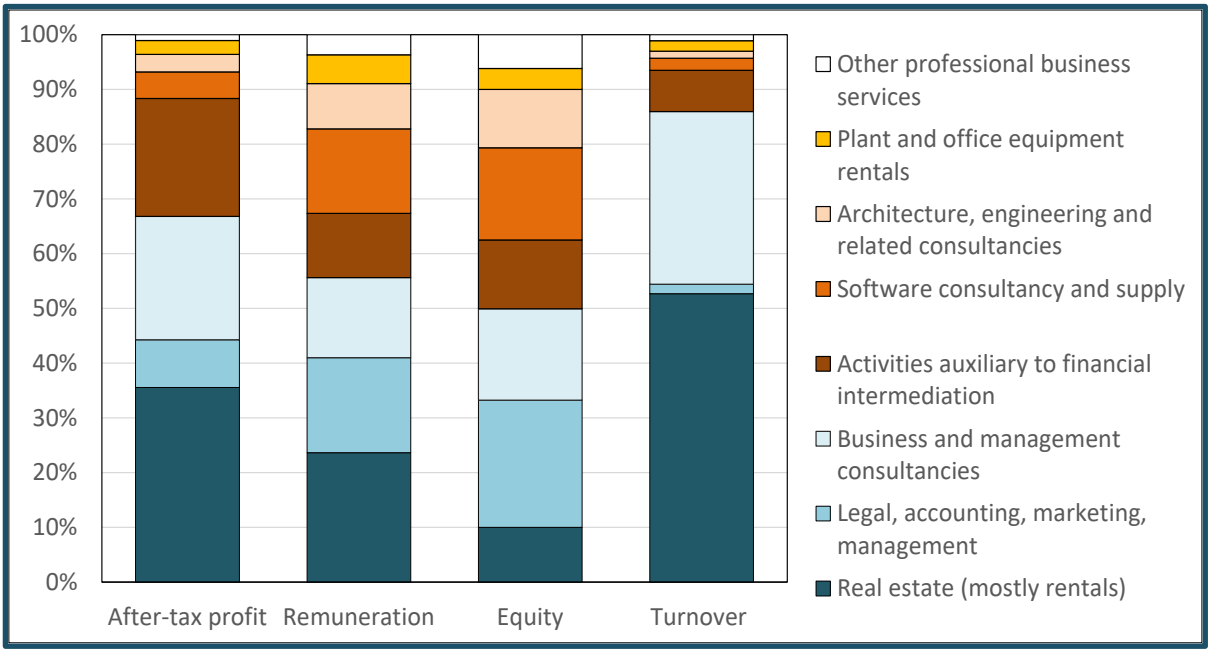
- Direct technical support in the form of research, engineering and design,;
- Property management by both the public and private sector that ensures quality production sites and infrastructure;
- Management services, notably legal, accounting, finance, marketing and strategic consultancies.

Taken together, the professional business services employed a million people in South Africa in 2019, with value added of R1,5 trillion. The largest subsectors in terms of turnover were property management, finance and software support.

The structure of professional business services in South Africa reflected the global trend towards externalisation of technical functions and property management. Graph 37 shows the distribution of leading financial indicators between the various business services. In this context, after-tax profits plus remuneration equate broadly to value added. As a group, professional business services accounted for a third of after-tax profits and a fifth of remuneration in 2019 in the formal sector excluding agriculture and private education. By this measure, the largest single business service was property management, supplying both commercial and industrial sites. It was followed by a group of

management support services, and then (at a distance) by various technical support functions, dominated by software developers and suppliers.

Graph 37. After-tax profits, remuneration, equity and turnover within professional business services in South Africa, 2019



Source: Calculated from Statistics South Africa. Annual Financial Statements. AFS 2019 revised – Disaggregated industry estimates. Excel spreadsheet. Downloaded from www.statssa.gov.za in October 2019.

For industrial policy, the following concerns arose around services that provided, respectively, technical and management support.

5.1.1 Technical support

Most investment and maintenance projects across the economy rely on contracting in at least some technical and design skills. The enterprises providing this support vary considerably in size, but on average are far smaller than in other industries, with a higher reliance on self-employed professionals. In 2019, information and communications technology (ICT), research and development, architecture and engineering employed 330 000 people in total. Of these, more than one in 20 was self-employed and one in seven was an employer, with an average of nine employees. Just over one in four people in the technical support services had a university degree.

This level of skills and self-employment in technical support is extraordinary. In the rest of the economy excluding other professional business services, only one in 100 employed people was self-employed, and one in 25 was an employer, with an average of over 30 employee. Moreover, only one in eight workers in the rest of the economy had a degree – just half the rate of the technical support services. (Calculated from Statistics South Africa 2019)

Despite South Africa's considerable strengths in technical support, in particular engineering and software, it runs a persistence balance of payments deficit for these industries. (See Graph 22) Fundamentally, this situation reflects the governance of global value chains, where dominant companies invest considerable effort in retaining control of high-level skills and knowledge. Developing local capacities in this context requires both strong industrial policy interventions and institutional and skills base strong enough to take advantage of new opportunities.

For South Africa, major obstacles to more advanced technical services include the following.

- The education system remains highly inequitable, as discussed in Section 5.2. It produces some world-class professionals, but a comparatively low level of university graduates in the labour force overall (see Graph 38 in Section 5.2). The shortage of qualified personnel is particularly constraining for the technical services due to their heavy reliance on highly qualified employees and entrepreneurs. The situation has been aggravated by large-scale out-migration of qualified people over the past 20 years combined with tight controls on employment for foreign professionals, even if they come from Southern Africa and studied in South Africa.
- The state has limited programmes to identify and support small, high-level technical enterprises. Longstanding inequalities in the educational system, and especially in technical and professional disciplines, mean these firms are often not empowered, which makes assistance more difficult. In 2019, Africans comprised only one in five graduates employed in the technical support services, compared to half in the rest of the economy. (Calculated from Statistics South Africa 2019; see also CeSTII 2021:31) The case study of engineering in Annexure A gives more detail.
- Within global value chains, dominant companies retain control through their ownership of industrial secrets as well as intellectual property rights. Changing this division of labour is extraordinarily difficult, especially for comparatively small economies like South Africa. It both blocks localisation of technical expertise in many industries, and limits domestic and foreign demand for local suppliers where they do emerge.
- Finally, the relatively small population and economy means South Africa cannot compete in every technology. Over the past century, it has effectively specialised in technologies associated with mining, including among others engineering, with spillovers to public construction works of all kinds; mineral chemicals from explosives to processing; and capital equipment used in mining, notably pumps and conveyor belts. More recently there have been efforts to promote renewable energy expertise, including through local procurement of inputs. Further measures to promote technical support services would have to be effectively targeted, taking into account both potential competitiveness and the evolution of domestic, regional and global demand.

5.1.2 Management support

South Africa has globally competitive management support systems, defined (in line with Figure 1 on Page 8) as the complex of financial services, management consultancies, legal and accounting firms, marketing and related activities. In this definition, this complex includes the highly competitive financial institutions and systems. It is characterised by large foreign subsidiaries and affiliates as well as local consulting, legal and accounting firms, some of which export across the region and overseas.

Despite the strength of these industries in South Africa, three weaknesses have emerged from the standpoint of industrial policy.

- Management support companies, whether local or foreign, have not always adopted a developmental perspective. This situation emerged vividly from the complicity of several international accounting and consulting firms in state capture in the 2010s. More broadly, critics argue that financial holding companies often require managers to adopt a very short-run approach to profitability. That in turn militates against the long-run, consistent investments required for industrialisation.
- Management support firms have focused heavily on serving very large, established businesses, while providing only limited and often high-cost services for smaller firms and emerging industries. This challenge emerges among others in the paucity of angel and venture capital as well as high-cost, resource-intensive legal services and systems. There are some innovative

initiatives to assist small business, but they remain limited. A more consistent evaluation of the blockages to access for smaller and emerging enterprises would be helpful in expanding this kind of activity.

- South Africa's financial systems have facilitated large-scale, short-term, often speculative capital flows into and out of the country, particularly before the global financial crisis in 2008/9. These flows risk destabilising the value of the rand as well as increasing national debt.

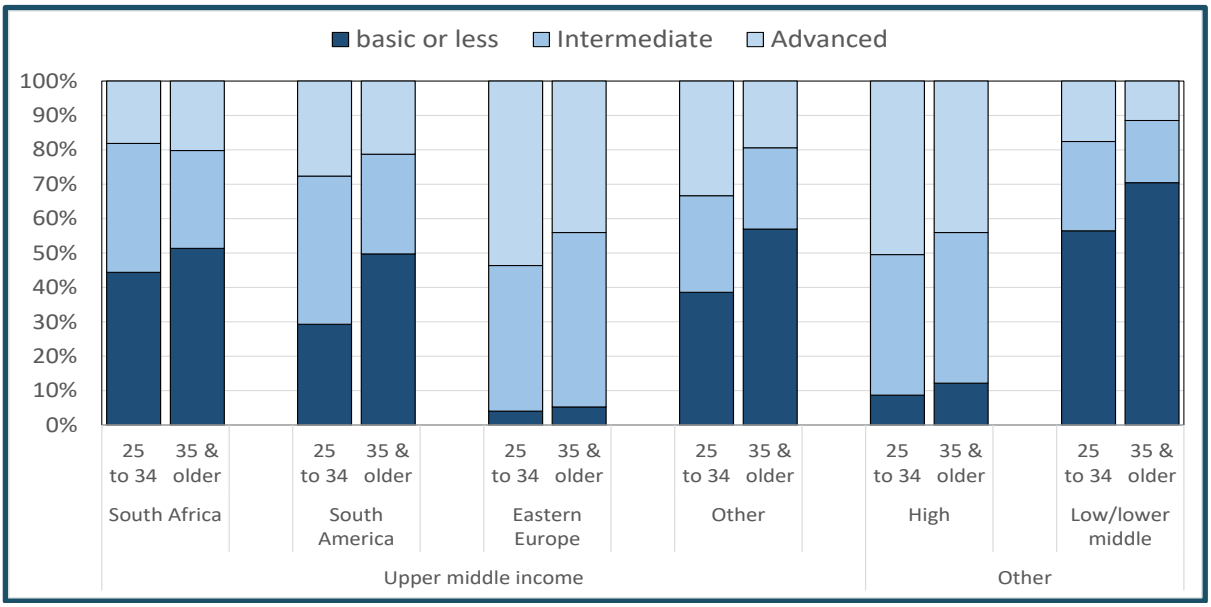
5.2 Human capital development

Education is obviously a critical input into industrialisation, both to ensure the competencies required for production and to sustain stable and supportive political and social structures. Healthcare is also vital for a productive and reliable labour force. Reasonably equitable access to both services is crucial to maintain social trust and visibly to improve equality and social mobility. In turn, those benefits shape a better context for industrial policy by distributing the benefits of economic growth and development more widely.

In 2019, there were almost a million people employed in education and over 500 000 in healthcare. Nearly 80% of employees in education and 60% of healthcare workers were in the public sector. The large state role means the data do not reflect the market value of outputs. Quantec estimates value added in education in financial terms at R445 billion in 2019, and in healthcare at R280 billion.

The profoundly inequitable educational systems established under apartheid have reduced the productivity of the sector overall. To this day, these unequal systems narrow progression to tertiary education. As a result, comparatively high levels of spending relative to the GDP do not yield the same levels of qualifications seen in other countries. As Graph 38 shows, South Africa still lags behind peer economies when it comes to the share of people with tertiary degrees in the labour force. The shortfall in skills both makes it harder to diversify the economy and aggravates income inequalities. South Africa still has the highest returns to higher education, measured by the ratio of remuneration for professionals to other workers, of any country included in the database maintained by the International Labour Organization. From the standpoint of the economy, that means skills are still overly costly for producers, largely because they remain in short supply.

Graph 38. Level of education by age group in upper middle-income countries excluding China (a)



Note: (a) The dataset does not provide information for China. Figures are for all people in age group, whether employed or not, using latest available data from 2017 to 2019. *Source:* Calculated from ILO. ILO Stat. Modelled ILO estimates. Accessed at www.ilo.org in August 2022.

In this context, challenges around education for industrial policy include the continued failure to adapt the curriculum to the needs of the modern economy. In particular, most schools provide little or no training in computer use, design and critical thinking, relevant mathematics and language skills, or basic economics and business. These shortfalls are particularly serious for learners who drop out before matric – around a quarter of the total – as well as those who do not attend further education after secondary school. They are most pervasive in schools in working-class communities ("no-fee" schools), where parents cannot afford to supplement government spending on education. (See Makgetla 2022)

Weaknesses in the education system have been aggravated by extensive out-migration of highly qualified people. The available data suggest that around 30% of graduates have left the country.[6] The figure appears to be still higher for white graduates, at around 50%. Whites are still over-represented in universities, and in particular in the professional schools (medical, law, accounting and engineering).

More broadly, profound and highly visible inequalities in access to education block social mobility, undermine social solidarity and deepen protest and contestation. Even in the state sector, schools in historically black communities remain underfunded compared to those in better-off suburbs that are able to charge fees. In the late 2010s, schools in historically African systems (the pre-1994 Department of Education and Training) had learner:educator ratios that were twice as high as those historically in white systems.

Economic stakeholders in South Africa have historically failed to provide strong inputs into education policy. Instead, they have focused on trying to remedy shortfalls through the post-school skills development system. A more pro-active approach to general education is needed, however, to ensure an adequate supply of skills across the economy.

As in education, profound inequalities persist around access to healthcare, which in turn mean that health outcomes lag behind global norms despite relatively high levels of expenditure. The results emerged during the pandemic, as South Africa suffered some of the highest rates of illness and mortality in the world. More broadly, they can be seen in low life expectancy and depressed ratios of healthcare professionals to the population compared to other upper-middle-income countries.

Above all, access to quality healthcare still depends largely on ability to pay rather than need. That in turn significantly raises the cost of employment for formal workers as employers meet most of the expense of medical schemes. The COVID-19 pandemic added substantial unanticipated costs to private health insurance, leading to a particularly steep escalation in costs, both through regular fees and through efforts by the medical schemes to restrict coverage and payments to providers.

5.3 Cultural services and hospitality

Cultural services build social solidarity and promote national design capabilities. They are also critical for modern tourism. But both hospitality and cultural services were extremely hard hit by COVID-19. As of mid-2022, arrivals from foreign countries were still down by almost 50% on pre-pandemic levels; the number of nights provided by accommodation establishments had fallen 30%; and food-service revenues were 20% below their June 2019 level. (TIPS 2022:6)

Tourism is not a statistical category, but Statistics South Africa has developed a satellite account for it. It estimated the share of tourism in the GDP at 2,9% in 2017, and employment at 700 000, or 4,5%

[6] Calculated by comparing the number of graduates reported by the universities through the DHET HEMIS database with the number of people of relevant ages estimated by Statistics South Africa's Labour Market Dynamics database for 2019.

of total employment. In 2018, the World Bank estimated that tourism accounted for almost 9% of South Africa's total export revenues. The pandemic means that figures in 2020 and 2021 will be significantly lower.

Tourism has long been included as a priority sector in South Africa's industrial policy. Most of the support has, however, taken the form of marketing, with very little discussion of constraints on competitiveness across the value chain. These challenges to growth include the relatively high cost of air travel to South Africa, and of tourism accommodation in the main metros; measures by individuals and countries to avoid COVID-19, especially during surges; and various consequences of climate change on both domestic attractions and the appetite for long-distance air travel in the Global North.

There is even less data on cultural industries than on tourism. They are not a statistical category, and they depend heavily on gig, part-time and volunteer labour. Moreover, there is no systematic measurement of social capital or its implications for economic policy implementation and long-term growth. All of these factors make it difficult to estimate the outputs, employment and economic impacts of the cultural services. A first step for any research would be to develop a more comprehensive picture.

South Africa has world-class strengths in cultural activities. Support has, however, historically been inconsistent and patchy. Only the film industry has been integrated into industrial policy. Assistance for other kinds of cultural work, including areas where South Africa has internationally competitive producers such as music, literature and fashion, has been largely divorced from broader economic strategies. On the whole, it has targeted a few large events and headline creatives. As a result, cultural activities have mostly been unable to benefit from established industrial-policy systems and institutions. The consequences emerged during the pandemic, when the distribution of funding provided to support cultural workers and businesses ran into repeated crises.

5.4 Logistics and retail

Logistics – that is, freight and communications – as well as retail are obviously essential for getting products to market both locally and abroad, as well as to obtain inputs. These services are especially important for South Africa given its distance from major markets as well as the importance of regional integration for successful industrialisation.

In 2019, logistics provided employment for 840 000 people, although the number fell 70 000 through mid-2022 due to the pandemic. Value added in the industry came to R500 billion. The case study on freight transport in Annexure A provides more detail. Formal retail employed 1,6 million people with value added of R736 billion.

Efficient, low-cost and reliable logistics are crucial for many industries to compete on world markets. In East Asia, long-term, very large, coordinated regional investment in logistics was central to export-oriented industrialisation. The disruption of supply chains during the pandemic, as well as the impact of the Durban floods on South African exports in 2022, underscore the importance of logistics for maintaining global trade.

Logistics services depend on adequate infrastructure – roads, rail, ports and telecommunications, in particular. Historically, South Africa's excellent logistics infrastructure sustained domestic and overseas linkages centred on the formal sector and high-income suburbs. Dedicated Transnet lines have long underpinned growth in the auto and mining industries through, respectively, roll-on, roll-off and bulk handling facilities. Both infrastructure and service provision were weaker for smaller businesses, labour-sending regions and working-class communities. Transport and communications

across the region, especially outside of the Southern African Customs Union, were particularly inadequate, which has proved a major obstacle to regional integration.

In the democratic era, strategies for freight rail and roads have not been well coordinated with industrial policy requirements. This situation emerged, for instance, from the failure to adequately evaluate the economic impact of the Gauteng Freeway Improvement Scheme and the associated tolls, as well as Transnet's continued reliance on mining as an essential source of revenue. It also emerged in the persistent conflict between employees and self-employed people in freight transport and larger companies, and between small businesses and public transport agencies in the taxi industry.

Retail has been integrated into the master plans for some consumer goods, with considerable ongoing research into its role in shaping consumer demand. These measures reflect the complex realities of the sector. South African retails chains and advertising companies have been able to compete both overseas and internationally. Still, many observers argue that the dominant retail chains do not provide adequate market access for smaller local producers of agricultural products, clothing and other consumer goods. That in turn makes it difficult for new manufacturers to grow. They face stringent demands, not only that they compete with much larger producers or imports on quality and price, but also on the scale and timeliness of deliveries.

5.5 Cleaning and security

Cleaning and security are obviously important inputs for production. They provide only limited scope for technological advances, however. This holds true especially in countries, like South Africa, where wages for unskilled labour are low.

Formal cleaning and private security, excluding domestic work, employed 1,9 million people in 2019, up from a million a decade earlier. As a result, these activities climbed from 16% of total formal employment in 2010 to 23% in 2019, although they fell back to 21% in mid-2022. Value added by these industries came to only around R176 billion in 2019, however, or around 3% of the total for the economy.

In the formal sector, remuneration for cleaning and security work was at the norm for lower-skilled formal jobs. It was far lower for domestic and informal workers, however. They often also experienced very insecure and sometimes dangerous employment. (See Graph 11.)

The main indirect benefit for industrialisation of cleaning and private security services emerges around employment creation and opportunities for small businesses. The jobs do not, however, provide much scope for advancement or improved productivity in the longer run. Their importance for industrial policy depends on the extent to which short-run job creation and inclusion are prioritised relative to long-term competitiveness and industrialisation.

ANNEXURE A. CASE STUDIES

1 ENGINEERING SERVICES

Nokwanda Maseko

Engineering is a business service that cuts across different industries such as construction, mining, energy and information communication technology, among others. According to Khalil-Hassen (2017:1), engineers provide professional services such as feasibility studies, patent assistance, construction drawings, cost estimates and design. The scale of an engineering firm's role is determined on a project-by-project basis, with specialities including but not limited to civil, mechanical and electrical.

The importance of engineering services arise from (a) their contribution to the economy through employment creation and revenue; (b) their direct contribution to the building of infrastructure necessary for the economy to thrive; and (c) their economic contribution through innovation in various industries such as mining, energy and transportation. However, the local engineering services value chain largely depends on mining and government infrastructure projects for earnings. Further, because engineering services are linked to capital formation in other industries such as energy, housing and transport, their success depends, to some extent, on the successes of industries whose prospects it cannot predict or control.

The success of the value chain depends on its ability to attract and keep skilled workers. Currently there is a scarcity of engineers in South Africa, although the number of students enrolling in science, engineering and technology degrees continued to increase over the years. The increase is important, becase as TIPS (2015:53) notes, a decline in engineering faculties in some higher education institutions is one of the constraints to local innovation. This highlights the importance of the engineering value chain in the innovation process, which in turn is important for a country's economy.

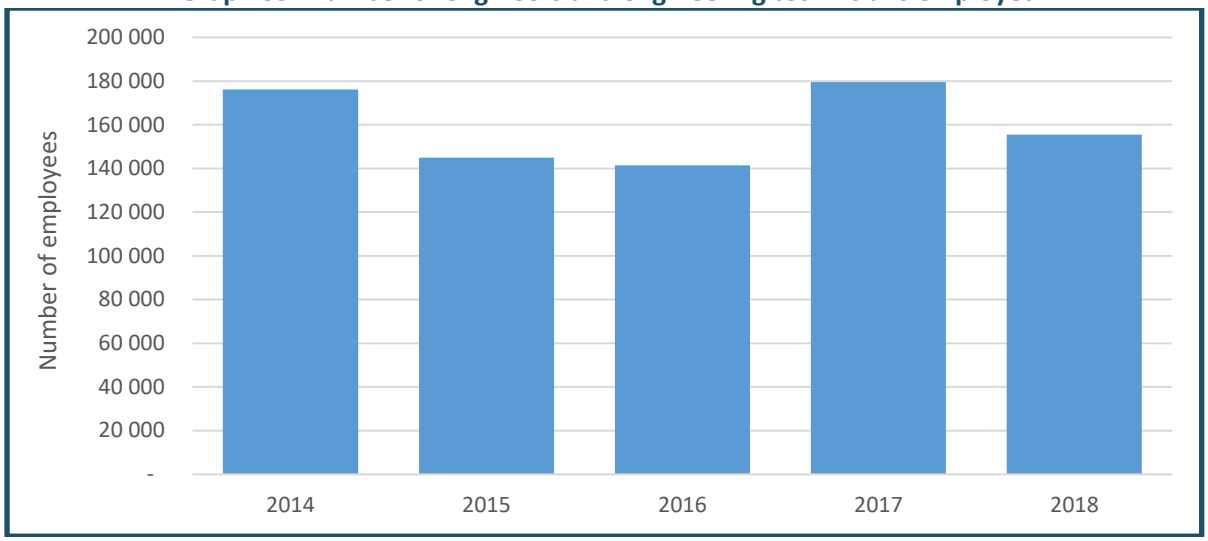
This case study analyses the engineering services value chain, focusing on employment and transformation; revenue; investment; as well as the constraints faced by the value chain. The study begins with a scope of the value chain, followed by economic outcomes based on the latest available data.

1.1 Outcomes

According to Khalil-Hassen (2017:4), the consulting engineering sector was valued at R25 billion in 2016, and was estimated to contribute between 0,5% and 0,6% directly to GDP. This, however, does not account for engineering services' contribution to other value chains through the provision of safe infrastructure and technologies that drive innovation and economic growth.

Based on Statistics South Africa data, the number of people employed as engineers or engineering technicians between 2014 and 2018 declined by 11,7%, from 176 000 to 155 000. These data do not include support staff. On average, engineers accounted for 32% of the total, with technicians accounting for the balance. Graph 39 shows the number of people employed as engineers and technicians between 2014 and 2018.

Graph 39: Number of engineers and engineering technicians employed



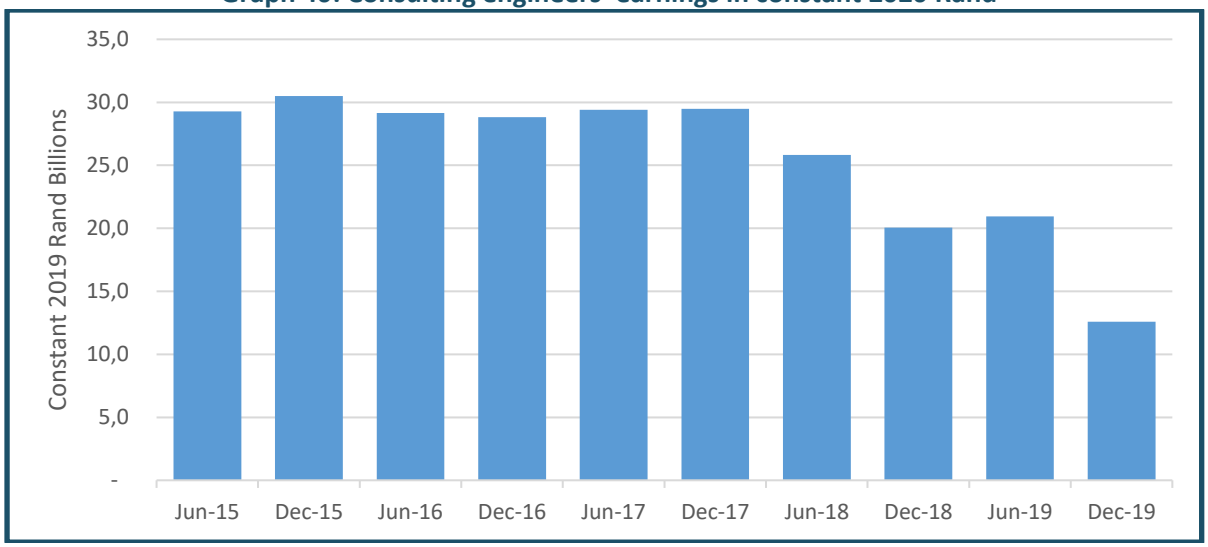
Source: Calculated from LMD data from Statistics South Africa electronic. Downloaded from http://www.statssa.gov.za/ in July 2020.

Women are under-represented among engineers and engineering technicians. In 2018, women accounted for 15,5% of those employed as engineers. The share of black women employed as engineers came to 11,1%, while for white women it was 3.8%. In contrast, Black men accounted for 32,7% in 2018, with white men at 37,7%. Women accounted for only 10% of engineering technicians.

The low number of women employed as engineers and engineering technicians is not representative of the number of women enrolled in science, engineering and technology (SET) degrees in universities. According to higher education data provided by the Higher Education Data Analyser, women accounted for 47.2% of enrolments in SET degrees. Black women accounted for 33.9% of total SET enrolments in 2018, compared to 38% for black men, 8.8% for white men and 7.3% for white women.

Data from Consulting Engineers South Africa (CESA) show that earnings among their members declined to R12.6 billion in 2019 from R29.3 billion in June 2015 (see Graph 40). In constant rand terms, this represents a 57% decline. Averaged over the five years, CESA reports that civil engineering work accounted for 52.7% of earnings, followed by structural engineering at 13%; project management at 7.3% and electrical engineering at 6%.

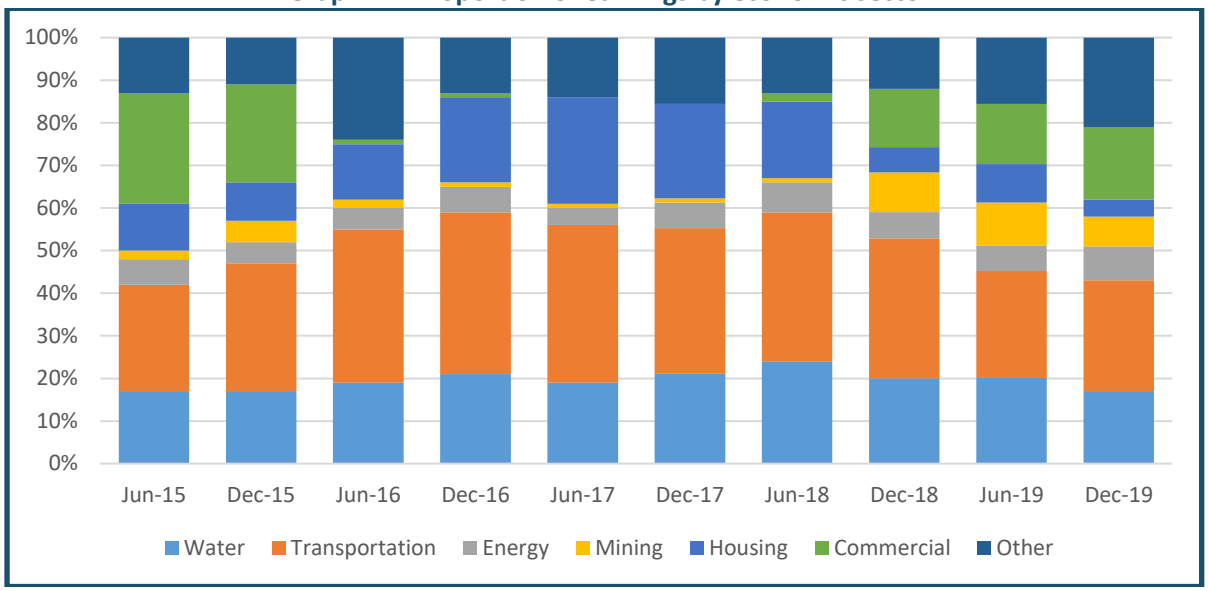
Graph 40: Consulting engineers' earnings in constant 2020 Rand



Source: Calculated using data from CESA (2019:30).

Transport, commercial activities (this includes manufacturing, communication, industrial buildings, financial activities and facilities management) and water activities account for the highest share of consulting engineers' earnings, at a combined 60% as of December 2019 (see Graph 41). The share of earnings from water, transport and energy has remained stable over the years. In contrast, the share of earnings from mining and housing has tended to fluctuate.

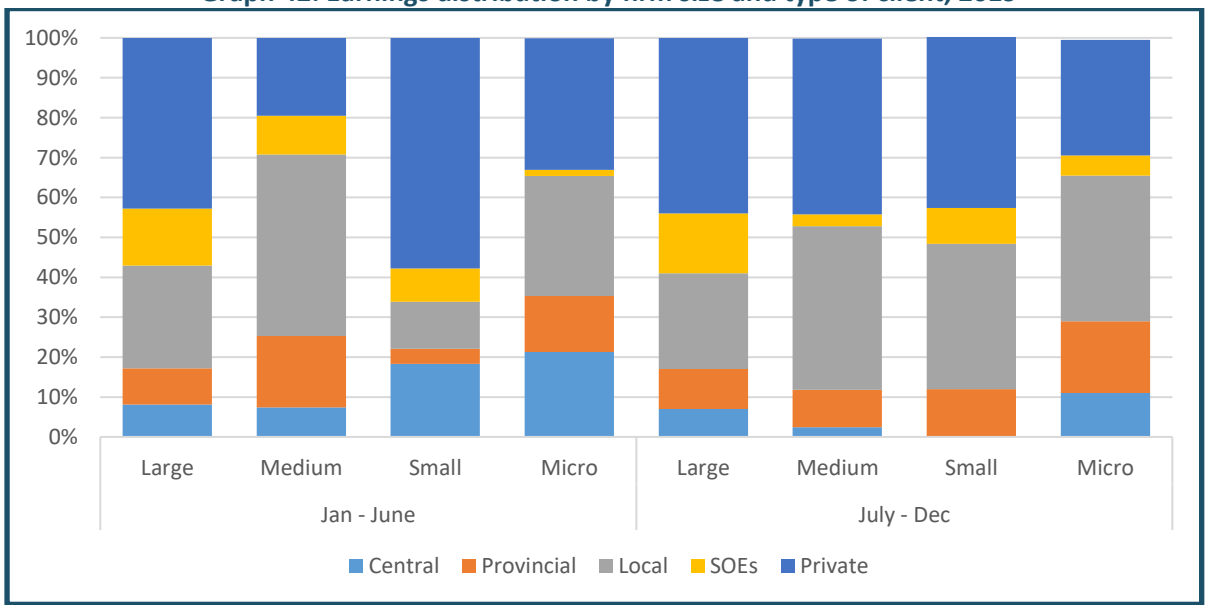
Graph 41: Proportion of earnings by economic sector



Source: Calculated from data from CESA (2019).

Between July and December 2019, 63% of CESA members' earnings were from the state, with a large portion coming from provincial government. At firm level, with the exception of micro enterprises whose earnings from private sector work amounted to 29% of total earnings, large, medium and small enterprises received between 43% and 44% of their earnings from the private sector (see Graph 42). Reliance on government spending means that companies suffer when the state reduces its spending.

Graph 42: Earnings distribution by firm size and type of client, 2019



Source: Calculated using data from CESA (2019)

According to Khalil-Hassen (2017:1), in 2016 there were over 540 engineering firms in the country, ranging from micro to large sized enterprises.

1.2 SWOT Analysis

The following analyses summarises the main strengths, weaknesses, opportunities and threats for the engineering services industry.

STRENGTHS	WEAKNESSES
- Advanced technical skills and capacity built up especially to serve mines and construction - World-class educational facilities - Increase in number of candidate engineers from previously disadvantaged backgrounds - Entry of young candidate engineers into market creates skills over long term -	- Dependency on state infrastructure and mining - Inconsistent and incomplete statistical data - Lack of standardisation in public procurement procedures creating inequalities - Skills shortages in part due out-migration - Lack of pipeline to historically African schools - Low levels of outsourcing to black firms unless for BBBEE purposes
OPPORTUNITIES	**THREATS**
- Shortage of skilled engineers means there's room for more locally trained engineers - Access to international markets - Government commitment to new build programme	- Sharp fall in construction demand due pandemic - Increased emigration of skilled engineers - Barriers to entry for previously disadvantaged people - Corruption within public procurement - Declining ability to get contracts due to inability to meet government and mining demands for transformation

1.3 Conclusions/Recommendations

Engineering services are critically important for industrialisation. The industry remains heavily dependent on government's infrastructure spending for the bulk of its work and earnings, however. It has also seen a brain drain, which has offset gains in the number of graduates over the past 20 years.

Engineering also remains disproportionately male and white, despite growth in the number of black and women students enrolling in SET degrees in universities. This points to a need for larger structural reforms that will address key issues around possible barriers to entry for people who come from historically disadvantaged backgrounds. Similar conversations and structural reforms need to happen regarding the inclusion of black businesses in outsourcing opportunities outside of BBBEE requirements.

There is a need for consolidated data for better decision-making. Key economic indicator data are not readily available given that each industry body does its own reporting. The lack of consolidated data is a hindrance for decision-making.

2 FREIGHT TRANSPORT

Itumeleng Mokoena

Freight has become increasingly integrated in production systems and their value chains across sectors in the economy. The freight industry is responsible for the movement of goods and commodities above 30kg in weight by transport from a point of origin to their destination (Who Owns Whom, 2019). Most industries depend on the freight industry to transport their commodities and goods to consumers through quick, reliable and cost-effective means (Rodrigue and Notteboom 2020). Freight services increasingly look at offering services from the perspective of transport and logistics comprising of packaging, containerisation, documentation, insurance and storage. (Li, 2014).

South Africa has a transport-intensive economy. According to the Gain Group (2020), five of South Africa's ten most competitive sectors – including mining, agriculture, fast-moving commercial goods (FMCGs), retail and the automotive industry – heavily rely on the transport industry. Transportation is therefore an essential pillar of South Africa's economic and social growth, particularly considering that South Africa is highly dependent on the transportation of goods by road; the central location of Gauteng's economic hub, which is located approximately 600 km from the nearest port; the country's dependence on imported goods; the distribution of agricultural and manufactured goods from production sites to economic centres; and the export of bulk commodities, mainly coal, manganese and iron ores from inland mines. Furthermore, reflecting on the geographical distance of South Africa from its major trading partners and the dependence on South Africa's transport infrastructure by its landlocked neighbours, South Africa is required to gear up its efforts to provide a transport industry that enables intra-trade facilitation.

At times, however, South Africa's transport industry falls short in terms of cost, speed, and reliability. According to Barloworld Logistics (2012), the transport sector is ranked the second least competitive sector out of South Africa's 16 economic sectors. This has a negative impact on the competitiveness and growth of the above-mentioned sectors and therefore on the South African economy. Constraints include high fuel costs, poor infrastructure investment (road, energy, ICT), port delays and delays with documentation, as well as the environmental impact of transport, among others. All of these contribute to the increased cost of doing business and further affect every aspect of transportation along the way, including trade, employment and sustainability. Efficient transportation supported by lower transport costs is thus crucial as it has the potential to boost industrial development and trade performance, which can lead to higher incomes and job creation, without the adverse effect on the price of goods (Who Owns Whom, 2019; Department of Transport, 2017). Transport services are also enablers for development and inclusive growth, through the development of agriculture and support of small, medium and micro enterprises.

The key inputs for freight transport are direct expenses incurred by providers of freight transportation. These include fuel costs, transport vehicles and maintenance, drivers' wages, physical infrastructure and networks, road taxes as well as the issuing of licences, documentation and permits. In addition to direct inputs, other costs of transportation include pollution, climate change, hijackings, vandalism and congestion, all of which reduce the efficiency of South Africa's transport sector.

The outputs of freight transport can be seen in improved sales for industries reliant on transport services. Transport services provide the flow of commodities and goods to agricultural, mining, FMCGs and retail sectors.

Agriculture and mining exemplify the importance of transport services for competiveness and success across the economy.

In agriculture, fruit, vegetable and meat produce are perishable with a short life, therefore it becomes important that trucks be provided with good refrigerated systems, along with cold chain management. It is also key to avoid and attempt to minimise transportation disruptions when considering the distribution of fresh produce. Poor transportation infrastructure and the increase in fuel prices greatly raises the costs for both farmers and agro-processors, and most businesses in the industry pass on the burden to consumers as they struggle to absorb the added costs. As transport networks improve for farmers and agro-processors, they provide new economic opportunities by accessing retail markets, particularly for small businesses and those operating from rural areas, through potential economies of scale.

In the mining sector, most companies depend on Transnet rails and pipelines. Recent challenges include cable theft, which has crippled coal exports, as well as debates around the efficiency of Transnet's dedicated line for Kumba iron ore shipments.

Fuel increases result in lower demand for goods and put pressure on volumes, trade and employment, while eroding profits. Recent surges in petrol prices due to the recovery from the pandemic and the Russian invasion of Ukraine will likely show a significant impact for 2021 and 2022.

In addition, cross-border management has not kept up with the increase in demand for transportation in the country. Challenges include the failure to standardise documentation between governments, poor coordination between data systems, inadequate investment in physical facilities, inadequate numbers of officials, and skills. (Barloworld Logistics, 2012). South Africa's Musina-Beitbridge border sometimes experiences delays of two or more days (Business Day, 2020). At the ports, ships are often stranded waiting to unload, leading to industries throughout the country facing delays that sometimes last for weeks. The congestion and bottlenecks can become a significant trade barrier for both exports and imports with a corresponding negative impact on the economy and industry. (Shipping and Freight Resources, 2020).

Transport often has detrimental effects on the environment through pollution, greenhouse gas emissions and noise. As previously highlighted, most goods and commodities in South Africa are moved through the use of long-distance transport service; however, in most cases, long-distance, especially road freight transport is not sustainable for both the infrastructure and the environment. This is because it often contributes to deteriorating road conditions as well as the high percentage of greenhouse gasses emitted annually by the transport sector. Road transport is a primary source of transport-related CO_2 emissions in South Africa.

A carbon tax has also been included in the fuel levy to minimise the environmental impact of transport and its infrastructure. While the addition of a carbon tax might help reduce emissions and promote environment sustainability, the tax, however, has increased transport costs for many companies operating in the industry, rendering road transport inefficient and uncompetitive as the industry is already under inflated financial pressure owing to road user charges, cross border taxes, vehicle licensing fees, inspection fees, legal requirements and tolling systems.

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