

Comparative Advantage of Value-Added Services: The Case of South Africa

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Global supply chains have changed the way in which products are produced internationally. The inputs into a final product include both intermediate goods and services, which adds value to the final product. Gross trade data is misleading and includes some double counting. This study questions whether traditional revealed comparative advantage (RCA) calculations for gross exports of services would offer different results from value-added services. RCA calculation was done for South Africa and the BRIC countries for both gross exports and value added services. The analysis showed that some countries performed stronger in terms of gross exports than in value added terms for some sectors, but others showed higher comparative advantage in value added terms. For South Africa, most services had a higher comparative advantage in terms of value added than for gross exports. The results indicated the importance of including value added data in international trade data analysis.

Key Words: services trade, comparative advantage, value added, South Africa, BRIC

JEL Classification: F100, F140

Introduction

World trade in services have expanded rapidly in the past few decades, mostly due to technological changes that enables services firms to supply their services to consumers in different markets without physically moving into that market. However, services that are exported directly are only a small part of the role that services play internationally.

The rise in global supply chains have changed the way in which companies operate, and the way in which products and services are produced and distributed internationally (Johnson 2014). Many companies now have different business activities in different parts of the world. The design of a product, production of components, assembly and marketing of products occur in different parts of the world. The World Trade Organisation (2014) refers to this phenomenon as ‘made in the world,’ meaning that a product is not only being made in one country, the different inputs

to a product now originate in many different countries. Declining costs of trade, transport and communication have allowed companies to splinter their production lines geographically across countries (Hoekman 2013).

However, the different inputs into a final product offering do not stop at the various intermediate products that are used to produce the final product, but also incorporate many services. Manufacturing firms make use of services to enhance their competitive advantage in the market. The use of services adds value to a firm's product, assists to cut operational costs, and contributes to the overall productivity of the firm (Banga and Bishwanath 2013).

In the past international trade theorists have used the well-known Revealed Comparative Advantage (RCA) calculation. The calculation uses gross export data for a specific sector relative to the total exports of that sector by all countries in the world (Balassa 1965). The results of the RCA would provide an indication if a country has a specific competitive edge or advantage in the exports of that specific sector. The RCA is usually calculated based on gross export data. However, the new phenomenon of global value chains have given rise to the argument that gross export data may include a vast amount of double counting as intermediate goods are imported and re-exported for production purposes of the final product, as is discussed further in the second section. Thus, it may be possible that the RCA results calculated on this data is not a true reflection of a country's performance.

Because services can be traded directly, but can also form part of the value chain, this study questions whether traditional RCA calculations for gross exports of services are very different from value-added services (or services as part of the value chain). Therefore, the aim of this study is to apply the concept of RCA to data on value-added services specifically to determine if there is a difference in the results of the calculation.

Therefore, this conceptual study wants to establish if a country has a high RCA in a specific services sector based on gross exports, whether the same sector will also have a high RCA when the service is used as part of the value chain of a product. For some sectors, it may even be that the direct or gross exports of a services sector do not indicate a significant comparative advantage, but the same services show greater comparative advantage as part of the value chain of other sectors.

If this is true, it would mean that a country's policies can be shaped accordingly, either promoting the direct exports of a specific service when it shows a high level of RCA based on gross exports, or assisting these

services to expand domestically in order to form part of a greater value chain, when it shows a high level of RCA in the value added data. The results will also be valuable to understand the importance of services within the value chain of products, as well as the importance of services within the domestic economy. The calculations, as discussed in the fourth section, will be done for South Africa, as well as for the BRIC countries, in order to compare the role of value-added services in some of the emerging economies. However, the implications are relevant for all countries around the world.

The following section will discuss trade in value-added in more detail, as well as the Koopman et al. (2010) study that forms the background to this conceptual study. Thereafter the services sector in South Africa is discussed in more detail, referring to the role it plays in the domestic economy. The section that follows will perform the empirical calculations of RCA on direct exports of services in South Africa as well as the BRIC countries. The same calculation will also be done on services value added data for the same economies. The aim is to determine if there is a vast difference in revealed comparative advantage in services directly exported versus value-added services. The results can contribute greatly to both the understanding of trade in services as well as interpretation of services trade data.

Trade in Value Added

Services are very diverse and in general classified as intangible goods. For that reason, the idea of services trade has been a daunting subject for many countries and researchers in the past and thus mostly avoided in international trade (Jones and Kierzkowski 2000). Fortunately, over the past three decades, technology has advanced and liberalisation came about due to the work done by institutions like the World Trade Organisation, resulting in astonishing growth in the services trade sector globally (van Rensburg 2000). It is becoming clearer that services are now also used in the global value chain in the form of outsourcing and/or offshoring. The quality of services are now becoming more and more critical as part of the total value chain of the final product. In many instances, the products offered by different producers are very alike but their competitive advantage is found in the associated services that assist to decrease costs as well as improve the speed and quality of the production process.

Francois and Manchin (2011) examined the value-added linkages between services and products, and found that the most exports in services

are embodied in exports of goods in a value added basis. Also in most countries, the forward and backward linkages between services and other economic activities have increased significantly. Banga and Bishwanath (2013) indicate for example that in the Indian economy, the contribution of services input to output and productivity growth in manufacturing has increased substantially since the 1990s. Which in turn have vast policy implications.

This has led to a debate regarding the statistical value of traditional trade data on gross exports and imports, as the export value of a product from one country, may incorporate many imported inputs from different countries around the world. Thus, the traditional gross import and export data includes a vast amount of double counting and would therefore in many cases completely overstate the true value of exports (Johnson 2014).

Maurer (2011) indicates that traditional trade statistics double-count the trade in intermediates because it does not allow distinction between intermediate and final goods. The same is true for services trade data. Several services can be exported directly whilst certain services also accompany a product indirectly through its value chain, resulting in double counting when determining the real value of imports of a country (Ahmad 2013). Timmer, Erumban, Los, Stehrer and de Vries (2014) further raises the complication that even though a product is 'completed' in one country does not necessarily mean that the domestic firm is in charge of the global value chain. They use the example of the iPod where Apple manages the production network from the US but the final product is completed in China.

This poses a challenge to the analysis of international trade flows of products and services. Several research papers investigate the sources of value added in supply chains by using Input-Output (IO) tables in order to find better quality data on trade flows. These studies aim to determine the true value of trade reflecting all intermediate trade flows. Koopman et al. (2010) provide a conceptual framework to decompose a country's gross exports into value-added components. They indicate that more decomposed trade data may reveal many implications for research and policy questions. One of the issues they address is the traditional measurement of revealed comparative advantage (RCA), as proposed by Balassa (1965), that indicates whether a country has a comparative advantage in a certain product or service.

Koopman et al. (2010) indicate that measuring RCA based on official gross trade statistics could be misleading as it incorporates a lot of the

double counting of trade data. They suggest that RCA should rather be calculated based on their domestic value-added data. They calculated RCA for some manufacturing sectors based on gross exports as well as domestic value added data. The findings proved to be very interesting and for some countries like China and India where a sector's gross exports may have indicated a comparative advantage, the domestic value added RCA figures indicated that they had a comparative disadvantage in the same sectors. For some other sectors, however, a country's gross exports did not indicate a revealed comparative advantage, but when RCA was calculated based on domestic value added in exports, the data suddenly indicated a distinct comparative advantage in that sector. Their study illustrated that our understanding of trade patterns and revealed comparative advantage could be adjusted substantially once we have the right data on domestic value added in exports.

This is now possible due to a new joint database that the OECD and WTO have published, 'Trade in Value Added' (Organisation for Economic Cooperation and Development 2014). This is the first database that indicates trade in value added by industry and by country. It is derived from OECD input-output tables and aims to better track global production networks and supply chains. This database makes it possible to do a variety of calculations, including RCA, on more realistic trade data. This database will be used in the empirical section of this study.

The Koopman et al. (2010) study only calculated RCA for some manufacturing industries for several countries, including South Africa. It indicated that in most of the manufacturing sectors South Africa had a higher RCA value when calculated for gross exports, than when it was calculated based on domestic value-added data. Therefore, this indicated that these sectors had a lower comparative advantage when the double counting of intermediate goods was taken out of the equation. This finding was already a very valuable contribution to the field of trade in value added, but the paper did not address the services sector as part of the value chain.

Because services can be traded directly, but can also form part of the value chain, this paper questions whether RCA calculations for gross exports of services are very much different from value-added services (or services as part of the value chain). Therefore, this study wants to establish if a country has a high RCA in a specific services sector based on gross exports, whether the same sector will also have a high RCA when the service is used as part of the value chain of a product. For some sectors, it may even be that the direct or gross exports of a services sector do not

indicate a significant comparative advantage, but the same services show greater comparative advantage as part of the value chain of other sectors. Timmer et al. (2014) indicate that the international fragmentation of production can expand the opportunities for countries to specialise according to their comparative advantage and therefore gain from trade more extensively.

If this is true, it would mean that a country's policies can be shaped accordingly, either promoting the direct exports of a specific service when it shows a high level of RCA based on gross exports, or assisting these services to expand domestically in order to form part of a greater value chain, when it shows a high level of RCA in the value added data. The results will also be valuable to understand the importance of services within the value chain of products, as well as the importance of services within the domestic economy. The calculations, as discussed in the fourth section, will be done for South Africa, as well as for the BRIC countries, in order to compare the role of value-added services in some of the emerging economies.

Services in South Africa

The importance of the services sector in the South African economy has grown considerably in recent years. It has played an important role as support input to the manufacturing sector and is also becoming one of South Africa's significant export sectors (Steuart and Cassim 2005). South Africa has shown a real economic growth rate of between 3 and 5 per cent over the last decade (South African Reserve Bank 2010). Services have also made a significant contribution to South Africa's GDP. The services sectors, which is reflected in the national account data as the 'tertiary sector,' has on average amounted to 66% of total gross value added (GVA) between 2005 and 2010 (South African Reserve Bank 2013). Employment data also indicate that almost 80% of workers were employed in the services sector in 2010 (Statistics South Africa 2010).

However, during the same period of 2005 to 2010, the direct service sectors' exports were on average only 18% of South Africa's total exports (International Trade Centre 2013). The sector breakdown of South Africa's services exports below in table 1, indicate that exports were mostly concentrated in the travel (tourism) sector (on average 63% of total services exports from South Africa), and the transportation sector (12% of total services exports). Much smaller proportions were allocated to the remaining services sectors such as business services, financial services,

TABLE 1 South Africa's Services Exports per Main Sector

Sector	(1)	(2)	(3)	(4)
Total services exports	11 300 100	14 003 500	0.24	0.16
Travel	7 516 130	9 085 040	0.21	
Transportation	1 533 220	1 615 190	0.05	
Other business services	837 120	1 115 380	0.33	
Financial services	534 350	827 260	0.55	
Government services, not indicated elsewhere	258 910	386 970	0.49	
Insurance services	124 310	273 050	1.20	
Computer and information services	109 390	290 020	1.65	
Communications services	193 000	221 750	0.15	
Personal, cultural and recreational services	113 820	66 830	-0.41	
Royalties and license fees	45 300	59 190	0.31	
Construction services	34 550	62 820	0.82	
Total product exports	46 991 047	71 484 309	0.52	0.84
Total exports of products and services	58 291 147	85 487 809	0.47	

NOTES Column headings are as follows: (1) exported value in 2005 (in US\$ thousands), (2) exported value in 2010 (in US\$ thousands), (3) percentage change from 2005 to 2010, (4) percentage of total products and services exports (2010). Adapted from International Trade Centre (2013).

insurance, communications and construction (International Trade Centre 2013).

The table also shows a vast increase in services exports between 2005 and 2010 in most sectors, however the total services exports were only 16% of total exports from South Africa in 2010 and products contributed 84% to total exports in 2010. Therefore, until 2010, the South African economy was still mainly driven by products, and the exports of services did not play a major role in South Africa's exports.

After the global financial crisis in 2008/2009, most developing countries have faced significant challenges to improve their economic performance, and generate sustainable economic growth. South Africa also have faced the same challenges, together with high unemployment and increasing levels of poverty. Therefore, many government initiatives in South Africa have been created to stimulate the economy and specifically to create a more focused export drive.

One of the sectors that have been identified as a thriving sector with potential for growth within the South African economy has been the ser-

vices sector. One of the objectives of the Department of Trade and Industry (DTI) in South Africa's Industrial Policy Action Plan (IPAP) is: 'To promote diversification beyond the economy's current reliance on traditional and non-tradable services via the promotion of value-addition characterised particularly by the movement into non-traditional tradable goods and services that can compete effectively in export markets and against imports' (Industrial Policy Action Plan 2013). The same notions are made in the New Growth Path as well as the National Development Plan of South Africa to move more focus to the exports of certain services industries over the next few years in order to assist in boosting economic growth.

Therefore, the government in South Africa recognises the importance of services as an engine of growth for the economy. However, the contribution of services lies in different areas. On the one hand, the government can focus on increasing direct exports of services for South Africa. This will mean assisting more services firms to enter the international trade arena and developing markets abroad. This process could be viewed as more longer term as many of the services firms are not necessarily ready to enter foreign markets in their current stance. They may need some intense development on the domestic side before they would be able to enter foreign markets on their own.

On the other hand, the South African government can also drive the participation of services firms in the global value chain arena. Many of the services firms, for instance financial institutions and logistics providers, as well as IT-related services, may already be involved in some form in a global value chain and are performing services to firms within the South African market, and these in turn are part of a larger global value chain. Therefore, they already play a role and need not develop that much more extensively. They may however need assistance to be introduced into potential new global value chains, and this is also relevant for services firms that have until now only served the domestic market and had no interaction in the global value chain arena.

Therefore, this avenue of 'exports' of services, or also termed 'trade in value added,' may be a more short- to medium term development possibility for services firms in South Africa. The following table, extracted from the 'Trade in Value Added' database of the OECD-WTO (Organisation for Economic Cooperation and Development 2014), indicates the role services as value added play in exports. The data is available for all OECD countries as well as a few emerging markets. For the purpose of

TABLE 2 Services Value Added in Gross Exports by Source (2009, in US\$ millions)

Country	(1)	(2)	(3)	(4)
Brazil	176 562	17 115	41 746	30
China	1 283 964	62 577	165 706	3 721
India	255 032	59 453	50 313	133
Russian Federation	331 375	24 240	68 526	99
South Africa	74 111	6 244	17 404	4

NOTES Column headings are as follows: (1) gross exports, (2) direct domestic service industry value added content of gross exports, (3) indirect domestic services content of gross exports (originating from domestic intermediates), (4) re-imported domestic services value added content of gross exports. Adapted from Organisation for Economic Cooperation and Development (2014).

this study, the table indicates only the figures for the BRICS countries in order to compare South Africa with similar developing economies.

The first column in table 2 indicates the gross exports of services in the specified country. The second column indicates the direct services value-added made by an industry in producing a good or service for export (Organisation for Economic Cooperation and Development 2014). In this case, China and India seems to be far ahead of the rest of the BRICS countries in terms of services that are directly involved in the value-added cycle of producing a final product or final service for exports.

The third column indicates the indirect contribution of domestic service suppliers made through domestic transactions, for exports. So these are services firms that sell services to other domestic firms (both producers of goods and services), who then in turn are part of the global value chain in producing a final product or services. Here South Africa's firms seem to make the largest contribution and this indicates that most services firms in South Africa are still only present in the domestic economy.

The fourth column indicates the re-imported domestic services value added content of gross exports, in other words the domestic services value-added that was exported in goods and services used to produce the intermediate imports of goods and services used by the industry in question (Organisation for Economic Cooperation and Development 2014). Here it appears South African services firms are not really playing any role.

The figures in tables 1 and 2 indicate that South African firms are not currently playing a large role internationally as direct exports or as part of the value-added of other products or services. If the South African

government wishes to extend the role of services in the economy as they state in the, it will be necessary to evaluate properly which services sectors really has the potential to export more, either in terms of direct exports, or in terms of the global value chain approach.

This concept is tested in the fourth section, where the RCA for South Africa is measured two-fold: firstly based on gross exports, and secondly based on the value-added data that is available from the OECD database (Organisation for Economic Cooperation and Development 2014). The results will give an indication of which services can potentially play a larger role in terms of direct exports as well as in a global value chain scenario.

Measuring Revealed Comparative Advantage for South Africa and the BRIC Countries

The Revealed Comparative Advantage (RCA) index, as developed by Balassa (1965), calculates how specialised a country is internationally in a specific sector. As explained in the previous sections, this study will use this method to calculate both RCA for direct/gross exports of services from South Africa, as well as for value-added services. The RCA index of each services sector is calculated as a ratio of South Africa's services exports of that sector to its total services exports, divided by the ratio of the world's services exports of that sector to its total services exports. An index that is larger than 1 implies that South Africa is relatively more specialised than the world average, and thus shows a comparative advantage in that services sector (Balassa 1965).

Table 3 shows the RCA calculation for South Africa's services sector based on gross exports. It is firstly calculated relative to the total services exports (RCA 1), and then it is also calculated relative to total exports of goods and services (RCA 2).

Table 3 indicates that if RCA is calculated based on gross exports relative to total services exports, South Africa has a comparative advantage in two sector groupings, first wholesale and retail trade, hotels and restaurants (ISIC 50–55), and secondly transport and storage, post and communication (ISIC 60–64). These are the only two sector groupings for which South Africa has an RCA value above 1.

The RCA 2 value, where the RCA is calculated for gross exports of services relative to exports of all goods and services, is even lower for all sectors and in this case, South Africa only has an RCA value above 1 for one sector, namely wholesale and retail trade, hotels and restaurants (ISIC

TABLE 3 RCA for Gross Exports of South Africa's Services (2009, USD millions)

ISIC* Services sector	South Africa	World	RCA 1	RCA 2
45 Construction	49.6	32903.8	0.42	0.28
50-55 Wholesale and retail trade; hotels and restaurants	5908.6	853831.7	1.91	1.28
60-64 Transport and storage, post and communication	4018.1	906912	1.22	0.82
65-67 Finance and insurance	911.8	461223.5	0.54	0.37
70-74 Real estate, renting and business services	364.9	784086.1	0.13	0.09
75-95 Community, social and personal services	465.9	189325.9	0.68	0.46
Total (services)	11719	3228283		
Gross exports of all sectors	74111	13718518		

NOTES * Rev. 3 sector code. Adapted from Organisation for Economic Cooperation and Development (2014).

50-55). These calculations indicate that South Africa is not very competitive internationally when exporting services. However, because services also form part of the value chain it is possible that the data includes a lot of double counting and therefore the RCA values are not a true indication of South Africa's competitive position.

Therefore using the available value added data from the OECD, the same calculation was done based on services value-added embodied in final demand. The RCA was once again calculated relative to total services exports (RCA 1), and relative to total goods and services exports (RCA 2).

Based on the calculations in this table South Africa now seems to have a much higher revealed comparative advantage figure for most of the services sectors, based both on total services exports as well as total of goods and services. Now South Africa seems to have a RCA value higher than 1 for almost all the sectors.

This could indicate that South Africa has many services that could play a much larger role as part of the value chain of products and other services, both directly and indirectly, even if they are not exported directly to foreign markets as much as one would expect. They still are very competitive domestically and perform a significant role in the economy.

In order to compare these results with other emerging economies, the same calculations were done for the BRIC countries, and the results for these countries each have interesting results. Table 5 below indicates the

TABLE 4 RCA for South Africa's Value-Added Services

ISIC* Services sector	South Africa	World	RCA 1	RCA 2
45 Construction	392.6	77634.2	0.94	0.83
50-55 Wholesale and retail trade; hotels and restaurants	7122.4	1165035.1	1.14	1.00
60-64 Transport and storage, post and communication	6968.9	880299.4	1.47	1.30
65-67 Finance and insurance	3792.3	587791.9	1.20	1.06
70-74 Real estate, renting and business services	3566.5	1380693.3	0.48	0.42
75-95 Community, social and personal services	1782.7	300370.7	1.10	0.97
Total (services)	23625	4391825		
Total of all sectors	61805.4	10129840		

NOTES * Rev. 3 sector code. Adapted from Organisation for Economic Cooperation and Development (2014).

TABLE 5 RCA for Gross Exports of Services in the BRIC Countries (2009)

ISIC*	Brazil		Russia		India		China	
	RCA 1	RCA 2	RCA 1	RCA 2	RCA 1	RCA 2	RCA 1	RCA 2
45	5.67	3.81	1.13	0.76	0.00	0.00	19.21	12.91
50-55	2.85	1.91	5.87	3.94	5.74	3.86	23.55	15.83
60-64	2.48	1.66	6.58	4.42	3.89	2.61	5.77	3.88
65-67	0.57	0.38	0.01	0.01	2.80	1.88	0.45	0.30
70-74	2.01	1.35	0.14	0.09	18.11	12.17	7.26	4.88
75-95	3.96	2.66	0.24	0.16	11.46	7.70	10.85	7.29

NOTES * Rev. 3 sector code. Adapted from Organisation for Economic Cooperation and Development (2014).

RCA for all the BRIC countries' services in terms of gross exports. RCA 1 was again calculated as the specific services sector's comparative advantage in terms of total services exports, where RCA 2 was calculated as the services sector's comparative advantage in terms of total exports of both products and services. A value above 1 indicates a comparative advantage in that sector.

The results in table 5 indicate that Brazil has a very high RCA in the gross/direct exports of most services sectors, besides the sector finance and insurance (ISIC code 65-67). As was the case for South Africa, the

TABLE 6 RCA for Services Value Added in the BRIC Countries (2009)

ISIC*	Brazil		Russia		India		China	
	RCA 1	RCA 2	RCA 1	RCA 2	RCA 1	RCA 2	RCA 1	RCA 2
45	2.37	2.09	3.08	2.72	5.18	4.57	2.33	2.06
50-55	3.80	3.35	6.49	5.72	4.23	3.73	15.13	13.34
60-64	2.75	2.43	6.01	5.30	3.62	3.19	6.64	5.86
65-67	1.52	1.34	1.15	1.01	4.44	3.92	12.81	11.30
70-74	1.49	1.31	1.66	1.46	5.36	4.72	5.35	4.71
75-95	2.99	2.64	3.52	3.10	5.87	5.18	10.77	9.49

NOTES * Rev. 3 sector code. Adapted from Organisation for Economic Cooperation and Development (2014).

RCA value is much higher when calculated in terms of total services exports (RCA 1) than it is in terms of total exports of products and services (RCA 2). Russia shows a lower comparative advantage in construction, finance and insurance, real estate and community services than Brazil, but outperforms in the wholesale and retail trade services (ISIC code 50-55) as well as transport and storage and communication (ISIC code 60-64).

India shows a very high RCA level for almost all services sectors but has a specific comparative advantage in the real estate sector (ISIC code 70-74) as well as community services (ISIC code 75-95), and outperforms the other countries in these sectors. China has the highest RCA level in construction (ISIC code 45) as well as wholesale and retail trade (ISIC code 50-55).

When comparing the results for BRIC to the results for South Africa in table 3, it is clear that South Africa does not fair very well in terms of comparative advantage in comparison with the other BRIC countries. The RCA levels in terms of gross exports from South Africa are much lower in most sectors than in the BRIC countries.

Table 6 indicates the RCA 1 and RCA 2 calculations for the BRIC countries, in terms of value added data for services, as was done for South Africa in table 4.

Table 6 indicates that some countries perform much better in terms of value added services than in terms of gross exports for certain sectors, for example Brazil performs better in value added terms for transport and storage and communication (ISIC code 60-64), as well as finance and insurance (ISIC code 65-67). Russia also has a much higher comparative advantage in finance and insurance (ISIC code 65-67), real estate

(ISIC code 70–74) and community and personal services (ISIC code 75–95). India performs better in terms of finance and insurance (ISIC code 65–67), but not in any of the other sectors. China performs better in terms of wholesale and retail trade (ISIC code 50–55), as well as finance and insurance (ISIC code 65–67). However, in the other sectors these countries performed better in comparative advantage terms when calculated based on gross exports.

The results indicate that for each country, there is a different pattern and for one country, there might be a comparative advantage in the gross exports of a service that is higher than in value added terms, however, for another country, the same sector could have a higher comparative advantage when calculated in value added terms.

These results therefore indicates that each country should not only evaluate their current and potential exports in services based on gross exports, but that it is important to also evaluate it from a value added perspective. The results highlight the importance of including value added data in international trade data analysis as well as country performance analysis, and in policymaking.

For South Africa most sectors such as construction (ISIC code 45), transport and storage and communication (ISIC code 60–64), finance and insurance (ISIC code 65–67) real estate (ISIC code 70–74) as well as community and personal services (ISIC code 75–95), had a much higher comparative advantage in terms of value added. Therefore in South Africa's case the services firms are currently not very strong in terms of direct exports but could have a potentially large role to play as value added in the global value chain of products and services. This is an important issue to be highlighted in future policies and decision making of the South African government.

Conclusion

The rise in global supply chains have changed the way in which companies operate and the way products and services produced and distributed internationally. The design of a product, production of components, assembly and marketing of products occur in different parts of the world. The different inputs into a final product offering do not stop at the various intermediate products that are used to produce the final product, but also incorporate many services during the process. The use of services adds value to a firm's product and services are playing a much more integrated role in the global value chain.

The study focused on South Africa and the third section showed that South Africa's services sector underperforms in terms of gross exports as well as part of the value chain in current trade figures. The government's drive to increase exports in manufactured products and services needs to be very well planned to take into account the current state of the services industry. Their focus should be based on a proper analysis of the services sector in South Africa, both in terms of current gross exports as well as services in the global value chain.

This study questioned whether traditional revealed comparative advantage calculations for gross exports of services would offer different results from value-added services. If this is true, it would mean that a country's policies can be shaped accordingly, either promoting the direct exports of a specific service when it shows a high level of RCA based on gross exports, or assisting these services to expand domestically in order to form part of a greater value chain, when it shows a high level of RCA in the value added data. The RCA calculation was done for South Africa as well as the BRIC countries based on gross exports of services as well as services as a value added to other products and services.

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