The Prospects for Regional Value Chains in the Automotive Sector in Southern Africa

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1 Introduction

Economic growth rates in Africa since the year 2000 have been impressive, and in some cases even spectacular. It is, however, a striking fact that manufacturing has not kept pace. The level of industrialisation remains low and manufacturing has declined as a share of gross domestic product, accounting for only 10% of continental output in 2015. Examples of dynamic manufacturing growth are few and far between. With South Africa being a partial exception, there are relatively few large-scale, indigenous manufacturing firms and a paucity of domestic technological development. Examples of dynamic industrial clusters are scarce. Even more striking is the virtual absence of regional value chains (RVCs), which have been an integral component of Asia's rapid industrialisation meanwhile (ASEAN-Japan Centre 2017; UNESCAP 2015). These problems are manifest in Africa's heavy reliance on imports of manufactured goods and limited such exports. In this chapter, we examine the automotive industry in Africa. More specifically the focus is on the Southern African Development Community (SADC), and the prospects for the development of RVCs within this important sector.

Along with the burgeoning middle class, the market for vehicles in sub-Saharan Africa is currently growing rapidly—albeit from a low starting base. However much of this demand is being met by imports, because, outside of South Africa, production is almost non-existent. With South Africa again being the exception, over 80% of these imports consist of second-hand vehicles—sourced mainly from Europe and

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Japan. Vehicle imports therefore provide a good proxy of market size, and imports of light vehicles into sub-Saharan Africa (excluding South Africa) amounted to 1.5 million in 2013 (the bulk of these are pre-owned ones)—having grown at a rate of 14% per annum since 2003 (Black and McLennan 2016). With the more recent slowdown in economic growth, this rapid pace of market expansion has not been sustained; by 2030, however, the light-vehicle market (including South Africa) will be very significant. The question then arises as to where these vehicles will be produced: Will sub-Saharan Africa continue to rely on imports, or can it develop an industry of its own that would draw in a number of countries to create competitive RVCs?

The next section examines the current state of the automotive industry in Africa, and in SADC in particular. The automotive industry is scale-intensive. We show that outside of South Africa, and some countries in North Africa, production is very limited. For the industry to grow in Africa, it has to transcend national borders—not just in terms of exporting but also of production, by developing competitive RVCs. The implications of this for regional integration and RVCs are examined in the second section, where we provide international examples of the importance of scale and of the potential for regional integration as the basis for competitive RVCs. The requirements for achieving regional integration in the automotive sector are then set out in the third section. These are a viable 'automotive space', competitiveness in manufacturing and supportive policy arrangements. This leads us to make certain policy recommendations as part of the conclusion.

2 The Current State of the Automotive Industry in Africa

Africa as a whole accounted for less than 1% of global vehicle production in 2016. Outside of South Africa, and some countries in North Africa, vehicle production is almost non-existent. Annual sales of new vehicles are very low, as shown by Table 1 below, and in sub-Saharan Africa (outside of South Africa) the market is mainly supplied by imported used cars—which in many countries account for over 80% of domestic demand (Black and McLennan 2016). South Africa accounts for the bulk of continental output (599,000 vehicles in 2016), followed by Morocco (345,000 vehicles in 2016). The largest plant on the continent is in fact the 400,000-car-a-year plant built by Renault in Tangier, Morocco, with a total investment of EUR 1 billion. The vast bulk of its production is for export to Europe and, to a much lesser extent, the Middle East and North Africa. Automotive exports from Morocco have expanded from USD 0.4 billion in 2004 to USD 5 billion in 2015 (McKinsey 2016). Algeria and Egypt also feature industries that have been established for many years now. Egypt currently faces growing international competition, especially as a result of the Euro–Mediterranean Free Trade Agreement—under which tariffs for cars are scheduled to decline to zero by as 2019. Egyptian imports have risen sharply and only 59% of vehicles sold in 2014 were locally assembled, down from 66% in 2004 (El-Haddad et al. 2017).

Table 1 Total new-vehicle sales in selected African countries

	Annual sales (units)
South Africa	555,716
Egypt	181,001
Morocco	168,913
Algeria	94,408
Tunisia	47,359
Réunion	31,039
Libya	23,600
Mauritius	12,597
Kenya	11,886
Botswana	7600
Ivory Coast	7118

Source: OICA (2017)
Note: Data is for 2016. Nigeria is excluded due to data unreliability

In the rest of Africa outside of SADC, a number of countries such as Ethiopia, Kenya and Nigeria have small-scale assembly operations. Most of these involve minor semi-knocked-down (SKD) assembly,[1] with minimal or no local content. Automotive support policies are being developed in a number of countries, and the major multinational firms are investigating corresponding possibilities. Nigeria in particular has signalled its intention to launch an automotive industry, following the introduction in 2013 of the National Automotive Industry Development Plan. This places a 70% tariff on vehicle imports, while incentivising local production through zero tariffs on components. By 2016 there were 15 such assembly operations underway, far too many in such a small market. Also, this is SKD assembly; while it is stipulated that firms should move towards completely knocked-down (CKD) assembly within 5 years,[2] the Nigerian government is having difficulty enforcing this (Black and McLennan 2016). A further problem is the proliferation of used vehicles. Though a ban on the import of these would arguably be necessary to stimulate the requisite demand for locally assembled vehicles, this would, of course, impact very negatively on consumers.

Within SADC, the automotive industry is completely dominated by South Africa. Ever since the 1920s the South African government has expended much effort on building up and protecting its automotive industry, with local content requirements dating back to the 1960s. A process of gradual liberalisation commenced with the advent of the Motor Industry Development Programme, in place from 1995, which provided import-duty rebates based on the costs of local materials in exported vehicles and components. This was followed in 2013 by the Automotive Production and Development Programme (APDP), which provides import-duty rebates based

[1] SKD assembly involves the final assembly of partly assembled vehicles.

[2] CKD assembly involves full assembly, including the welding of body panels. It requires substantial investment, which is not the case under SKD assembly.

on local value addition in the supply chain. Additionally, the APDP has put in place stable import tariffs on components and vehicles, an import rebate duty for a significant volume of vehicles being produced in a given assembly plant as well as cash grants for vehicle and component manufacturers for investments made under the Automotive Investment Scheme. The industry in South Africa, which includes seven assemblers of light vehicles (BMW, Ford, Isuzu, Mercedes-Benz, Nissan, Toyota and Volkswagen) and a number of truck assemblers, employed 33,000 workers in vehicle manufacturing and 80,000 in the components sector in 2016. It exported 344,859 vehicles in 2016 to the value of USD 8.03 billion. Component exports—standing at USD 3.6 billion—are dominated by catalytic converters, which alone accounted for 41.3% of the total value of such exports in 2016. South Africa also exports substantial volumes of engines and engine parts, radiators, tyres and other components (AIEC 2017).

In the other SADC countries there is very little automotive production, and most of them are reliant on imports of (mainly used) vehicles. Small-scale production in Zimbabwe dates back to the 1960s, and is a result of import substitution. Back then, Zimbabwe developed both components and assembly industries. In the 1990s, Willowvale Mazda Motor Industries had a capacity of 10,000 vehicles a year (Black and Muradzikwa 2004; Yu 2012). However, output has virtually collapsed with the economic and political instability of the last two decades. Botswana had a brief stint with a targeted industrial automotive programme, and an assembly plant was even established under licence from Hyundai in 1993. The plant benefitted from its proximity to South Africa and the common Southern African Customs Union (SACU) tariff. It initially enjoyed some relative success, but was eventually closed down in 2000 (Zizhou 2009). Mozambique has a small components production industry, and in 2014 the country's first two SKD assembly plants, owned by Hyundai and Tong Jian respectively, were opened—though these operate only on a very small scale (Deloitte 2016). As the third-largest economy in sub-Saharan Africa, Angola has a potentially significant and growing market. The country has a duty structure in place on the import of vehicles, and has expressed its intention to develop the automotive industry as a part of efforts to diversify from oil production (*Business Report*, 13 December 2016). Currently, there exists some minor SKD assembly in the country. In Zambia, China's Gonow is in the process of establishing an assembly plant (*Daily Mail*, 24 October 2017). Namibia has also demonstrated the intention to develop its automotive industry. In the country's 2015 industrialisation strategy 'Growth at Home', the automotive industry is positioned as one of the ten priority sectors. Up to now, Namibia has only attracted small-scale investment in vehicle assembly, however (*Business Day*, 12 March 2018).

It is clear, therefore, that within SADC, South Africa is the only country with a production base of any significance. Other countries do clearly have an interest in vehicle production, even if their current facilities are essentially SKD plants—which add minimal value, and use virtually no domestically produced inputs. The result of this unbalanced development is that automotive trade within SADC is overwhelmingly in one direction, namely from South Africa to other SADC countries. Aided by the SADC Free Trade Agreement, total automotive exports to SADC amounted to USD 1.86 billion in 2016—which was 16% of South Africa's total automotive

Table 2 South African automotive foreign trade

Exports to	Value (in USD million)	Imports from	Value (in USD million)
Germany	3181.5	Germany	4740.4
United States	1537.6	Japan	1367.4
Belgium	972.7	Thailand	1263.4
United Kingdom	611.5	China	943.4
Namibia	596.8	United States	780.4
Japan	496.1	India	653.3
Spain	378.6	United Kingdom	446.8
Botswana	361.2	South Korea	390.7
Australia	334.7	Spain	386.2
France	259.5	Brazil	319.0
South Korea	210.9	Italy	238.9
Zambia	193.0	Czech Republic	221.8
Zimbabwe	163.0	Sweden	168.4
Thailand	144.9	France	167.8
Mozambique	136.8	Poland	164.7
India	135.3	Romania	158.2
Canada	98.7	Hungary	114.4
Swaziland	96.5	Slovak Republic	103.5
Argentina	86.7	Turkey	94.9
Czech Republic	84.3	Taiwan	88.0

Source: AIEC (2017)
Note: Data is for 2016. SADC members are indicated in italics. Values have been converted from ZAR to USD, using OANDA average exchange rates for 2016

exports. These exports consist primarily of vehicles and aftermarket parts (AIEC 2017). As indicated by Table 2 below, while SADC countries are key export destinations none feature as a significant source for automotive imports into South Africa. Angola, Botswana, Lesotho and Zambia collectively supply less than USD 100 million of component exports annually to South Africa, illustrating the absence of RVCs. South Africa boasts a much larger industry, as well as production incentives for both components and completely built-ups (CBUs)—meaning fully assembled vehicles. Some other SADC countries have complained that these production incentives undermine the potential for local automotive production. However, representatives of the National Association of Automobile Manufacturers of South Africa (NAAMSA) and of the South African Department of Trade and Industry counter that the greatest barrier to regional integration is rather the lack of both capacity and demand in other SADC countries.[3]

There has been some relocation of labour-intensive suppliers to Botswana and Lesotho. Lower labour costs and a seemingly more stable labour relations environment, coupled with government fiscal support given to the industry in these

[3]Interview with a South African automotive industry representative, Pretoria, 8 February 2016, and with a South African government official, Pretoria, 14 March 2016.

countries, have made this a viable business decision.[4] Given that Botswana and Lesotho form part of SACU with South Africa, they also enjoy the benefits of the APDP. The relocation in 2015 of the automotive component manufacturer Pasdec from South Africa to Botswana is evidence of these advantages (*Daily Express*, 13 February 2015). While this represents but a small step towards developing value chains in the region, as South Africa continues to deepen its production base for components, even South African government officials nevertheless expect such regional shifts to increase.[5]

3 Developing an 'Automotive Space': Some Lessons from International Experience

In considering the potential for the automotive industry in emerging markets, Humphrey and Oeter (2000) use the concept of a viable 'automotive space'. This can take various forms. For instance, China and India comprise large and rapidly growing markets that have sufficient scale in their own right. Producer countries on the periphery of major markets can create a viable automotive space by integrating into these markets. Mexico in relation to Canada and the United States is one example, because of the North American Free Trade Agreement. Slovakia and other newer member states of the European Union are other ones. Morocco provides a more recent case, as it has attracted a global-scale Renault plant, which, as noted, mainly supplies the EU market. For countries that neither themselves constitute large markets nor adjoin them, an automotive space could take the form of a regional market—where trade agreements grant easier market access to member states and, thus, effectively enlarge the home market. Of course, for these emerging production locations to succeed then appropriate policies would be required—together with the capacity to upgrade production over time.

As indicated above, the presence of large economies of scale means that the automotive industry requires a large regional market or proximity to a major one. The reality is that sub-Saharan Africa consists of a large number of mostly small economies. Their combined market is, however, significant, with a GDP in 2013 of USD 1.66 trillion and a passenger-vehicle market of 1.84 million units per annum, as estimated by Black and McLennan (2016). A comparison with India, shown in Table 3, indicates the extent of the problem—but also the degree of opportunity. The total GDP of India and of sub-Saharan Africa as well as their respective average per capita GDPs and population sizes are of the same order of magnitude. Vehicle market size is also similar for both. The major difference comes in production: India manufactures its own vehicles, while sub-Saharan Africa imports them. India is also a significant exporter, especially of small cars and motorcycles. In 2013, Indian net

[4]Interview with a South African automotive industry representative, Pretoria, 8 February 2016.

[5]Interview with a South African government official, Pretoria, 14 March 2016.

Table 3 India's and sub-Saharan Africa's vehicle markets, production and trade

	India	Sub-Saharan Africa
GDP (in USD billion)	1875	1659
Population (in billion)	1.252	0.937
Per capita GDP (in USD)	1498	1771
New-passenger-vehicle market	2,554,000	1,839,000
Passenger-vehicle production	3,139,000	265,000
Tariff level for passenger vehicles	100%	no unified tariff
Direct employment in industry	> 1 million	120,000
Passenger-car imports (in USD million)	276.5	11,402.1
Passenger-car exports (in USD million)	5556.5	4317.7
Commercial vehicle and bus imports (in USD million)	45.8	5701.3
Commercial vehicle and bus exports (in USD million)	901.6	1341.6
Motorcycle imports (in USD million)	29.1	74.6
Motorcycle exports (in USD million)	1648.2	1.3
Kits imports (in USD million)	120.9	241.2
Kits exports (in USD million)	271.7	11.2
Vehicle parts imports (in USD million)	3479.1	4834.9
Vehicle parts exports (in USD million)	3912.8	727.0
Motorcycle and bike parts imports (in USD million)	438.1	489.3
Motorcycle and bike parts exports (in USD million)	371.7	4.5
Net automotive trade balance (in USD million)	+8272.9	−16,340.2

Source: Black and McLennan (2016)
Note: Data is for 2013

automotive exports amounted to USD 8.3 billion. Moreover, India has its own brands such as Tata. Sub-Saharan Africa is heavily reliant on imports meanwhile and, apart from South Africa, exports very little. As a result, the region had an automotive trade deficit of USD 16.3 billion in 2013.

There are, of course, limitations to this rather simplistic comparison. Sub-Saharan Africa is well endowed in resources, which implies a corresponding comparative advantage. India has very limited resources in relation to its population size. Neither region has particularly strong manufacturing capabilities. The key difference is that India has an integrated single market, and it is protected by a high common external tariff. As a result, it has developed competitive automotive value chains consisting of assemblers as well as first- and second-tier suppliers (Okada and Siddharthan 2007). This appears to indicate that with complete regional integration, powerful RVCs could potentially emerge in (sub-Saharan) Africa.

As stated above, regional trade agreements can create viable automotive spaces. Two such examples are the Common Market of the South (Mercado Común del Sur, Mercosur) in South America and the Association of Southeast Asian Nations (ASEAN). In both of these trade blocs, the automotive industry has been central—and related multinational firms have been strong supporters of trade integration arrangements. However both trade blocs have encountered great difficulties in forging closer arrangements because these tend to lead to clustering in preferred

locations, excluding other member states. In the case of Mercosur, results have been mixed at best. The national interests of Argentina and Brazil have tended to frustrate progress. While there has been trade creation, it cannot be argued that Mercosur agreements have turned the region into a platform for exports to external markets (Arza 2011). ASEAN has been more successful, and the region has emerged as a major production and export hub—although Thailand is the dominant player herein by a significant margin, and has attracted considerable investment especially from Japan (Kobayashi et al. 2015; Techakanont 2014). However the creation of RVCs has been complicated, as apart from Thailand there have also been serious efforts by Indonesia and Malaysia to develop their own indigenous car brands too (Farrell and Findlay 2001; Natsuda et al. 2013). Nevertheless, the benefits of building strong RVCs—facilitated by supporting regional integration arrangements—are clear, as will be demonstrated below.

In South East Asia, a key building bloc was the ASEAN Industrial Cooperation (AICO) initiated in 1996; it is therefore instructive to examine this in some detail here. AICO was established by the ASEAN Secretariat as a temporary scheme (one finally phased out in 2011) in order to facilitate the eventual full implementation of a Common Effective Preferential Tariff (CEPT) for the ASEAN Free Trade Area (AFTA). Initially, under AICO two different businesses or company divisions operating in two different ASEAN countries could form an AICO arrangement and receive preferential AFTA tariff rates of 0–5% for raw, intermediate and finished goods before the AFTA rates were fully realised for all trade. Importantly, the arrangement required the companies to engage in industrial complementation,[6] industrial cooperation and/or resource sharing for the benefit of the host countries. The products enjoying the preferential tariff were required to have at least 40% ASEAN content, and the companies involved to have at least 30% national equity (ASEAN 2012a). The scheme was mainly utilised by Japanese automotive companies, which had played a major role in persuading the ASEAN Secretariat to adopt the scheme in the first place (ASEAN 2012b). Foreign investors utilising the scheme often produced a particular vehicle model in one country to export to the whole region and, less often, clustered their components' production across the region (Fujita 1998; Kohpaiboon 2015). Eventually countries in South East Asia began to produce for export out of ASEAN, most notably light trucks from Thailand.

Given the sizeable uptake of AICO by foreign firms and the success in reducing protection in the region, the scheme has been held up as a showcase example of facilitating regional integration. However, there are lessons to be learned from both the challenges and successes of AICO. One of the biggest difficulties with AICO was getting buy-in from member states, and thus creating the willingness to loosen national protection for the benefit of the scheme as a whole. For example, while the Thai government welcomed AICO and encouraged multinational investments, its Malaysian counterpart was worried about AICO's effect on its own domestic car

[6]Industrial complementation refers to the allocation of the manufacture of products that are complementary in a value chain to different countries.

producers (Fujita 1998). Automotive firms played a major role in pressuring ASEAN governments to adopt the scheme. In 1996, when as noted it was first initiated, combined vehicle sales in the four major markets (Indonesia, Malaysia, Philippines and Thailand) were almost 1.5 million units, which created a large enough market to achieve economies of scale in local production for the region. This, combined with the fact that all four of these countries had engaged in some prior protection and development of their own industries, meant that regional cooperation also held potential advantages for all participant countries (Farrell and Findlay 2001).

While ASEAN has implemented policies that have promoted the creation of supply chains between member states to further economic development, closer integration resulting from the formation of the ASEAN Economic Community in 2015 is already influencing the development of the automotive industry. A key question is whether politically induced economic integration in ASEAN and the industrial policies of individual member states are going to lead to fully integrated production, or whether companies are going to practice minimal localisation in peripheral markets such as Cambodia, Laos, Myanmar and Vietnam. For example, the Thai industry is supplied with labour-intensive parts such as wiring harnesses and seat covers on a small but expanding scale from Cambodia, Laos and Myanmar (Kobayashi et al. 2015). This latter route could mean that these countries get locked into the assembly of imported components or the manufacture of labour-intensive ones.

4 Requirements for Regional Automotive Value Chains in SADC

As mentioned above, three factors are necessary to develop a sustainable automotive industry in developing countries: a viable automotive space, competitive manufacturing capability and supportive policy arrangements (in this instance, particularly regional integration). With regard to market size, regional integration is making slow but steady progress in sub-Saharan Africa—and the widely accepted core objective here is to improve the prospects for industrialisation by expanding the regional market. The five main overlapping trade agreements—the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the Economic Community of West African States, SACU and SADC—are well established, and offer a degree of favourable market access among member states. A process towards creating the Tripartite Free Trade Area, including COMESA, the EAC and SADC, was launched in 2015. This is now culminating in the African Continental Free Trade Area, which will potentially bring together 55 countries with a population of 1.2 billion people and a combined GDP of USD 3.4 trillion between them.

When regional integration in the automotive sector in Africa was first explored in the 1990s, one of the biggest limitations was the small market demand for cars

(Black and Muradzikwa 2004). However, on the back of significant economic growth, these dynamics are changing and currently very low levels of vehicle ownership offer tremendous possibilities for growth. SADC has a population of 392 million people and is also a huge potential market, although demand has been negatively impacted by low growth in the two largest economies, Angola and South Africa. When AICO was implemented in ASEAN, the CEPT signified that its main intent was to serve the regional market. At the time, there was sufficient regional demand to drive foreign investment and regional production at scale. Combined vehicle sales in the four major South East Asian markets were almost 1.5 million units, far above the current levels in SADC. Only a couple of countries in North Africa demonstrate sufficient levels of demand at present. Additionally, much of the SADC market is served by imported second-hand cars. South Africa prohibits the import of used vehicles, but following suit would create a major affordability issue in most SADC countries.[7] However for an assembly industry to have any future in the region, used car imports will unquestionably have to be restricted.

Beyond the rather unclear prospects of a viable automotive space, limited manufacturing capabilities and competitiveness in the SADC region present additional significant challenges to developing RVCs via AICO-like schemes. Deficits in electricity and water provision, and especially in transport infrastructure, are evident throughout the region (Black and McLennan 2016). For example, inadequate rail systems linking the SADC countries mitigate against the location of suppliers in neighbouring countries. In any event, in the automotive sector related firms prefer to have their key suppliers in close proximity in order to ensure 'just in time' supply. Non-tariff barriers in the region, including border delays and cumbersome regulations, also increase the costs of regional trade. Even in the case of Lesotho, which is centrally located with duty-free access to South Africa and fairly seamless border controls, firms cite the difficulties of sourcing supplies from a neighbouring country (Black 2017). Although the lack of manufacturing competitiveness is indeed a challenge, it should not be seen as an absolute barrier. Improved infrastructure, which can greatly decrease manufacturing costs, is continually being developed in SADC under the 2012 Regional Infrastructure Development Master Plan and the 2012 Programme for Infrastructure Development in Africa on the continent more broadly.

Unit labour costs in Africa are generally higher than in Asia, and this certainly applies in the automotive sector as well (Barnes et al. 2017). Additionally, there has been strong labour union opposition to relocating production to lower-wage countries in the SADC region and beyond. For example, the National Union of Metal Workers of South Africa has strongly opposed the relocation of subcomponent manufacture to cheaper SACU countries (Markowitz 2016). There are other constraints as well. For example a SADC Secretariat representative, citing the case of a component plant in Botswana, stated that whenever there was a higher-level technical issue, workers had to wait for an expert to come from South Africa, which

[7]Interview with a SADC official, Gaborone, 8 February 2016.

created costly delays.[8] Exceptionally high-quality standards in the automotive industry also constrain the development of a regional supply base.

As the example of ASEAN has demonstrated, supportive policy arrangements are vital for RVCs to develop. SADC countries face the challenge of balancing the protection of their national industries while simultaneously opening up to regional trade. This is complicated by the fact that there is currently no other developed automotive hub apart from South Africa. Yet the biggest obstacle facing the integration of the industry within the region is that of the costs of trade diversion, which are particularly high given the large presence of low-priced, second-hand cars in most national markets. For automotive industrialisation to develop on a regional basis, there would have to be major limitations placed on the import of used cars. But why, for instance, would Mozambicans want to buy (relatively expensive) new cars made in South Africa rather than cheap, imported, second-hand ones from Japan?

Focussed automotive policies as well as some level of protection are necessary for SADC countries outside of South Africa to develop their industries and ultimately cultivate functioning RVCs. SADC member states that have automotive industries protected as sensitive ones within SADC's free trade area have indicated that the APDP and South Africa will undercut their own nascent enterprises if they loosen domestic protection in favour of a regional tariff scheme. SADC rules of origin are difficult to adhere to given the lack of capacity (especially for the export of CBUs), thus limiting the prospects for the regional free flow of goods.[9] Other SADC countries also do not have the necessary capacity or financial support to achieve the local content levels prevalent in South Africa. Additionally, as a customs union, all countries within SACU must comply with the APDP. Although this creates the potential for countries to utilise APDP support, it also leads to many challenges—as Botswana, Lesotho, Namibia and Swaziland lack the capacity to comply with regulations. In order to receive a production rebate credit certificate (PRCC) for exporting under the APDP, they must achieve a level of local value addition that they currently cannot (unless they export components only to South African original equipment manufacturers (OEMs) that apply for the PRCC). Foreign companies operating in these four countries must also apply for the PRCC in their own country. According to industry bodies, this has never been done before and the governments are unlikely to have the know-how to do so.[10] Thus, there are significant policy barriers in facilitating free trade in the SACU and SADC regions.

We have argued above that regional integration is critical to the development of the car industry in (sub-Saharan) Africa. This particular industry could also be a driver of regional integration, as vehicle producers place pressure on governments to increase market access and improve cross-border infrastructure (Lung and Van Tulder 2004). As noted, this has been the case in South East Asia already. Yet, it

[8]Interview with a SADC official, Gaborone, 8 February 2016.

[9]Interviews with a South African automotive industry representative, Pretoria, 8 February 2016, and with a South African automotive industry advisor, Johannesburg, 7 March 2016.

[10]Interview with a South African automotive industry representative, Pretoria, 8 February 2016.

is also possible that lobbying by private companies has the opposite effect in the short term—as countries raise special tariffs to protect their domestic industries. For example, Toyota's South African operation has seen a decline in exports to the rest of the continent as a result of higher tariffs being levied in Algeria and Nigeria (AIEC 2015).

5 Conclusion and Recommendations

A growing middle class in Africa is creating a surge in demand for motor vehicles. This represents a significant industrialisation opportunity, if competitive RVCs can be developed. However, SADC is some distance away from where ASEAN was when AICO was first implemented. There is an argument that the smaller economies could be drawn into RVCs as suppliers of major components for cars assembled in South Africa (or, say, Zambia). To some extent this is what has happened in ASEAN and Mercosur, where the automotive industry has played a leading role in driving regional integration. In ASEAN, in particular, there has developed a degree of specialisation and complementation involving Indonesia, Malaysia, the Philippines and Thailand. But there is an important distinction to be made with SADC, and with sub-Saharan Africa more generally. The aforementioned ASEAN countries are all medium- to large-sized markets, and all have a history of automotive production. The small SADC automotive cluster is already spread across three major locations (Durban, the Eastern Cape and Gauteng), all of which are situated in South Africa. It is difficult to envisage the emergence of many more such clusters in SADC. Even Lesotho, with its central location with respect to the major car-producing regions in South Africa, struggles to attract parts makers to invest in the country, given the extremely demanding quality and delivery reliability standards that exist in the automotive sector (Black 2017). Perhaps there is scope for automotive industry cooperation between the larger economies in their respective regions, for example Kenya, Nigeria and South Africa, but distances and especially transport costs are high between these countries.

Nevertheless, South Africa has an important role to play in capacitating the industries of other SADC countries. According to an interviewee from the Department of Trade and Industry, South Africa is 'fully supportive of regional industrialisation as a complement to growth dynamics for the South African industry'.[11] As indicated previously, South Africa is already seeing the movement of some of its component production to other SACU countries. South Africa can also assist in transferring skills and knowledge capacities to the region. The non-profit Automotive Supply Chain Competitiveness Initiative, established in South Africa in 2013, aims to enhance supplier competitiveness, increase localisation and facilitate

[11]Interview with a South African government official, Pretoria, 14 March 2016.

supportive industrial policies and regulations.[12] The Automotive Industry Development Centre—a provincial agency established in the Eastern Cape and Gauteng to increase the local automotive industry's global competitiveness—entered into a partnership with the Japan International Cooperation Agency in 2016 to dispatch experts to assist in component supplier skills development (Kgaphola 2016). South Africa could look to assist countries in the region in implementing similar capacity development programmes and partnerships.

The imperative for South Africa to assist other countries lies in the economies of scale and increased foreign investments that are realised in the long term from developing integrated RVCs. Even in the short term, the development of automotive industries outside of South Africa gives that country's component manufacturers the opportunity to export to nascent assembly operations in the region. One potentially important development is NAAMSA's recent institutionalisation of the African Association of Automotive Manufacturers. This body seeks to provide an independent perspective on identifying synergies and providing support in automotive industries on the African continent. They have placed focus primarily on collaboration with Nigeria, but are also looking to involve Algeria, Angola, Egypt, Ethiopia, Kenya and Morocco.

A strategy that worked well in the ASEAN region, and particularly in Thailand, was crowding investment towards specific products. By focussing policies on the production and export of one-tonne pickup trucks, Thailand began with assembly operations but eventually gained deep levels of expertise and value addition via this model. This allowed it to become a major producer and exporter of one-tonne pickup trucks, and as it moved up the value chain the benefits and its component production spilled over into the rest of the region (Barnes et al. 2017; Farrell and Findlay 2001; Kohpaiboon 2015). Other countries in the ASEAN region are also specialising in the production of specific cars, such as Indonesia in sport utility vehicles and Malaysia in passenger cars. Aftermarket production represents a potential starting point for SADC countries that do not yet have significant demand for new vehicles or the capacity to engage in competitive full-scale production. Certain countries such as Mozambique already have nascent component production specifically for the aftermarket (Black and McLennan 2016). By beginning with aftermarket components such as glass, low-level electrical ones and tyres, the capabilities developed could eventually be transferred into OEM assembly supply chains.[13]

With very low levels of vehicle ownership in tandem with rapid economic growth, the potential for a boom in automobile production in SADC and sub-Saharan Africa is evident. Notable barriers such as low market demand and marginal indigenous industries outside South Africa explain the minimal foreign investment up to this point. However these dynamics are changing, and regional integration is essential to the development of RVCs—which could lead to the establishment of a competitive automotive industry. The South African government

[12]For more information on this, see: http://ascci.co.za

[13]Interview with a South African government official, Pretoria, 14 March 2016.

together with multinationals based in the country are looking to create more regional synergies. In doing so, they need to adopt a far-sighted approach that encourages and enables other countries of the region to participate in emerging value chains. Regional integration is essential for developing a significant automotive industry, but the obstacles are considerable. The political geography of the region and the tendency of the industry to cluster in a few locations—which, in turn, develop key agglomeration advantages—mean that many smaller countries are likely to miss out on attracting investment. It will, therefore, be difficult for the automotive sector to drive regional integration independently of a broader integration process—one that develops RVCs in a range of sectors, and within the context of a larger common market.

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