

# Systems view of BRICS value chains and how South Africa can host some for BRICS participation in African Continental Free Trade Area

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## Abstract

Global value chains have shaped world production and trade. This research article examines the connections between the value chains of the BRIC economies and South Africa's role in positioning BRICS-Africa trade as a member of the African Continental Free Trade Area (AfCFTA) using BRIC value chains that has been tailor-made to increase BRICS share of the AfCFTA market. It argues that in order for BRICS's to increase its competitiveness in AfCFTA and the global market, intra-BRICS trade should be based on value chains that has been developed specifically to support BRICS and provide it with the competitive leverage necessary to explore new market opportunities. AfCFTA presents such a market. Additionally, the article reveals that for BRICS to succeed in AfCFTA through its value chains, it must recognise South Africa's potential (to host some of these) and its geographic location on the African continent. Furthermore, BRIC needs to appreciate that South Africa can successfully host some of BRIC nations' value chains. This indicates that South Africa's membership of BRICS and AfCFTA provides an opportunity that can benefit BRICS through its participation in AfCFTA using value chains approach. This however requires academic interrogation, which will yield information and knowledge that can be used to formulate programmes, policies and strategies of how BRICS value chains can be of significant support to AfCFTA.

**Key Words:** Systems view of BRICS value chains; African Continental Free Trade Area; BRICS; South Africa

## Introduction

BRICS countries are exclusively distinguished by rapidly growing economies that are emerging in character, have vast populations, and whose governments are eager to position their countries in global markets through collaboration, trade, and peer support. O'Neil (2007) predicted that BRICS would eclipse the G7 economies by 2032. Chen (2012) argues that BRICS' potential for growth and its strength to contribute to the world's economy present an obvious shift in the international balance of power, with gravity moving from the north to the south (Chen, 2012). There are some unique things about the BRICS, like the fact that its trade agreements allow members to get into new markets, improve their economic competitiveness through support, and gain geopolitical advantages through the help of other BRICS members.

To strengthen BRICS's competitiveness in the world market, intra-BRICS trade needs to be reinforced through value chains that have been specifically developed to support BRICS and give it competitive leverage so that it successfully explores new market opportunities. The African Continental Free Trade Area (AfCFTA) and the Belt and Road Initiative (BRI) present such market opportunities. In fact, an integrated value chain system within BRICS is needed to bridge the existing fragments of trade and production within BRICS. It is important to establish and connect the geographically fragmented production processes into an interlinked system of production that is domiciled within BRICS countries (Hernández, Martínez-Piva, & Mulder, 2014). Through this system of value chains,

BRICS will derive the full benefits of market opportunities such as AfCFTA using technologies developed through collaboration among BRICS countries, which can then be deployed across Africa to improve the production of high-quality goods that can be traded between BRICS and Africa.

This type of engagement, which seeks to help Africa improve the quality of its products through technology transfer, will position BRICS well in the AfCFTA. However, for BRICS to succeed in this, it must consider South Africa's potential and its geographic location on the continent of Africa. It further needs to acknowledge that South Africa can successfully host some of the value chains owned by BRIC nations. These may include the deployment of technologies; processing of raw materials from Africa for BRIC markets and Africa; processing of agricultural products such as fruits, nuts, and others; using technologies developed by BRICS countries; assembling and redistribution of machinery and other equipment developed within BRICS; strengthening of Africa's industrial sectors, such as mining, through the deployment of state-of-the-art technologies researched and developed within BRICS; and modernization of African pharmaceutical industries through BRICS developed technologies. These can be spread across the continent through South Africa as a springboard (Horner, 2021).

BRICS is certainly capable of developing value chain systems that are relevant to the AfCFTA. For instance, China has set the trend through the BRI, the Forum for China-Africa Cooperation, various bilateral agreements with African countries, and the policy of technology deployment to Africa, which intends to support Africa's industrialization. These initiatives have seen countries like Kenya, Tanzania, Morocco, Egypt, Senegal, Nigeria, Angola, Mozambique, the Democratic Republic of Congo and others benefit in various ways. On the other hand, Russia has increased its trade with North African countries, with a trade turnover of US \$11.7 billion in investments.

Nigeria is India's African economic partner, while Brazil maintains links with its colonial allies in Africa, such as Mozambique and Angola. Nigeria and Angola are vital commercial partners for Brazil, with the latter exporting industrialized goods and purchasing crude oil (Vinicius de Freitas, 2016). What is obvious with these trades is that BRICS countries prefer to trade with Africa individually rather than as a bloc. This fragmented link between BRICS and Africa portrays a lack of a coordinated approach to the African market, and this might be a BRICS impediment towards full participation in the AfCFTA.

With the AfCFTA focusing on increasing intra-African trade, BRICS needs to come up with a strong strategy that will make BRICS a bloc of choice in the African market. This gives South Africa a chance to demonstrate to BRIC partners that it is a trusted partner that showcase BRICS value chains and place them in the African market. There is therefore a need to conduct research that will identify these value chains. For South Africa an assessment of which of these can be based in the country requires a systemic analysis. Systems thinking is important when mapping value chains because they show how many different parts of product research and development, production, and distribution work together in a globalized world.

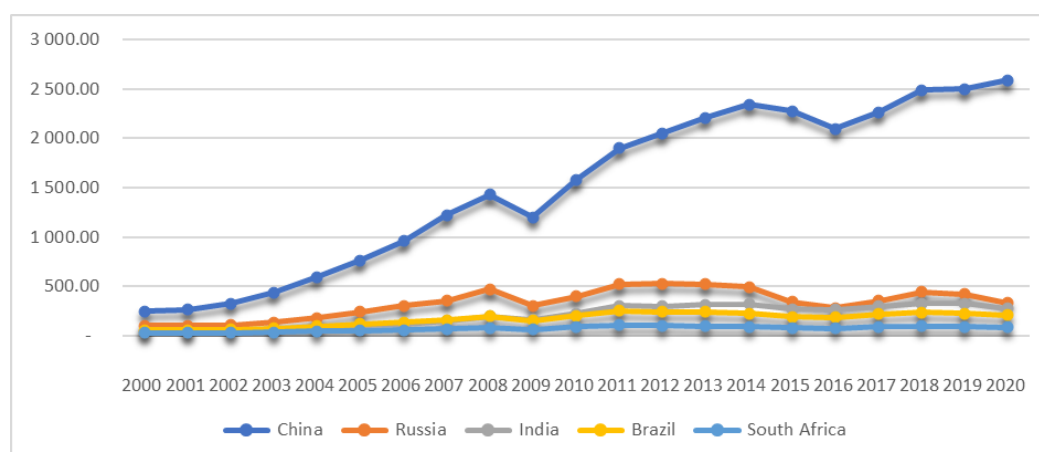
Globalization has definitely changed the way countries trade and engage with one another and across the world. Staritz and Reis (2013) have argued that the global economy is increasingly structured around GVCs that account for a rising share of international trade, global gross domestic product, and employment. This is a claim also supported by Gereffi and Fernandez-Stark (2011). Trading in goods and services from a global standpoint, especially in the age of the Fourth Industrial Revolution, has further emphasized the complexity of GVCs. Today, the bulk of goods and services are purchased online and distributed through a chain of interlinked warehouses.

Within this context, GVC offers opportunities to study how Africa's economies can be interlinked and how relevant they are to the global economy. The structure of the global economy is such that

transnational corporations break down their operations and locate them in different regions, none of which, or few of them, are located in Africa (Staritz and Reis, 2013). While several studies on GVC (see; De Backer and Yamano, 2011; De Marchi, Giuliani, and Rabellotti, 2018; Farole, 2016; Ignatenko, Raei, & Mircheva, 2019; OECD, 2007; Rasiyah, Kong, & Vinanchiarachi, 2011; Staritz, Plank, and Morris, 2016; Vermeire, Bruton, and Cai, 2017) have presented different contexts and case studies, the argument that foregrounds a call to develop value chains that link Africa with BRICS technologies derives from the fact that Africa is treated as a pariah within the global value chain discourse. Hence, the continent supplies most of the natural resources used in various processes and goods produced by companies in the world. In addition, due to weak intra-African trade, industrial links in Africa are weak (Del Prete, Giovannetti, & Marvasi, 2018). This situation needs to be improved through the deployment of BRICS value chains.

### BRICS trade with Africa as basis for Value Chains development

Among BRICS countries, China has consistently been the top exporter of products among BRICS since 2000. Its proportion of BRICS exports has expanded dramatically. In 2000, China accounted for more than half of all BRICS exports. Russia on the other hand has traditionally been the second highest exporter among the BRICS nations, while India overtook Brazil in 2009 (O'Neil, 2021), South Africa has been the lowest (Figure 1).



**Figure 1:** Export of goods by the BRICS countries from 2000 to 2020(in billion U.S. dollars)

Source: Statista (2022)

Within BRICS, while China's trade is well documented, Brazil has also been trading with Africa, although its focus has been with the Portuguese-speaking countries. In terms of overall assessment of exports, Brazil ranked 25th in 2019. Indications point to the fact that Brazil's exports to Africa surged to US\$ 1296.39 million in December 2021, up from US\$ 837.91 million in November 2021 (Trading economics,2021) (Figure 2). The country mostly exports raw food to Tanzania, South Africa, Mauritius, Zambia, and other countries.

While Brazil's products' value addition to Africa is not yet considerable owing to the nation's position as a developing country, the nation's services have formed the Youth Technical Training Program via the Brazil-Africa Institute and the African Development Bank (AfDB). The goal of the program is to teach young African professionals about research and technology transfer, which will help build local capacity (AFDB, 2017).

Consequently, Imports from Africa into Brazil decreased from US\$622.78 million in November of 2021 to US\$ 455.02 million in December 2021 (Figure 2). Like Brazil, Russia also offers raw

materials. Most of its total exports were natural resources, such as metals and electricity (Trading Economics, 2022).

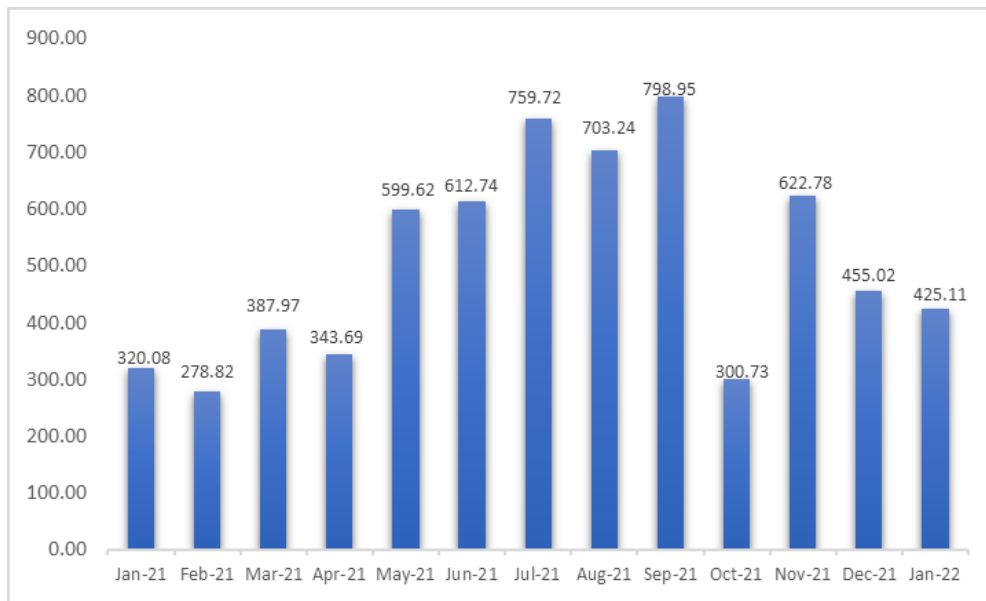


Figure 2: Brazil import from Africa

Source: Trading economics (2021)

Russia has stronger commercial ties with North African nations, with a trade transaction of US \$11.7 billion in 2019 (Trading Economics, 2021). In 2020, Russia sold goods worth US \$335.5 billion to countries throughout the globe (Workman, 2021) (Figure 3). It principally exports hydrocarbons (more than half of total exports), solid fuels, wheat and meslin, iron and steel, precious metals, precious stones, and wood. Only 2.5 percent of Russia’s total African exports are delivered (Trading Economics, 2021). Russia is also a key weapons exporter to Africa. Between 2016 and 2020, Africa accounted for 18% of all Russian weaponry supplies, with Algeria being the largest recipient (Clifford, 2021).

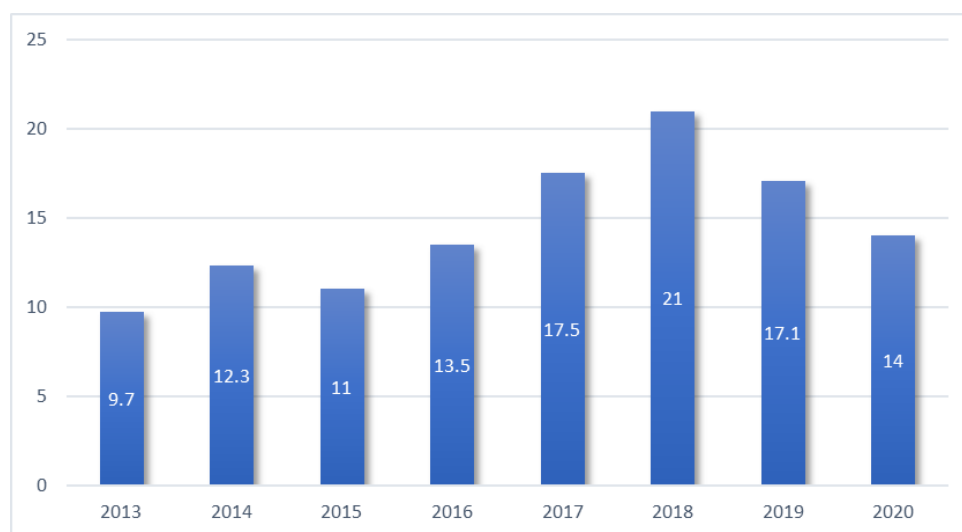


Figure 3: Trade revenue between Russia and African countries from 2013 to 2020 (in billion U.S. dollars)

Source: Statista (2021)

India is the only BRIC nation with a service trade surplus (Chen, 2012). In 2019, India’s top exports included computer and information services (US \$94.4 billion), personal travel (US \$27.8 billion), transportation services (US \$21.1 billion), financial services (US \$4.82 billion), and other professional services (US \$44.5 billion) (Figure 4). However, poor commercial transactions between India and Africa may be due to geographical distance, which results in high trade costs (Trading Economics, 2021).

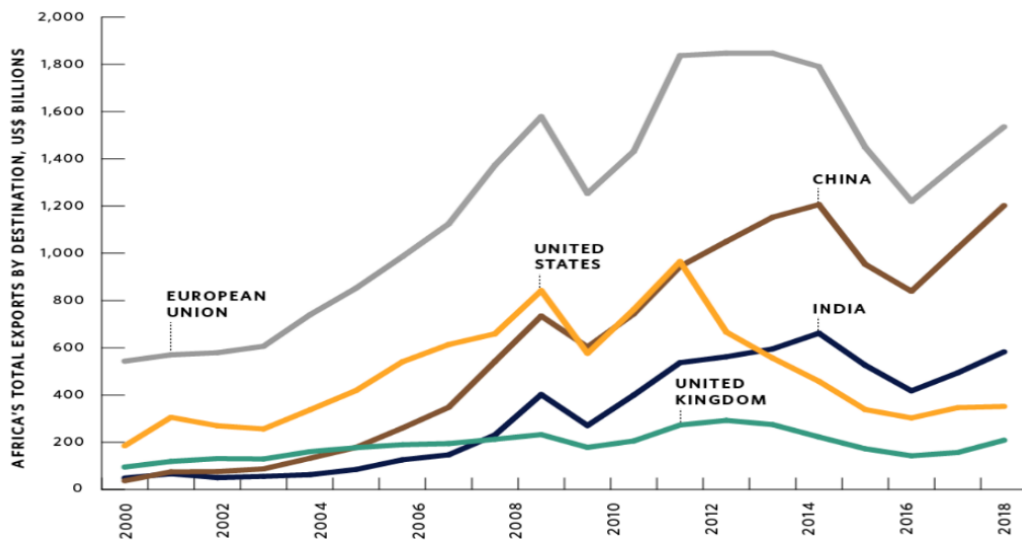


Figure 4: China and India share of Africa’s Export

Source: Usman & Landry (2021)

The majority of value chain components throughout the BRICS countries are linked to a single cluster—the Chinese sector, validating the cliché that China is the “world’s factory” (Ye & Voigt, 2014). In addition, China is a significant investor in Africa. It is quite visible in the light manufacturing sector, particularly in textiles and footwear (Zhang, 2021). It is also involved in digital GVC outsourcing across the globe. It is the world’s leading supplier of artificial intelligence technologies.

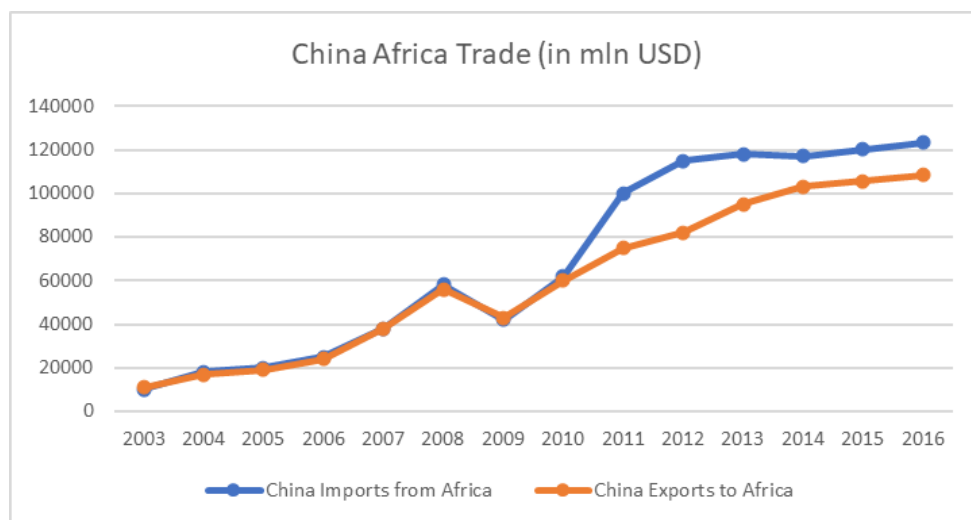


Figure 5: Africa-China Trade

Source: Author’s calculation from using data from Miao & Borojo (2020)

Due to the health-care crisis caused by the COVID-19 outbreak, China emerged as a major provider of medical supplies to Africa during COVID-19 (UNCTAD, 2021). It has since become a central player in various GVCs and the most significant and leading contributor to the BRICS trade with Africa (UNCTAD, 2021; Makgetla, Levin & Mtanga, 2019).

South Africa's primary exports to the other BRICS countries seem to be mainly raw materials, semi-finished products, and fruits. With global markets becoming increasingly volatile as a result of trade disputes and the COVID-19, policymakers have shifted focus towards regional value chains as an alternative structural transformation impetus (Boys & Andreoni 2020). The AfCFTA could help BRIC countries work together to build value chains that seek to improve relations with Africa. This will shift Africa's participation in the global value chain by encouraging intra-regional trade and commerce. It is anticipated that manufacturing exports will rise significantly with intra-African trade (Zhang, 2021). As already emphasised, the AfCFTA provides South Africa with an opportunity to host some of the value chains developed by BRICS for the purpose of participating in the AfCFTA. South Africa currently has a 22 percent share of intra-AfCFTA exports, with a potential market share of 30 percent by 2035 (World Bank 2020).

### South Africa's potential of advancing trade in Africa through BRICS Value Chains -lessons from China

South Africa is one of the most industrialized countries in Africa. This is supported by a fully functional system of innovations. South Africa's national system of innovation derives its origins from the 18th century. The first formal documentation of scientific and technological activities in South Africa dates back to the 18th century. A functioning national system of innovation alone is not enough to position a country in the market. Thus, drawing from Chinese experiences, South Africa could well position itself in AfCFTA using BRICS-linked value chains. It can further develop and boost its GVC through its links with other BRICS countries who are keen to participate in the AfCFTA.

China benefited immensely from the GVC's "spillover effects by positioning itself as a country capable of adopting and adapting technologies developed by other countries." Chinese companies were able to increase the appeal of their products to foreign consumers by joining value chains as contract manufacturers. This further enhanced the global competitiveness of China. It is estimated that over 90% of all Chinese manufactured goods exports are via GVCs, which have eliminated conventional entry hurdles to overseas markets for made/assembled in China commodities. China's export miracle has been fuelled by the positioning and penetration of Chinese products into developed and emerging markets (Seamus, 2021). Once located in a country, companies are more likely to innovate in technology and product development. This strengthens the national system of innovation of a host country.

By hosting the value chains of high-tech companies, China provides an opportunity for Chinese enterprises to participate in the value-creation processes of high-tech products. This transformed China into one of the countries that exports iPhones to the world. Participating in the GVC also assists enterprises of the host country to participate in the distribution and retail networks. Chinese products are now sold via various global distribution and retail networks that have been built by GVC-led suppliers to multinational corporations.

As hinted previously, trade fragmentation, which exists within BRICS, can only be sealed through GVCs. With fragmentation being exacerbated by the manufacturing sector because of modularization, it is no longer necessary for a nation to create production facilities for an entire industry in order to manufacture completed goods. By participating in the GVCs, businesses in the host country are able to improve and increase their production capacity in areas where they have a competitive advantage.

GVCs provided Chinese enterprises with a one-of-a-kind channel for accessing new expertise and industrial know-how. This can be replicated in South Africa if the country successfully negotiates hosting some of the BRICS value chains.

Face-to-face engagement, information transfer from lead businesses, the need to embrace international standards, and training of the local staff by lead firms are all benefits of participating in the GVCs. Through locally developed technologies and know-how, Chinese enterprises were able to be innovative and be able to add value to goods. This transitioned China from being a pure assembly nation to one that designs and enhances production processes. Through their involvement in GVCs, Chinese firms have been able to accomplish “nonlinear upgrading.” This means Chinese enterprises have been able to place themselves within GVCs by capitalizing on hosting value chains developed elsewhere. Through this model, South Africa will benefit immensely through this approach of acquiring technological know-how through participating in the GVCs.

South Africa is one of the influential economies on the African continent that are integrated into the world economy. The interaction of South Africa with the economies of the continent is such that its footprint has expanded considerably since its integration into Africa. Global value chains offer an opportunity to develop insights on how Africa can successfully trade with itself. The significance of South Africa as an example of a developing country with the potential to strengthen the continent’s value chains provides limitless opportunities for academic research (Gereffi & Fernandez-Stark, 2016).

### Benefits of BRICS Value Chains to Africa

A slogan “*designed in Germany*” but “*made in China*” arose when European countries shifted their production to China. This came at a time when China was in desperate need of technology and job opportunities for its citizens. Through this, China today is the second largest economy in the world and has earned itself the status of being a global player in trade, investment, and technology development. Meanwhile, it improved its technological competitiveness and human capital, which are now the foundations of China’s economy and contribution to the world. The AfCFTA presents Africa with a similar opportunity. Africa is endowed with a young generation, which can be used in a similar way to what China did a while ago. Therefore, a “design in BRICS” but “made in Africa” needs to be replicated for Africa to realize the AfCFTA. This will provide BRICS with the prospect of developing value chains that will reinforce its presence in Africa and allow BRICS to contribute to the realization of AfCFTA.

Value chains that link BRICS countries have become extremely necessary, especially for trade among BRICS countries and the competitiveness and economic prosperity of the bloc. Over the last few decades, two significant phenomena have shaped international trade. These are the increasingly integrated nature of world markets and the “disintegration” of production processes, which allows for the global dispersion of different value-added activities in value chains or global production networks (Hernández, Martínez-Piva & Mulder, 2014).

A country gets involved in a value chain through its specialisation, either upstream or downstream. Most importantly, the location of a country in the value chain is essential (Ye, 2014). While this is a common norm, African countries participate in global value chains as spectators rather than as active participants. Over the years, Africa’s contribution to the global economy and value chains has been through the provision of unprocessed raw materials. The AfCFTA will overturn this through the establishment of value chains that connect African countries to the world. This will convert Africa into a distributor of goods and products “made in Africa”. Through active involvement in AfCFTA and the establishment of Africa-centred value chains, South Africa stands to benefit as the only member of BRICS that is located in Africa.

These value chains will change the game of globalisation by allowing Africa to reap the benefits of the BRIC-Africa relationship without disrupting the entire global value chain of specific products. A path of production processes based on targeted products therefore needs to be developed to promote the equitable sharing of benefits between BRICS and African countries (Seniuk, 2019). South Africa's connection to BRIC will promote mutual and symbiotic benefits for African states in equitably distributing these value chains across Africa. For AfCFTA, South Africa's BRICS membership represents a potential to create and expand intra-BRICS commerce in Africa.

### Concluding Remarks

For decades, the European Union (EU) has pursued the interests of its member states as a bloc. Its interaction with the African continent has been both at the individual member level and at the EU bloc level. In recent years, the geopolitical influence of the EU has been softened by the exit of Britain (BREXIT) from the bloc. Additionally, the bloc has challenges of political instability, which need its attention. Influential countries like America have also adopted an inward-looking policy that prioritizes their internal interests over global issues and investments. Its withdrawal from Afghanistan provides a practical example.

While these drastic changes are happening internationally, Africa has pinned its hopes for development on the AfCFTA, Agenda 2063, and the United Nations Sustainable Development Goals. BRICS countries share similar aspirations for the development of their member countries. Through well-crafted value chains, BRICS will be able to seize the void that has been left by the space provided by the EU and America. South Africa, as a member of BRICS, is the only country that can help the bloc understand African markets so that it can make a well-informed decision on how BRIC can support Africa to successfully implement the AfCFTA.

Global value chains offer an opportunity to develop insights on how Africa can successfully trade with itself. The significance of South Africa as an example of a developing country with the potential to strengthen the continent's value chains provides limitless opportunities for academic research.

In doing this, it is here proposed that systems science and modelling, such as system dynamics modelling, are techniques worth considering when studying linkages within the GVC. The primary reasons for using system dynamics in value chain analysis are improved ability to capture complexity via feedback, dynamic behaviours, and time delays, modelling the dynamics and roles of support systems over time, incorporating multiple causal factors, and measuring performance and policy interventions over time (Muflikh, Smith, and Aziz, 2021). This can be broadly attributed to the need to improve the analytical rigour of value chain analysis. The applications of system dynamics in value chain analysis varied according to the commodities analysed, the modelling process followed, the dynamic complexity modelled, and the scope of the value chain components analysed.

### References

- Africa Development Bank (AFDB), (2017). Annual Report 2017. Available: [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.afdb.org%2Ffileadmin%2Fuploads%2Fafdb%2FDocuments%2FGeneric-Documents%2FAfDB\\_Annual\\_Report\\_2017\\_EN.pdf&clen=6593690&chunk=true](chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.afdb.org%2Ffileadmin%2Fuploads%2Fafdb%2FDocuments%2FGeneric-Documents%2FAfDB_Annual_Report_2017_EN.pdf&clen=6593690&chunk=true)
- Asuelime, L.E. (2018). The Pros of South Africa's Membership of BRICS: A Re-appraisal. *Journal of African Union Studies*, 7(1):129-150. <https://doi.org/10.31920/2050-4306/2018/v7n1a7>
- Boys, J. & Andreoni, A. (2020). Promoting industrialization Africa global versus regional value-chains. *Globaldev*. [Online]. Available: <https://globaldev.blog/blog/promoting-industrialization-africa-global-versus-regional-value-chains> [2022, January 19].



- Brent, A.C. & Simelane, T. (2017). *System Dynamics Models for Africa's Developmental Planning*. Africa Institute of South Africa. Pretoria.
- Buturac, G. (2013). Beyond the Global Recession: Mutual Trade and Economic Convergence. *Ekonomski Pregled*, 64(4): 303–326. doi: <http://hrcak.srce.hr/ekonomski-pregled?lang=en>.
- Chen, L. (2012). The BRICS in the global value chains: an empirical note. *Cuadernos de Economia* . Available: <file:///c:/users/splst/downloads/lc2012rcethebricsintheglobalvaluechainsanempiricalnote.pdf> [2021, September 19].
- Checkland, P. (1981). *Systems thinking, systems practice*. Chichester. John Wiley and Sons, NY.
- Clifford, C. (2021). 12 July. The Bear is back: Russian re-engagement with Africa is picking up with Putin in the driving seat. *Africa Portal* [Web blog post]. Available: <https://www.africaportal.org/features/bear-back-russian-re-engagement-africa-picking-putin-drivingseat/#:~:text=Russia%20is%20a%20major%20supplier,and%20Africa%20are%20also%20growing.> [2022, January 23].
- De Backer, K and Yamano, N (2011); International Comparative Evidence on Global Value Chains Available at SSRN: <https://ssrn.com/abstract=2179937> or <https://doi.org/10.2139/ssrn.2179937>
- Del Prete, D, Giovannetti, G, and Marvasi, E (2018). "Global value chains: New evidence for North Africa," International Economics, CEPII research center, 153,42-54. <https://doi.org/10.1016/j.inteco.2017.03.002>
- De Marchi, V, Giuliani, E and Rabellotti, R (2018). "Do Global Value Chains Offer Developing Countries Learning and Innovation Opportunities?" *The European Journal of Development Research*, Palgrave Macmillan; European Association of Development Research and Training Institutes (EADI), vol. 30(3), pages 389-407. <https://doi.org/10.1057/s41287-017-0126-z>
- Devonshire-Ellis, C. (2019). The BRICS Nations Are Headed For 50% Of Global GDP By 2030. This Is What It Could Mean for Developing Global Supply Chains & Emerging Consumer Markets. *Silk Road Briefing*. [Online]. Available: <https://www.silkroadbriefing.com/news/2019/11/21/brics-nations-headed-50-global-gdp-2030-mean-developing-global-supply-chains-emerging-consumer-markets/> [2021, September 19].
- Farole, T. (2016), Do global value chains create jobs?, IZA World of Labor, issue , number 291, Available: <https://EconPapers.repec.org/RePEc:iza:izawol:journl:y:2016:n:291> or <https://doi.org/10.15185/izawol.291>.
- Gereffi & Fernandez-Stark, (2016). *Global Value Chain Analysis: A Primer*. Technical Report. Duke, 2<sup>nd</sup> ed, 1-32. Centre on Globalisation, Governance and Competitiveness. North Carolina
- Goldberg, P., Amit, K., Nina, P. & Petia, T. (2010). Imported Intermediate Inputs and Domestic Product Growth: Evidence from India. *Quarterly Journal of Economics*, 125 (4): 1727-1767. <https://doi.org/10.1162/qjec.2010.125.4.1727>
- Hernández, R. A., Martínez-Piva, J. M. & Mulder, N. (2014). Bulletin of Latin American Research, Global Value Chains and World Trade: Prospects and Challenges for Latin America. *Economic Commission for Latin America and the Caribbean (ECLAC)*. Santiago, Chile.
- Horner, R. (2021). Global value chains, import orientation, and the state: South Africa's pharmaceutical industry. *J Int Bus Policy*. <https://doi.org/10.1057/s42214-021-00103-y> (Online First).
- Ignatenko, Raeli, and Mircheva, (2019). Global Value Chains: What are the Benefits and Why Do Countries Participate? INF Working Paper. Available: <chromeextension://efaidnbmninnibpcjpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.annaignatenko.com%2Fwp1918.pdf&clen=1700691&chunk=true>
- Kee, H, L (2015). Local intermediate inputs and the shared supplier spill overs of foreign direct investment. *Journal of Development Economics*, 112: 56-71. <https://doi.org/10.1016/j.jdeveco.2014.09.007>
- Kee, H.L. (2016). How has China moved-up the global value chains. [Online]. Available: <https://blogs.worldbank.org/developmenttalk/how-has-china-moved-global-value-chains> [2022, January 23].
- Kuroiwa, I. (2021). Method of value chain mapping with international input-output data: application to the agricultural value chain in three Greater Mekong Subregion countries. *Journal of Economic Structures*, 10(1): 1–23. <https://doi.org/10.1186/s40008-021-00235-7>
- Makgetla, N., Levin, S. & Mtanga, S. (2019). Moving up the copper value chain in Southern Africa. WIDER Working Paper 2019/52. UNU-Wider. Helsinki. <https://doi.org/10.35188/UNU-WIDER/2019/686-9>
- Mazenda, A. (2016). Development of BRICS Bilateral Trade Relations: A South African Perspective. *Nile Journal of Business and Economics*, 2: 17-32. <https://doi.org/10.20321/nilejbe.v2i2.49>
- Mazenda, A. & Masiya, T. (2018). The Geopolitics of the BRICS Trade Policy and Implications for South Africa. In de Vries, M.S., van Dijk, G. & Chitiga-Mabugu, M. (eds). *Public Administration: Reflection, Relevance and Readiness*. Pretoria. NISPAcee 233-254

- Miao, M., Yushi, J. & Borojo, D.G. (2020). The impacts of China–Africa economic relation on factor productivity of African countries. *Economies*, 8(2):47. <https://doi.org/10.3390/economies8020047>
- Muflikh, Y.N., Smith, C. & Aziz, A. (2021). A systematic review of the contribution of system dynamics to value chain analysis on agricultural development. *Agricultural Systems*, 189. <https://doi.org/10.1016/j.agsy.2020.103044>.
- Organisation for Economic Co-operation and Development (OECD), (2007); Moving Up the Value Chain: Staying Competitive in the Global Economy. Available: <https://www.oecd.org/sti/ind/38558080.pdf>
- OECD. (2019). Brazil/Central African Republic. [Online]. Available: <https://oec.world/en/profile/bilateral-country/bra/partner/caf> [2022, January 19].
- O'Neill, J. (2007). *BRICs and beyond*. Goldman Sachs Economic Research Group. New York: Goldman-Sachs.
- Rasiah, R Kong, X-N, and Vinanchiarachi, J (2011). Moving up in the global value chain in button manufacturing in China," *Asia Pacific Business Review*, Taylor & Francis Journals, vol. 17(2), 161-174. <https://doi.org/10.1080/13602381.2011.533508>
- Russian briefing. (2021). Russia's Increasing Trade Ties with Africa: Interview with the Chairman of Afreximbank as Russia-African trade exceeds US\$20 billion. [Online]. Available: <https://www.russia-briefing.com/news/russia-s-increasing-trade-ties-with-africa.html/> [2022, January 27].
- SAIIA, (2015). What impact could the 21st Century Maritime Silk Road have on South Africa? Available: <https://saiaa.org.za/research/what-impact-could-the-21st-century-maritime-silk-road-have-on-south-africa/> [2021, September 23].
- Seamus, G. (2021). Decoding China's Export Miracle: A Global Value Chain Analysis, *Economic Geography*, 97(5): 521-523, <https://doi.org/10.1080/00130095.2021.1959313>
- Seniuk, N. (2019). BRICS Countries in Global Value Chains, *Strategic Analysis*, 43(6):509-531, <https://doi.org/10.1080/09700161.2019.1669900>
- Staritz, C Plank, L and Morris, M (2016). Global Value Chains, Industrial Policy, and Sustainable Development – Ethiopia's Apparel Export Sector. Geneva: International Centre for Trade and Sustainable Development (ICTSD).
- Statista. (2022). Export of goods by the BRICS countries from 2000 to 2020. [Online]. Available: <https://www.statista.com/statistics/254301/exports-of-the-bric-countries/#statisticContainer> [2022, January 24].
- Strange, R. & Humphrey, J. (2019). What lies between market and hierarchy? Insights from internalization theory and global value chain theory. *Journal of International Business Studies*, 50(8): 1401-1413. <https://doi.org/10.1057/s41267-018-0186-0>
- Trading Economics. (2021). South African Exports. Available: <https://tradingeconomics.com/south-africa/exports> [2021, September 22].
- Trading Economics. (2022). Brazil Exports to Africa. [Online]. Available: <https://tradingeconomics.com/brazil/exports-to-africa#:~:text=Exports%20to%20Africa%20in%20Brazil%20is%20expected%20to%20be%20644.18,according%20to%20our%20econometric%20models.> [2022, January 19].
- UNCTAD (2021). Transforming Southern Africa harnessing regional value chains and industrial policy for development. [Online]. Available: [https://unctad.org/system/files/official-document/gdsecidc2021d1\\_en.pdf](https://unctad.org/system/files/official-document/gdsecidc2021d1_en.pdf) [2022, January 19].
- Usman, Z & Landry, D. (2021). Economic Diversification in Africa: How and Why It Matters. *Carnegie Endowment for International Peace*. [Online]. <https://doi.org/10.2139/ssrn.3842228>
- Vermeire, J, Bruton, G and Cai, C (2017) Global value chains in Africa and development of opportunities by poor landholders. *Review of Social Economy*. 75(3), 280-295. <https://doi.org/10.1080/00346764.2016.1238103>
- Vinicius de Freitas, (2016). Brazil and Africa : Historic Relations and Future Opportunités. Available: [https://www.gmfus.org/sites/default/files/Freitas\\_BrazilAfrica\\_Feb16.pdf](https://www.gmfus.org/sites/default/files/Freitas_BrazilAfrica_Feb16.pdf) [2021, September 30].
- Workman, D. (2021). South Africa's Top 10 Exports 2020. [Online]. Available: <https://www.worldstopexports.com/south-africas-top-10-exports/> [2021, September 18].
- Ye, M. & Voigt, S. (2014). The Global Value Chains in Brics Countries. *Fudan Journal of the Humanities and Social Sciences*, 7(3): 411–420. <https://doi.org/10.1007/s40647-014-0032-0>
- Zhang, G. (2021). February 19 AfCFTA: A More Integrated Africa in the Global Supply Chain. *apply* [Web log post]. Available: <https://market-insights.apply.com/en/afcfta-a-more-integrated-africa-in-the-global-supply-chain> [2022, January 27].