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Awakening industrial economic recovery in South Africa

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Overview

The Covid-19 pandemic has disrupted and upended the supply-chain dynamics of global production and trade. In the face of the pandemic, coupled with particularly limited fiscal space in developing and emerging economies, policymakers are aiming to identify sectors that can be prioritised to drive recovery and growth in the post Covid-19 era. There has been a great deal of popular and scholarly debate on measures taken by governments in response to the Covid-19 pandemic, and on the difficult trade-offs involved for policymakers (Jenny, 2020). The medium- to long-term economic effects of the shocks from the pandemic are likely to vary a great deal across different countries and regions, as well as for different social groups within a particular country. These outcomes are, in turn, expected to be shaped by a multitude of factors that are influenced by differences in economic structure.

The predominant position around South Africa's recovery, and the one taken up in this brief, is that the recovery from the shocks of Covid-19 must be led by industrialisation. Historically, industrialisation has been a key driver of sustained growth. While South Africa has attempted to develop its industrial capabilities through its industrial policy agenda, it has had limited success in terms of building technological capabilities and becoming competitive. Rather, South Africa's economic structure, characterised by a persistent dependence on resource exports and low productivity sectors, has remained largely undiversified. This makes the economy particularly vulnerable to external economic shocks.

South Africa, therefore, is currently faced with the dual challenges of de-industrialisation and sluggish economic growth. This is coupled with persistent structural problems, increasing unemployment, pervasive inequalities, and extensive poverty. This means that there is a critical need to identify key manufacturing sub-sectors with the potential to drive South Africa's re-industrialisation and economic recovery. This is expected to lead to the development of better and more targeted industrial policies aimed at driving South Africa's economic recovery, post-Covid-19.

Following the work of Go et al. (2019)¹ and Yu et al. (2014)², the brief identifies priority and vulnerable sectors. The approach is expected to contribute to the growing discourse around policy formulation for South Africa's recovery. The analysis foregrounds the manufacturing sector's ability to be the engine of growth, with an additional and necessary focus on the identification of key sub-sectors and industries that require intervention to halt the ongoing decline. Adopting a sub-sectoral approach is vital given the existence of strong linkages and interdependencies among the different manufacturing sub-sectors and the rest of the economy.

¹ Go, D. J., Promentilla, M. A., Aviso, K. & Yu, K. D. 2019. The Evolution of the Key Sectors in the Philippine Economy Using an AHP-Based Sector Prioritization Index. *Economies*, 7-78.

² Yu, K. D.S., Raymond R. T, Kathleen B. A, Michael, A.B., Promentilla, M. & Joost R. Santos. 2014. A vulnerability index for post-disaster key sector prioritization. *Economic Systems Research* 26: 81-97.

The state of the South African economy

For South Africa, the decade before the Covid-19 pandemic had been its weakest in terms of GDP growth since the transition to democracy in 1994. Average GDP growth was 2.9% from 1994–2000, 4.2% from 2000–2008, and 1.7% from 2010–2019.³ Moreover, South African manufacturing has declined steadily, and lags behind other upper-middle-income countries in terms of diversification. The country continues to depend on a relatively small group of isolated markets, sub-sectors and industries, especially in relation to export earnings which are dominated by extractive and resource-based industries. This sluggish economic growth, the relative decline in the contribution of manufacturing, and an undiversified economy, make the country more vulnerable to a shock such as the Covid-19 pandemic. The consequences of the pandemic and its associated lockdown policies on industrial activities are reflected in poor sub-sectoral performance along with a range of measures such as declines in output levels, employment and trade.⁴

The impact of the pandemic on trade was significant, with a massive decline in the nominal value of South African exports, which tumbled by 55.2% (month-on-month) in April 2020. This was due to significantly weaker demand in key export markets and restrictions to domestic production and logistics constraints. The automotive sub-sector and motor trade services industry have been clear victims of the damaging demand-side effects of global and domestic lockdowns (IDC, 2020).

Manufactured goods were severely affected, with exports to the EU decreasing by 77.4%, followed by the USA (-69.2%), Africa (-61.5%), and Japan (-56.9%). With respect to imports, there was a sharp drop of 47.9% (or R3.7 billion) in the import bill for refined petroleum products in April 2020, whereas imports of motor vehicles, parts and accessories declined by 25.7% or R4.3 billion.⁵ In sharp contrast, imports of textiles rose 372% (or R3.4 billion) compared to March. This was perhaps associated with the increased demand for personal protective equipment to combat the spread of Covid-19.

An examination of the levels of employment in manufacturing showed that the food & beverages, textiles & clothing, petroleum & chemicals, and metals & machinery sub-sectors account for most jobs in the manufacturing sector. The textiles & clothing and metals & machinery sub-sectors recorded the sharpest declines from the first to the second quarter, shedding more than 50,000 jobs each, while the petroleum & chemicals sub-sector reported a marginal increase of 16,000 jobs and the metals & machinery sub-sectors an increase of 10,000 jobs. The food processing sub-sector was comparatively stable, reflecting its importance within the economy.

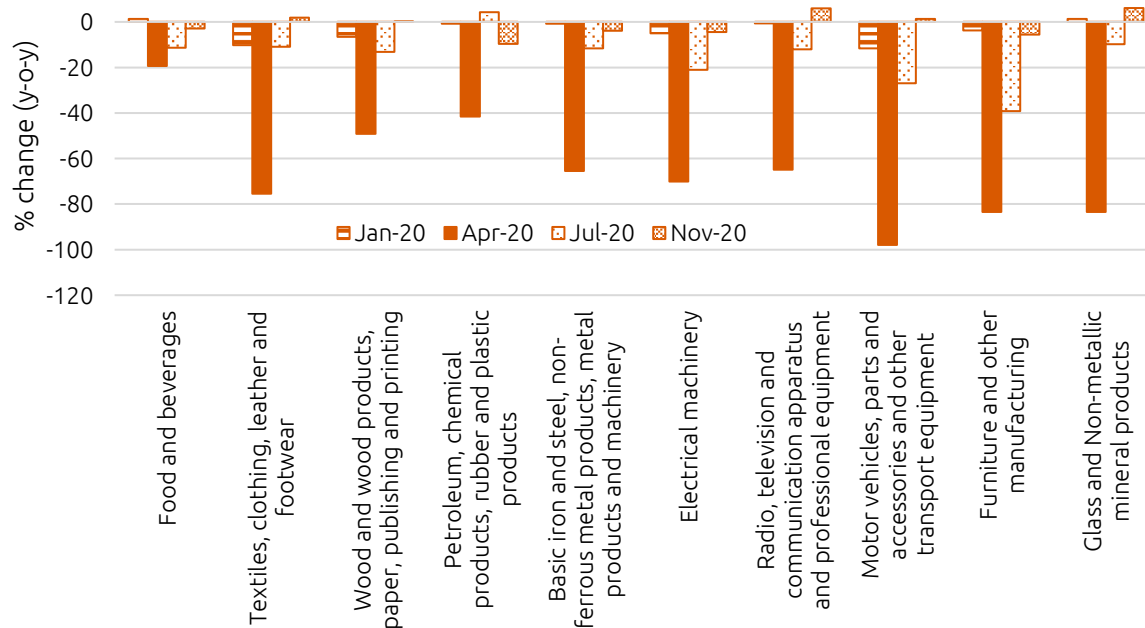
³ Sachs, M. 2021. South Africa's fiscal path. Governance Accountability Platform, Fiscal Policy Webinar Series presentation. Johannesburg: Southern Centre for Inequality Studies, University of the Witwatersrand.

⁴ The transport equipment sub-sector (including motor vehicles and parts) was the hardest hit as output plummeted 97.9% (year-on-year) in April, followed by furniture and other manufacturing (-84.4%), non-metallic mineral products (-82.5%), and clothing, textiles, leather, and footwear (-76.3%). The automotive industry was extremely affected by the lockdown; as new passenger vehicle sales came to a standstill in April (-99.6% y-o-y) (StatsSA, 2020: Quarterly Reports).

⁵ IDC, 2020. Economic Overview.

The initial easing of restrictions across the country during the second quarter of 2020 resulted in improved manufacturing performance and rebound of general economic activities, with output levels increasing sharply across almost all manufacturing sub-sectors, albeit off very low bases.⁶

Figure 1: Change in manufacturing output by sub-sector in 2020



Source: Compiled using Stats SA data

By the fourth quarter of 2020, there had been some recovery in both the textiles & clothing, and the metals & machinery sub-sectors, although manufacturing employment, in general, remained significantly lower year-on-year. There was a strong recovery in exports, especially gold, platinum, and autos, in the third quarter. In contrast, imports remained subdued, mostly because of a combination of low petroleum prices and demand. These trends resulted in the highest balance-of-trade surplus since the transition to democracy.

Identifying priority sub-sectors in South Africa

Research into the identification of vulnerable and priority manufacturing sub-sectors (over a ten-year period, 2010-2019) was conducted for the IDTT with the aim of identifying priority sectors that can be targeted for economic recovery. The research involved assessing how South Africa's manufacturing industries have evolved in the last decade, (2010-2019), using Quantec Input-Output (I-O) supply and use tables in 2010 constant prices. At the first level, we used data for the 22-sector classification at the two-digit Quantec Standard Industrial Classification (QSIC) level including (1) Food, beverages, and tobacco [QSIC 30]; (2) Textiles, clothing, and leather goods [QSIC 31]; (3) Wood and paper; publishing and printing [QSIC 32]; (4) Petroleum products, chemicals, rubber and plastic [QSIC 33]; (5) Other non-metal

⁶ Overall manufacturing output expanded by 32.9% (q-o-q) in the third quarter of 2020, following the 29.4% contraction recorded in the preceding quarter. For the period January to September 2020, the sector's output was still 14.4% lower compared to the corresponding period in 2019.

mineral products [QSIC 34]; (6) Metals, metal products, machinery and equipment [QSIC 35]; (7) Electrical machinery and apparatus [QSIC 36]; (8) Radio, TV, instruments, watches, and clocks [QSIC 37]; (9) Transport equipment [QSIC 38]; (10) Furniture; and Other manufacturing [QSIC 39]. This level of aggregation enabled us to identify three priority manufacturing sub-sectors for driving industrial recovery in South Africa. To deepen the analysis, we used the disaggregated 91-industry classification at the three-digit SIC level to identify specific industries within the priority sub-sectors that may be crucial in driving industrial recovery in the priority sub-sectors identified in the first stage.

To identify the priority manufacturing sub-sectors for industrial recovery and growth of South African manufacturing, we used I-O modelling to formulate sector prioritisation/vulnerability index based on five key components (see Go et al., 2019; Yu et al., 2014):⁷

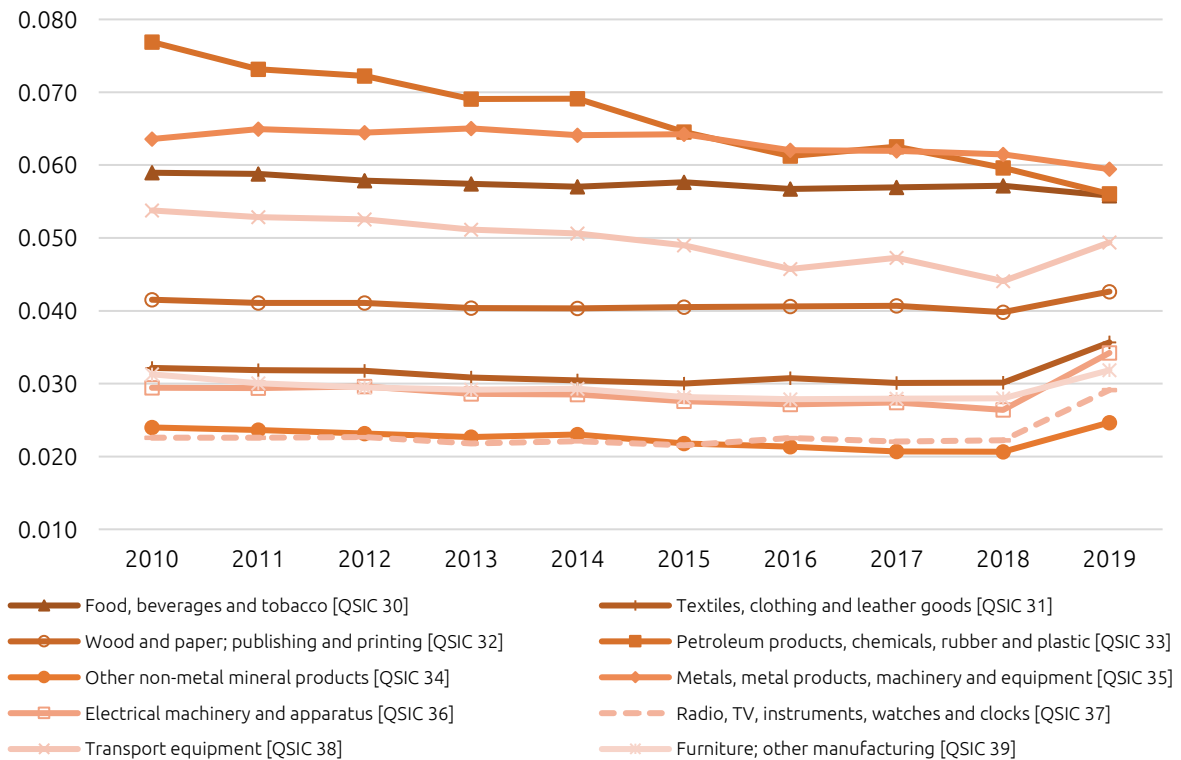
- the relative degree of the sector's influence on the rest of the economy measured by the power of the dispersion index (PDI)
- the relative structural significance or contribution to overall output production measured by sector size
- the degree of interconnectedness (producer and consumer) with other economic sectors measured by average propagation length (APL)
- the level of dependence on the domestic economy (inputs) measured by the sectoral purchase coefficient (SPC)
- the contribution to the economy's risk of inoperability or production failure measured by the inoperability multiplier (IM).

Findings and discussion

At the first level, our sector prioritisation index, based on each component for all manufacturing sub-sectors at the two-digit QSIC level, shows that petroleum & chemicals, metals & machinery, and food & beverages are the top three priority manufacturing sub-sectors in the South African economy between 2010 and 2019. Figure 2 shows that the petroleum & chemicals sub-sector was the most important manufacturing sub-sector in South Africa from 2010 until 2017 in terms of key economic indicators (for example, output and employment), with metals & machinery becoming the most important manufacturing sub-sector since 2017. The food & beverages sub-sector has remained the third most important manufacturing sub-sector over the period.

⁷In the study, we obtained the sector prioritisation/vulnerability index by normalising the various dimensions of the index into the range of 0-1, with 0 indicating the least vulnerable sector while 1 indicates the most vulnerable/priority sector.

Figure 2: Manufacturing sub-sector prioritisation (vulnerability) indices, 2010–2019



Source: Authors

This result suggests that these three sub-sectors be prioritised within manufacturing for South Africa's industrial economic recovery and growth. The reasoning is that these three priority sub-sectors have the highest total output contributions to the economy, higher effects in terms of spillovers and linkages across the rest of the economy. In addition, they rely significantly on domestic inputs with a lower risk of production failure. As a result, the prioritisation of these sub-sectors through, for instance, industrial policy and resource allocation decisions, will generate higher overall positive effects on industrial development and the recovery of the South African economy as a whole. Our research found that the declining trend observable in all three prioritised sub-sectors after 2018 could be explained by the declining activity in South Africa's manufacturing or the result of a deliberate shift of policy focus in favour for the diversification of the manufacturing sector.

To provide a shred of more fine-grained and nuanced evidence, we went a step further by conducting case study analyses using more disaggregated data of 91 industries at the three-digit QISIC level of the key priority sub-sectors identified in Figure 2.

The analysis of the food & beverages sub-sector identifies the meat, fish, and fruit [QSIC 301] and beverages [QSIC 305] industries as those driving the high prioritisation levels in this sector, and therefore needing to be prioritised in the formulation of Covid-19 recovery policies.

In the petroleum & chemicals sub-sector, our results identify coke, petroleum products, and nuclear fuel [QSIC 331-333], and other chemical products [QSIC 335-336] as the industries that policy should also prioritise. The concentrated nature of the coke, petroleum products, and nuclear fuel industry is a possible reason for the vulnerability of the sub-sector. Political economy issues of this nature introduce complexity to the design of policies needed to correct long-standing problems that exist in the sub-sector. Therefore, there will need for a concerted effort on the part of policymakers to address the power imbalances (in the form of concentration of large and lead firms) and shape better developmental outcomes in the sub-sector.

Within the metals & machinery sub-sector, several industries have seen changes in terms of their relative vulnerability, but the basic iron and steel products industry has consistently ranked as the most vulnerable. This is possibly due, in large part, to the fragile nature of the industry despite being the recipient of favourable electricity tariffs, investment and logistics support aimed at promoting its competitiveness during the apartheid regime.⁸

Additionally, the closure of ArcelorMittal-SA steel plants in the past few years, which together held the monopoly over steel production in South Africa, may have driven the industry to a near collapse. Moreover, further downstream, firms involved in the manufacture of products requiring basic iron and steel as inputs have been forced to import from international companies. This puts them at a distinct disadvantage compared to other firms that source their inputs from their respective domestic suppliers.⁹

The way forward

This brief argues for the key role of manufacturing in driving sustained economic growth and development in South Africa as part of its recovery process from Covid-19. The adoption of an ambitious industrial development agenda can assist in structurally transforming the South African economy towards a sustainable, inclusive, modern, and competitive economy. This position is supported by the findings of a key study in which we examined and identified priority manufacturing industries and sub-industries that could be prioritised to drive South Africa's re-industrialisation and economic recovery.

The results of the study suggest that, between 2010 and 2019, petroleum products, chemicals, rubber and plastic [QSIC 33], metals, metal products, machinery and equipment [QSIC 35], and food, beverages, and tobacco [QSIC 30] are the three priority sub-sectors in the South African manufacturing sector.

This finding suggests that these sub-sectors should be prioritised for intervention by policymakers due largely to their level of entrenchment within South Africa's current industrial structure. Drilling down further, our focused analyses of the industries identified the meat, fish, and fruit [QSIC 301] in the food & beverages industry; coke, petroleum products, and nuclear fuel [QSIC 331-333] in the petroleum & chemicals industry; and basic

⁸ Rustomjee, Z., Kaziboni, L. & Steuart, I., 2018. Structural transformation along metals, machinery, and equipment value chain – developing capabilities in the metals and machinery segments.

⁹ Goga, S., Mondliwa, P. & Roberts, S., 2020. Economic Power and Regulation: The Political Economy of Metals, Machinery and Equipment Industries in South Africa'. In: Francis, Valodia & Webster, eds. *Inequality Studies from the Global South*, s.l.: Routledge., pp. 127-152.

iron and steel products sector in the metals & machinery industry, as the key industries requiring prioritisation within the priority sub-sectors.

For these “traditional” industries and sub-industries to drive industrial recovery in South Africa, policymakers and the recovery policy must place these at its core and adopt a policy focus that includes both shorter and longer time horizons:

- In the short- to medium-term, policies must be developed that seek to rehabilitate and accelerate growth in the priority sub-sectors.

Prioritising these manufacturing sub-sectors is necessary and fundamental to achieving immediate economic recovery in South Africa. The nature of these “traditional” manufacturing sub-sectors, the strong linkages that exist between them and the wider manufacturing sector, and their contribution to aggregate growth requires policy responses that shape clear objectives, orientate firms within them, and ensure that these manufacturing sub-sectors grow rapidly. Failure within these sub-sectors will spillover with drastic consequences for the rest of the manufacturing sector and the broader economy.

- Over the long term, South Africa’s policy stance must be one that looks towards the future with an eye on identifying new manufacturing sub-sectors with growth potential and that are able to assist in diversifying the export basket away from the persistent dependence on a few sub-sectors. This will assist in reducing mitigating vulnerability to future shocks.

Future policy interventions must be innovative and reaffirm the importance of establishing a development coalition for manufacturing. As part of this, the policy must also look to foster a functioning regional industrial ecosystem that brings together stakeholders from government, business, universities and civil society.

Moreover, policies should be led by the government in partnership with the private sector to build South Africa's manufacturing footprint locally and in the wider southern African region. Adopting the policy recommendations discussed here will help make an industrialisation-led recovery a reality while at the same time boosting confidence in the manufacturing sector and exploiting the strong linkages that exist between manufacturing and the rest of the economy.

