Stuck in neutral

A case study of the challenges facing the Kenyan automotive sector

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Abstract

Successful industrialisation strategies have helped many developing countries transform the structure of their economies, enhance productivity and boost economic growth. Prioritising which industrial sectors to develop, and how, is paramount given scarce financial resources, skills shortages and limited technological capabilities. Although still a developing country, Kenya has the most advanced economy among her regional peers. Kenya's small automotive sector was established four decades ago with the support of import substitution industrialisation (ISI) policies. However, following liberalisation of the economy in the last decade of the 20th century, domestic industries were suddenly exposed to competition from imported products. On one hand this blunted prospects for faster development of manufacturing capabilities, but on the other, imports provided consumers with affordable alternatives. As a result, the domestic automobile assembly sector faces ongoing competition from used passenger vehicle imports. Fundamentally, the sector lacks access to a sizeable market, which inhibits attraction of large-scale investments necessary for upgrading. Market attributes aside, this study found several other challenges confronting the sector. These are; the absence of a national automotive strategy, incoherent policy decisions and ineffective regional integration which has hampered growth beyond national borders. Additionally, weak support for higher levels of domestic value addition in the auto components and motorcycle sectors has been exacerbated by fierce competition from Asian producers. Recent interventions to restart passenger vehicle assembly have only spurred superficial development notwithstanding some government support. The challenges facing late industrialisers are multi-dimensional with near term solutions difficult to discern – the small Kenyan automotive sector is emblematic of this.

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Abbreviations

AfDB	…….	African Development Bank
ASEAN	…….	Association of Southeast Asian Nations
AVA	…….	Associated Vehicle Assemblers
CKD	…….	Completely Knocked Down Kit
COMESA	…….	Common Markets for Eastern and Southern Africa
CTFA	…….	Continental Free Trade Area
EAC	…….	East African Community
EOI	…….	Export Oriented Industrialisation
EU	…….	European Union
FBU	…….	Fully Built Unit
FDI	…….	Foreign Direct Investment
FOB	…….	Free on Board
FTA	…….	Free Trade Area
GDP	…….	Gross Domestic Product
GFC	…….	Global Financial Crisis
GoK	…….	Government of Kenya
GMEA	…….	General Motors East Africa
GVC	…….	Global Value Chain
HS	…….	Harmonised System
IMF	…….	International Monetary Fund
IRF	…….	International Road Federation
ISI	…….	Import Substitution Industrialisation
ITC	…….	International Trade Centre
KAM	…….	Kenya Association of Manufacturers
KES	…….	Kenya Shilling
KMI	…….	Kenya Motor Industry Association
KNBS	…….	Kenya National Bureau of Statistics
KVH	…….	Kenya Vehicle Manufacturers
MAAK	…….	Motorcycle Assemblers Association of Kenya
MENA	…….	Middle East and North Africa
NSE	…….	Nairobi Securities Exchange
NTB	…….	Non-Tariff Barriers
OECD	…….	Organisation for Economic Co-operation and Development
OEM	…….	Original Equipment Manufacturer
OICA	…….	International Organisation of Motor Vehicle Manufacturers
SA	…….	South Africa
SADC	…….	South African Development Community
SKD	…….	Semi Knocked Down Kit
SME	…….	Small and Medium-sized Enterprise
SSA	…….	Sub-Saharan Africa
USD	…….	United States Dollar
WB	…….	World Bank
WTO	…….	World Trade Organisation

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1.0 INTRODUCTION

1.1 Background

The road to industrialisation for late industrialisers (countries) is beset with a number of challenges. They have to contend with;

a) long-established industrialised countries that dominate entire industries and control the most lucrative sections of global value chains.
b) newly industrialised countries still trying to carve out niches for themselves in increasingly competitive trade environments.
c) globalisation of trade which has widened the geographic distribution of manufactured goods extending the market reach of the most efficient producers.

The advent of global value chains has seen the integration of multiple countries in the production process for a single product. Industrialised incumbents control the most lucrative parts of these value chains while newly industrialised countries vie for positions further down. This structural hierarchy presents major challenges for late industrialisers. Besides acquiring the wherewithal in terms of skills, investment, and technology, late industrialisers are unlikely to succeed without embedding themselves in regional or global value chains. Yet this is not an easy endeavour especially if a country is situated in a region that lacks a history of industrial development. In the absence of regional value chains to participate in, a lone ranger approach to developing industrial capabilities is unlikely to bear fruit without unfettered access to a large regional market that presents opportunities for economies of scale. On the other hand, waiting for regional neighbours to 'catch up' in order to foster value chain development by segmenting production, spreading risks, sharing development costs, and exchanging learning experiences may behold a country's industrial ambitions to the pace at which her neighbours develop theirs. This dissertation will examine a specific country case – Kenya, which faces such a dilemma as it attempts to develop an industrial base in the automotive sector.

Industrialisation has been the path to economic development and prosperity since the mid-eighteenth century for a majority of countries in the global west (Kuznets, 1966) and more recently in the global east (Lin, 2011). Sub-Saharan Africa (SSA) remains the least industrialised region of the world (UNIDO, 2015) comprising several late industrialisers. Myriad reasons can be cited for the delayed industrialisation of countries across SSA. These include the long-lasting and debilitating effects of imperial and colonial domination, which positioned SSA countries predominantly as producers of primary commodities. This was compounded by minimal beneficiation of such commodities into higher

value products. Unfortunately, and notwithstanding half a century of self-governance, several countries in SSA appear unable to wean themselves off the unsustainable dependence on primary commodities. Such dependence appears more severe in countries endowed with non-renewable natural resources such as oil, precious metals and minerals and less severe for those without, who still nonetheless rely on other primary sectors such as agriculture for the bulk of economic productivity (Taylor, 2016).

Other reasons for low industrialisation levels across SSA include a lack of sufficiently skilled labour, small internal markets, ineffective regional integration, shallow capital markets and insufficient foreign direct investment (FDI) flows. Further constraints are; low innovation levels relative to other global regions, poor provision of public services, inadequate infrastructure (UNIDO, 2015), challenges with prudent management of economic resources, shortcomings with basic governance, and corruption (Transparency International, 2016). Suffice to say the list of drawbacks against developing industrial capabilities across SSA is a long one.

Despite the abundant challenges, some countries in SSA have started making incremental steps towards transforming the structure of their economies away from dependence on the primary sector. This has entailed crafting appropriate policies to take advantage of endowments such as low labour costs, urbanisation and an expanding middle-class. Attention has also been given to skills upgrading initiatives, improving access to regional markets, and establishing conducive environments to attract foreign direct investment (FDI). The East African Community (EAC), a regional economic bloc comprising five east African countries[1] has several ongoing initiatives in this regard supported by multiple stakeholders (AfDB, 2011). Notwithstanding this, the process of converting latent endowments into benefits that yield positive developmental outcomes needs careful nurturing to achieve meaningful results.

Kenya is classified as a lower middle-income country (World Bank, 2017) and has the largest and most diversified economy within the EAC. Furthermore, Kenya's GDP of USD 70.50 billion[2] (World Bank, 2017) is the ninth largest across the continent (Table 1.0) which is noteworthy given the country's few mineral endowments. With the exception of Ethiopia, seven of the eight African countries with larger economies enjoy economic rents from at least one major non-renewable resource[3]. Paradoxically, this

[1] Burundi, Kenya, Rwanda, Tanzania and Uganda.
[2] As of 2016
[3] With the exception of Egypt, Morocco and South Africa, the rest have significant oil and gas endowments. South Africa is particularly rich in precious metals and minerals, while Morocco is endowed with large deposits of phosphate, a key input in

may explain Kenya's relatively faster progress towards industrialisation vis-à-vis some of her peers. The lack of resource dependence may have occasioned better prospects for diversification while helping avoid the resource curse[4] phenomenon. Kenya's semi-modern agricultural sector provides the largest contribution to GDP at 32.5% and employs over 70% of the labour force (KNBS, 2017). In terms of manufacturing capabilities, a 2015 report by the United Nations Industrial Development Organisation (UNIDO) placed Kenya significantly ahead of her EAC peers in metrics measuring manufacturing value added and industrial competitiveness, notwithstanding the relatively small contribution of manufacturing to Kenya's GDP estimated at 9.2% in 2016 (KNBS, 2017).

Table 1.0: GDP (nominal) estimates of the ten largest economies in Africa – 2016

	Country	US$ billion
1	Nigeria	405.0
2	Egypt	336.2
3	South Africa	294.8
4	Algeria	156.0
5	Morocco	101.4
6	Sudan	95.6
7	Angola	89.6
8	Ethiopia	72.4
9	**Kenya**	**70.5**
10	Tanzania	47.4

Source: World development indicators database, World Bank (2017)

1.2 Statement of research problem

Industrialisation across Africa has been slow; yet certain industries seem to be stuck in the infant industry phase despite having been in existence for decades. Kenya has had a relatively lengthy experience with basic motor vehicle assembly compared to most of her SSA peers who have had minimal experience in the sector. This notably excludes South Africa whose automobile industry is the oldest and largest across the continent tracing its origins back to the early decades of the 20th Century (Black, 2007). Other continental players of note include the north African countries of Morocco, Algeria and Egypt. Nigeria

the production of fertilizer. Egypt benefits from its strategic geographic location collecting rents from the Suez Canal, which links the Mediterranean Sea to the Red Sea providing shorter access between Europe and Asia.

[4] The phrase resource curse is attributed to the British Economist Richard Auty (1993) and is sometimes referred to as the paradox of plenty. This is when developing countries endowed with mineral wealth tend to lag behind in economic development and are more likely to suffer economic mismanagement due to an over-dependence on resource rents. This leads to the neglect of other economic sectors and minimal diversification. Furthermore, battles for control of the rents accruing from the resources are likely amongst political elites.

and Ghana in western Africa and Ethiopia in eastern Africa continue to make halting attempts to develop their respective industries (Black & McLennan, 2016; Deloitte, 2016). This study seeks to establish the constraints holding back faster development of the automotive sector in Kenya, and critically assess whether a viable future is discernible.

The three vehicle assembly plants in Kenya were established four decades ago in the mid-seventies (Murage, 1983). Notwithstanding this, the automobile assembly sector has failed to move beyond very basic assembly. This is aggravated by a near absence of locally made components which is not only an indicator of the sector's lack of progression, but also a sign that transition towards full-scale manufacturing is unlikely in the foreseeable future. On the other hand, it may be that the lack of fundamental attributes necessary for development of the sector account for the lack of progress. From a comparative advantage standpoint, these include; access to requisite skills, sufficient capital, and appropriate technology. Furthermore, the non-availability of a large market within Kenya and the east African region, at present, may indicate why major global carmakers are yet to engage more substantially with the Kenyan industry.

It will also be instructive to consider the common characteristics that have impeded industrialisation across SSA and whether these contribute to understanding the underdevelopment of the Kenyan auto sector. The characteristics include post-independence industrial policies that encouraged import substitution industrialisation, which had the unintended consequence of nurturing and protecting inefficient domestic industries. Such policies were subsequently abandoned in the late 1980s' and early 1990s' following the widespread adoption of Structural Adjustment Programmes (SAPs)[5] across the continent. In Kenya's case, the introduction of policies liberalising trade following implementation of the SAP saw an influx of imports of several categories of products, including used motor vehicles from western and eastern markets. This is likely to have stifled prospects for development of the auto sector in a similar manner to the stunted outcomes observed across other manufacturing industries in Kenya as observed by Chege et al (2014). Other factors that held back development of the sector, and domestic manufacturing generally, include lengthy periods of sluggish economic growth and the dynamics that stalled then restarted regional economic integration in East Africa. Therefore, sector specific

[5] Structural Adjustment Programmes were a package of policy prescriptions linked to concessional financing provided by the Bretton Woods Institutions i.e. The International Monetary Fund and The World Bank, to a number of developing countries in the eighties and nineties to assist them overcome fiscal imbalances and promote open market oriented economic growth.

impediments will be investigated within the broader context of challenges confronting structural transformation, economic productivity and growth.

1.3 Objectives and significance of the study

The objectives of this study are to;

i) Establish the state of the automotive sector in Kenya by examining its historic trajectory followed by an assessment of its future prospects. The focus is on automobile assembly as well as the emerging motorcycle sub-sector.
ii) Determine constraints limiting further development of the sector and in doing so assess its long-term viability. This is instructive in light of attempts by several developing countries to establish national automotive industries, yet available evidence indicates few have had success (Mortimore, 1995; Humphrey & Memedovic, 2003; Busser, 2007; Wad 2009). The attendant costs of not succeeding can bear heavily on economies with meagre resources. Consequences range from exacerbated balance of payments imbalances to costly and counterproductive fiscal incentives typically in the form of tariff concessions.
iii) Contribute to the discourse on challenges facing late industrialisers highlighting the need for accessible regional markets, and how the prominence of global value chains determines the pace of regional industrial development.

The significance of the study is to make a further contribution to the discourse on the challenges confronting industrialisation in Africa. The automotive sector stands out due to the transformative role of motorised mobility across societies worldwide that started in the 20th century. Yet developing a national automotive sector in the 21st century is immensely complex and requires deployment of significant economic resources. A previous study evaluating the Kenyan vehicle assembly sector was conducted by Murage in 1983. The study found that the industry lacked scale and was characterised by an unsustainable proliferation of models across several marques. Over thirty years later, and in the face of deepened integration of global automotive value chains, this study examines how the Kenyan auto sector has fared. Can it find its footing within the highly integrated global industry that is currently experiencing disruptive change? In attempting to answer this question, the study will engage with the challenges and prospects facing late industrialising countries in an era of hyper globalisation.

1.4 Methodology

The methodology was in the main comparative and analytical. A qualitative approach involving identification of the relevant theoretical and empirical literature was adopted to identify suitable country and regional case comparisons. This factored in a chronological perspective taking into account evolving trends within the global automotive industry. Yin (2013) suggests a similar approach when studying cases where trajectories are non-linear and competing hypothesis offer evidence on achievement of preferred outcomes but an absence of universal consensus persists on which hypothesis is the 'right one'. Murage (1983) employed a similar approach in an earlier study on the automotive sector in Kenya, while Okatch, et al. (2011) modified the approach with the introduction of conceptual content analysis in their study examining constraints to subcontracting within the vehicle assembly industry in Kenya. Guided by the literature on auto sector development and automotive value chains in developing regions, various data sources were drawn upon including information from international industry reports, official government statistics, and publications from recognised consulting firms. Articles published in reputable Kenyan and international media were also cited. The descriptive statistics were analysed alongside findings from stakeholder interviews carried out during a field trip to Nairobi, Kenya in February 2017. The field trip presented the opportunity to engage directly with industry stakeholders. This included site visits to two vehicle assembly plants and a local auto components manufacturer. Further, discussions were held with OEM franchise holders distributing new vehicles and motorcycles. A meeting with an official from the local auto industry's representative body provided useful historical context.

1.5 Structure of the dissertation

This dissertation has four sections. Following this introduction, the literature review starts by looking at the role of industrialisation in economic development and considers the views of early proponents on the subject before discussing industrialisation outcomes across SSA. The automotive industry is by nature complex and trying to develop a national industry, it could be argued, may be out of reach for developing countries with small internal markets, low skills levels, and in need of more labour absorbing industries. Due to a variety of reasons, foremost being available market size, strong arguments can be put forward as to why countries such as Kenya ought to focus instead on building capabilities in modern sectors where comparative advantages are more evident with clearer prospects for broader economic returns. This debate is given due attention by examining challenges and successes faced by other countries that have attempted to develop domestic auto industries. The section goes on to locate and benchmark Kenya's automotive sector among those found elsewhere on the African continent. Unlike the pioneering

nations of the west that independently developed and then produced automobiles, the situation today is very different. Manufacturing processes for vehicles in the 21st century have evolved with production now taking place within global and regional value chains for the most part. Within these value chains, different countries and regions specialise in the production of several components. Ultimately, the components are consolidated in a central location where a complete car is assembled. For Kenya's automotive production capabilities to come full circle i.e. to the point where actual manufacturing takes place, it is likely that Kenya would have to position itself within a regional or continental value chain. Obtaining an understanding of existing automotive production capabilities across the continent is thus useful in charting out what the future could potentially hold for the industry on the continent.

Section three engages with the automotive sector in Kenya. It starts with a discussion of the performance of the country's manufacturing sector to obtain a macro perspective of Kenya's industrial landscape. This is followed by an in-depth review of the automotive sector, which was partially informed by stakeholder insights obtained from a field trip in February 2017. Additionally, the question of whether there exists sufficient automotive space, i.e. a large and accessible market, at a national and regional level is explored. With the exception of large national markets such as those found in the United States, China and India, few countries possess the scale of market necessary to independently sustain a domestic auto industry. As such, prospects for the Kenyan auto industry becoming a hub for the east African region are assessed. This section also gives due attention to the motorcycle, both the conventional two-wheeler and the three-wheeler tuk tuk. The rise in popularity of motorcycles and tuk tuks' across the developing world, first in Asia and more recently in Africa cannot be overlooked. Driven mostly by affordability in regions with vast numbers of low-income earners, the motorcycle has emerged as an alternative transport medium. This is especially so in cities suffering the dual maladies of poor transport infrastructure and inadequate public transport which have led to chronic traffic congestion. The majority of motorcycles on Kenyan roads are imported as unassembled kits that undergo local assembly. Prospects for achievement of higher levels of local content during assembly, beyond the labour required to assemble the kits, will be discussed here. According to the literature, the growth of domestic components production has been a key aspect of the more successful attempts at automotive sector development.

Section four concludes by consolidating the study's findings. A summary of Kenya's automotive sector is presented, highlighting the various challenges faced in trying to develop capabilities in a highly sophisticated industry; these include skills and technology deficits, as well as a lack of necessary market

attributes nationally and regionally. As a globally integrated industry, the hurdles late industrialisers must overcome to achieve meaningful engagement with the industry's value chains is highlighted. These challenges point to the urgent need for appropriate, cohesive and coordinated industrial and trade policy setting at national and regional level.

2.0 LITERATURE REVIEW

2.1 The automotive sector in developing countries

The automotive sector is one of the largest industrial sectors globally encompassing highly sophisticated manufacturing processes across the various levels of its core and associated value chains (Barnes et al, 2017). Due to globalisation, it has also evolved into a highly integrated sector with automotive manufacturing clusters spanning across continental regions whilst forming part of global value chains that transcend continental boundaries (Humphrey & Memedovic, 2003). As such, the depth and breadth of a country's industrialisation landscape are essential first order determinants for successful development of the sector. This necessitates the need to examine the industrial capabilities of a country and more broadly the regional industrial landscape to discern the sector's chances for success. Section 2.2 does this by engaging with the literature on industrialisation in Africa. Furthermore, to participate in the sector in a manner that yields economic benefits as well as positive spill over effects, such as the development of ancillary industries, developing countries need to attract the 'right kind' of foreign direct investment (FDI) (Barnes et al, 2017). More specifically, this relates to investment interventions targeted at upgrading the sector's technological capabilities as well as development of local supply chains for automotive components. At a macro level, given the sector's heavy reliance on foreign inputs particularly in its early stages of development, when availability of locally produced components is likely to be low, close attention should be paid to the sector's consumption of scarce foreign exchange resources (Mortimore, 1995).

Attempts to establish auto sectors across the developing world started in earnest in the first half of the twentieth century. From the 1950s onwards, developing countries made use of import-substitution industrialisation (ISI) policies to support further advancement of the sector (Humphrey & Memedovic, 2003; Barnes & Morris, 2008; Wad, 2009). Although support from ISI policies was instrumental in protecting domestic industries, it occurred at the expense of production efficiency and international competitiveness (Mortimore, 1995; Humphrey & Memodovic, 2003). Development of a successful automotive industry has long been perceived as validation of a country's industrialisation strategy, and a visible sign of economic transformation (Mortimore, 1995). Due to the sector's technological complexity, embedded within extensive value chains, this perception is not misplaced. If a country can develop a functioning and viable automotive sector, it is likely to have acquired the technological capabilities and productive efficiencies to succeed in other less complex industries. However, beyond

pursuing development of the sector for reasons of national prestige and industrial self-reliance, there are critical elements that developing countries ought to consider in order to nurture the growth of the sector. While no defined formula exists given each country's unique circumstantial attributes and endowments, existence of the following elements is vital;

i) existence of an automotive space (Black & McLennan, 2016)
ii) integration of the domestic industry into regional and global value chains (Humphrey & Memedovic, 2003)
iii) access to regional and international export markets preferably in emerging regions (Wad, 2009)

In addition to the above, Humphrey and Oeter (2000) highlight other factors that contribute in equal measure to shaping the trajectory of a country's auto sector. These encompass strengthening domestic manufacturing capabilities, particularly labour skills and facilitating the access to and upgrading of technology for assemblers and component producers. Furthermore, supportive industrial and trade policies are essential to provide a degree of support to fledgling auto industries in terms of domestic protection on one hand and regional and international access on the other. Such support should however be rationalised as the sector matures and becomes more integrated within global value chains.

With regards to the requirement for an automotive space, conceptualisation of the different types of viable automotive spaces is necessary. By necessity, factories producing automotive products must operate at economies of scale. It is thus essential that national or regional markets are large enough to absorb production output or access to export markets exists. The conceptual frameworks used to describe the different types of automotive spaces as illustrated by Humphrey and Oeter (2000) are;

a) **Protected autonomous markets** - these are by nature large markets such as those found in China and India, which have high levels of trade protection. Given the large populations within these economies and the growing purchasing power of an expanding middle class, global auto manufacturers are compelled to situate production domestically even if the terms governing market access may require concessions in aspects such as ownership. The scale of the markets may also allow locally grown brands the opportunity to flourish usually after collaborating with a foreign manufacturer from whom vital technology is acquired, and diffused into domestic production processes.
b) **Integrated peripheral markets** – this type of automotive space is enabled by access to and integration with a large and established automotive market such as that found in the European Union or within the North American Free Trade Agreement (NAFTA) area. Typically, auto sectors situated

in peripheral markets gain access to larger established markets by virtue of geographic proximity and lower production costs. These features can lead to integration of production value chains across the peripheral market and the established one, which enables the peripheral market's auto sector to develop in scale and levels of competency that would have been difficult to attain by relying solely on the domestic market.

c) **Emerging regional markets** – automotive spaces found in these markets typically start as a collection of national auto sectors that are unlikely to possess the characteristics required for successful independent growth. However, effective and well-coordinated regional integration can spur automotive production growth across a regional economic zone. Output is absorbed within the regional market as well as export markets situated further afield. This is best exemplified by the East Asian *flying geese* model where one country spearheads a regional value chain (Mortimore, 1995; Wad 2009) with the formation of production value chains being analogous to that of a formation of flying geese. The division of labour within a successful regional value chain is such that countries focus on areas of strength and competence with minimal duplication.

2.2 Global automotive value chains

The evolution of global automotive value chains has been instrumental in enhancing the development of auto sectors in some developing countries starting from the last decade of the twentieth century. Humphrey and Memedovic (2003) illustrate how globalisation trends spurred a shift in the balance of production from the Triad regions[6] to emerging markets in Latin America, Southeast Asia and Central Europe as well as India, China and Mexico. Hitherto, auto production in countries within these regions had grown incrementally under the protection of ISI policies and market-seeking FDI by multinational corporations (MNCs), but had not yet become a significant source of global supply. This began to change with mounting pressure for trade liberalisation coming from multilateral institutions around the turn of the century. Trade-related investment measures (TRIMs), common in many emerging countries, came under attack (Humphrey and Memedovic, 2003; Barnes & Morris, 2008) prompting auto MNCs to streamline emerging market based production by integrating operations both regionally and globally. Continuing improvements in production capabilities within emerging markets as well as follow-sourcing by tier one component suppliers, seeking to locate production facilities closer to those of principal firms, further aided the increase in emerging markets output. Ultimately, these dynamics led to the emergence

[6] North America, the European Union and Japan are referred to as the Triad regions given the early dominance their original equipment manufacturers (i.e. major automobile brands) had on the global industry.

of regional production systems, particularly in Southeast Asia, with regional value chains becoming an integral part of larger global automotive value chains.

2.3 The examples of Mexico and Thailand

Following the discussions on the importance of upgrading domestic manufacturing capabilities, supportive industrial and trade policies, and the emergence and evolution of regional value chains, this section draws on insights from the experience of two developing countries. Mexico and Thailand have developed successful automotive industries despite initial attributes indicating the contrary. As such, a review of their respective auto industries will assist in the discussion further ahead on the possibilities and challenges facing the auto sectors in Africa and specifically the one in Kenya.

Mexico

Mexico's automobile assembly sector dates its origins back to the 1920s where passenger vehicles were assembled from completely knocked down (CKD) kits[7]. From the early 1960s to the early 1980s, the sector underwent a period of expansion and consolidation under the protection of import substitution industrialisation (ISI) policies (Mortimore, 1995; Carillo, 2000). The result was a twelve-fold increase in production capacity from 50,000 to 600,000 units. However, this expansion was characterised by inefficiencies due to the use of outdated technologies, which resulted in overpriced vehicles. Furthermore, the sector had a negative impact on Mexico's balance of payments due to a heavy reliance on foreign inputs, juxtaposed against low automotive exports. As such, the sector's competitive outlook at the start of the 1980s was decidedly weak. However, a remarkable transformation occurred over the last two decades of the 20th century led by a rapid and sustained expansion of exports (Mortimore, 1995). Exports of passenger vehicles grew ten-fold from approximately 50,000 units per annum in the mid-1980s to 500,000 units by the mid-1990s. Mortimore (1995) highlights the convergence of factors responsible for the transformation, grouped into three categories namely;

i) international market factors
ii) corporate strategies of major automakers
iii) Mexico's national automobile policy

[7] Varying definitions exist to describe completely knocked down kits (CKDSs) but essentially these are auto components that are delivered to an auto assembler from an original equipment manufacturer (OEM) in the form of kits with each kit containing all the essential parts necessary to assemble the complete vehicle. The assembler then assembles the vehicle starting with the welding of the frame.

In the first category, Mortimore describes how North American and European automakers found their global dominance under threat from the emerging Japanese auto industry which was proving more efficient and whose products were rapidly gaining global presence. This prompted the second category of factors i.e. a change in strategies for North American and European automakers. To the benefit of Mexico's auto sector, American automakers instigated strategies to protect market shares at home, which resulted in technological upgrading of subsidiary production facilities situated in Mexico and deeper integration with lead production facilities in the United States (Carillo, 2012). Mexico's low cost production base coupled with geographic proximity were undoubtedly key influencing factors, effectively characterising the Mexican automotive space as an integrated peripheral market. This ultimately resulted in up to two thirds of Mexican passenger vehicle production being exported to the United States by 1994. Additionally, the North American Free Trade Agreement (NAFTA) between the United States, Mexico and Canada, which came into effect in 1994, provided additional stimulus for trade in automotive products (vehicles and components) between Mexican auto plants and those in the United States. Thirdly, as ISI policies were phased out, the national automobile policy evolved in a manner that granted automakers the flexibility to further integrate output from Mexican plants with production from international operations. Such was the success of the auto industry due to these changing dynamics that by 1993 it accounted for 16% of Mexico's total exports and was a notable supplier of vehicles and auto components in OECD markets (Mortimore, 1995).

Thailand

Thailand has been referred to as '*Detroit of the East'* (Thailand's booming car industry…, 2013) given the remarkable success of the country's automotive industry; especially post the East Asian financial crisis of 1997-98. Production increased rapidly between 2000 - 2007 rising 280% to 1.2 million units (Wad, 2009). The global financial crisis in 2008-09 intervened to slow down growth but by 2012 the industry had recovered with production rising to 2.45 million units (Thailand's booming car industry…, 2013), a remarkable 650% increase from twelve years prior. With exports in 2012 accounting for approximately 1 million units or 40% of production, Thailand was the 7th largest automobile exporter globally.

The success of Thailand's auto sector stands out given the different outcomes encountered by regional neighbours Malaysia, Indonesia and The Philippines who also sought to develop national industries. Similarly, to Mexico, Thailand's auto sector initially developed with support of government policies geared towards import substitution industrialisation (Busser, 2007; Wad, 2009; Natsuda & Thoburn,

2012). Such policies, which emphasised local content in production along with imposition of high tariff walls, did not result in enhanced international competitiveness. Notwithstanding this, the design of local content guidelines did have a lasting developmental impact with thresholds set for local content levels being exceeded by firms even after removal of mandatory limits in 1998 (Barnes et al, 2017). Another similarity to Mexico was the presence of foreign automakers, Japanese and American firms, that had established plants in Thailand to supply the domestic market i.e. market-seeking FDI. The East Asian financial crisis of 1997-98 precipitated a slump in the domestic market prompting an outward focus by Thai-based automakers (Wad, 2009; Doner & Wad, 2014). Government was supportive and trade and industrial policies were adjusted in a manner that enabled automakers to integrate into regional and global value chains, while orienting production towards higher levels of exports (Wad, 2009; Barnes et al, 2017).

Other measures that helped shape the Thai auto sector and position it as a competitive player in regional and global export markets included; policy interventions encouraging large scale production – achieved by controlling the permitted number of assemblers, tax based export incentive schemes, and support for formation of industrial clusters for auto component manufacturers (Natsuda & Thoburn, 2012). Furthermore, attributes such as relatively low labour costs and ease of access to affordable infrastructure helped boost the sector's competitiveness (Barnes et al, 2017). It is interesting to note that protective measures, in particular high import tariffs, limiting access to the domestic market were not abandoned. Instead, the right mix of trade and industrial policy measures proved successful in re-positioning the Thai auto sector.

In summary, the success in enhancing competitiveness of Thailand's auto sector can be attributed to three main factors;

i) integration into regional and global value chains comprising global automakers and tier one suppliers of components
ii) fiscal support through tax-based export incentives that helped facilitate access into emerging regional and global export markets
iii) supportive government policies that helped transition the sector from an ISI nurtured inward looking orientation towards one encompassing enhanced international competitiveness.

The pivotal moments for the Mexican and Thai auto sectors came about during a transformative period for the global auto industry, which occurred over the last two decades of the twentieth century. The

governance structures underpinning global automotive value chains evolved from being mostly producer driven towards a more relational association between global automakers and tier one suppliers i.e. those suppliers near the top of the value chain hierarchy (Sturgeon et al, 2008). This closer association entailed deeper collaboration in the production process and stimulated greater geographical linkages whereby tier one suppliers would 'follow' automakers around the globe by establishing production facilities in close proximity. With reference to this study, the transformation of the Mexican and Thai auto industries demonstrates the vital importance of viable automotive spaces for a national industry to develop and thrive. In Mexico's case, as an integrated peripheral market, the industry's proximity to the large U.S market created opportunities for value chain integration when the competitive pressures faced by American auto firms prompted the search for a lower-cost production base. While in Thailand's case, the right mix of industrial and trade policies enabled the sector to emerge as the 'lead goose' in an emerging regional market that was of interest to global automakers.

2.4 Industrialisation and structural transformation in Africa

The path towards industrialisation for many African countries has been a bumpy one with initial attempts in the 1970's and 80's characterised mostly as a failure (Ajakaiye & Page, 2012). Several observers have provided insight to the discourse. McMillan et. al, (2014) find the contribution of manufacturing to GDP for several countries across the continent has hardly moved beyond the 15% level where it was in the 1960's and 70's. With specific regard to sub-Saharan Africa, Newman et. al, (2016) find the average share of manufacturing value added in GDP was approximately 10% in 2012. More alarmingly, using panel data from 49 countries, Gui-Diby and Renard (2015) find the share of manufacturing value added across Africa decreased at an annual average rate of 5.68% between 1980 – 2009 indicating deindustrialisation. It could be argued the decline in the share of manufacturing appears more pronounced given the recent rapid growth of other sectors such as mining and services. The United Nations Economic Commission for Africa (UNECA) concurs with the deindustrialisation hypothesis in its Economic Report on Africa (2015) although notes that manufacturing has been growing in absolute terms but at a very slow pace. The sector has not kept up with GDP growth and has grown noticeably slower than other sectors (Table 2.0). These observations are worrisome for plans to industrialise across the continent.

Table 2.0: Overall and sectoral GDP growth in Africa (% per annum)

Growth	1961-1979	1980-1999	2000-2012
GDP	4.9	2.4	4.9
Agriculture	3.3	3.3	3.6
Industry*	6.1	1.5	5.2
Manufacturing	4.4	1.7	3.1
Services	4.5	3.0	5.6

*Industry includes mining, electricity etc.

Source: UNECA, 2015: 47

The slow pace of manufacturing growth in Africa contrasts poorly against Asia where the share of manufacturing has grown more rapidly, increasing at an average rate of 8% between 1980-2009 (Gui-Diby and Renard, 2015). Furthermore, according to the United Nations Industrial Development Organisation (UNIDO) Africa underperformed other emerging and developing regions in the realm of manufactured exports (UNIDO, 2015) as shown in Table 2.1.

Table 2.1: Emerging and developing regions manufacturing exports (billions, current US$)

Region	**1995**	**2005**	**2013**
Emerging industrial countries*	653	1,944	4,256
Asia and Pacific±	346	1,291	3,371
Latin America^	213	460	733
Africa§	41	110	212

*As classified by UNIDO, comprising; Argentina, Belarus, Brazil, Brunei Darussalam, Bulgaria, Chile, Colombia, Costa Rica, Croatia, Cyprus, Greece, India, Kazakhstan, Latvia, Mauritius, Mexico, Oman, Poland, Saudi Arabia, Serbia, South Africa, Suriname, Thailand, Macedonia, Turkey, Ukraine, Uruguay and Venezuela
± As classified by UNIDO comprising 48 developing and emerging economies in the region excluding the following industrialised and high-income economies; Bahrain, Hong Kong, Japan, South Korea, Kuwait, Macao, Malaysia, Qatar, Singapore, Taiwan and the United Arab Emirates
^ As classified by UNIDO comprising 37 Latin American countries
§ As classified by UNIDO comprising all countries on the African continent and the island nations of Cabo Verde, Comoros, Mauritius, Reunion, Sao Tome and Principe, and Seychelles.

Source: adapted from UNIDO, 2015: 184

Several factors are attributable to the dismal performance of manufacturing growth in Africa over the last half century. These include general economic decline in the last two decades of the 20th century occasioned in part by commodity and debt crises (Van de Walle, 2001; Deaton, 1999), as well as shortcomings in management of natural resource rents. Furthermore, neoliberal economic policies adopted under structural adjustment programs (SAPs) dispensed with trade protection for the few existing

domestic industries, which had been established and nurtured under import substitution industrialisation. On one hand, this ameliorated the burden domestic industries placed on scarce foreign exchange resources due to reliance on foreign inputs. On the other, it exposed local industries to international competition from regions with more efficient industries particularly those situated in Asia (Ajakaiye & Page, 2012; Kaplinsky & Morris, 2007).

At the crux of Africa's inability to industrialise is the lack of structural transformation with several economies in SSA still reliant on primary sector productivity for growth and development. Poor management of scarce fiscal resources, skills and knowledge gaps, technology deficits, unfriendly business environments and infrastructure gaps are some of the factors holding back the pace of economic transformation. Yet the significant productivity gains likely from manufacturing are well documented. Ajakaiye and Page (2012) note the estimated manufacturing-agriculture labour productivity ratio for low-income Africa as 2.5 to 1.0, while McMillan et. al, (2014) provide an estimate of 2.3. This compares to Latin America's ratio of 2.8 and Asia's of 3.9. The productivity gains from manufacturing are clear and from the examples of other developing regions, the scope for Africa to enhance these gains beyond current levels exists.

McMillan et. al, (2014) also note the lingering side effects of trade liberalisation in several African countries. Imports of manufactured goods, initially from western countries, were replaced by low priced imports from the Far East and in particular China at the turn of the century. This contributed to deindustrialisation and the transfer of labour from small, and often struggling, manufacturing industries back to agriculture or informal retail activity[8]. More recently, the collapse of global commodity prices has had similar effects on the movement of labour from high productivity mining back to low productivity agriculture and informal retail. McMillan, et al (2014) observe this in two resource dependant economies, Nigeria and Zambia, following the collapse of oil and copper prices.

Appropriate and effective public policy interventions are necessary to transform the structure of most African economies. Ajakaiye and Page (2012) discuss literature contributions advancing arguments for public interventions in four broad areas, namely;

i) Bridging of critical gaps in infrastructure, skills and technology.
ii) Spatial industrial policies in the form of well-functioning special economic zones – mostly to counter the challenges around poor and unfriendly business environments

[8] Typically retailing imported wares from China on street pavements in urban areas.

iii) Attraction of foreign direct investment (FDI) for capital formation and knowledge acquisition
iv) Fiscal incentives that are well thought out, rigorously applied and time bound

Cimoli et. al, (2008) discuss the importance of 'capabilities accumulation' with regards to industrial development arguing the importance of national systems of innovation and technological learning that are sustainably accumulative. Citing Freeman (2008) they go on to elucidate that innovation and knowledge acquisition are not sufficient enough conditions in and of themselves but need to be juxtaposed against five sub-domains governing;

i) the generation of *scientific knowledge*
ii) the development, improvement, adoption of *new techniques of production*
iii) the *economic machine* which organises the production and distribution of goods, services and incomes, and together, *information flows and patterns of incentive* amongst economic agents;
iv) the *political and legal structure;*
v) the *cultural domain*, shaping values, norms and customs

The observations of Cimoli et. al, point to a long road ahead for industrialisation across Africa that goes beyond the narrow sectoral focus of enhancing manufacturing capabilities. Rather an overhaul to the process of developing and sustaining capabilities is necessary especially in the domains of scientific knowledge and innovation. However, in a globalised trade environment structural transformation should go hand in hand with measures seeking integration into global value chains for industries where it is imperative to do so such as the auto sector (Gereffi & Sturgeon, 2013). For industries where global integration is less of a necessity, effective regional integration measures are necessary to achieve critical scale.

2.5 The automotive industry in Africa

When examining the automotive industry in Africa, it is useful to do so from two vantage points, namely;

i) Productive capacity
ii) Trade in automotive products

At first glance, there appears to be a dichotomy as productive capacity does not appear to be moving in tandem with automotive trade across the continent.

Productive capacity remains small across the continent vis-à-vis growing volumes of automotive trade. This is illustrated by statistics from 2013, the most recent year where statistics suitable for an indicative

comparison are available[9]. Global production statistics published by the International Organisation of Motor Vehicle Manufacturers, known by its French acronym OICA (Organisation Internationale des Constructeurs d'Automobiles), reveal the number of automobiles manufactured in Africa accounted for less than 1% of global production in 2013 or just under 650,000 units. This is juxtaposed against a net automotive trade deficit across SSA[10] of USD 16.3 billion (Black & McLennan, 2016). It is also important to note that imports comprise mostly used vehicles from western markets. Due to low per capita incomes and the absence of consumer vehicle finance in many countries in SSA, automobile purchases are often self-financed placing affordability above other considerations[11]. With the average SSA per capita income standing at USD 1,588[12] (World Bank, 2016), most consumers find the purchase of brand new vehicles beyond reach. Imported used cars therefore provide an affordable alternative at a fraction of the cost. For example, a consumer in Kenya can purchase a used passenger vehicle from Japan for USD 5,500 (Deloitte, 2016) which is approximately 4 times the average per capita Kenyan income of USD 1,340 (World Bank, 2016). The cost of a similar but brand new vehicle is likely to be more than 20 times annual per capita income or higher.

The few automotive exports from the continent originate from subsidiaries of global automakers of western or eastern origin i.e. European, American and Asian brands. The continent's leading exporters, South Africa and Morocco, export a significant share of output to markets in Europe and North America while vying for domestic market share against imports. Levels of intracontinental automotive trade are low in comparison to other regions but growing. For instance, in 2016 exports to African countries accounted for 18.3% of South Africa's total automotive exports while exports to the European Union accounted for 50.3% (AIEC, 2017). This scenario points to the potential for market entry of producers of low-cost vehicles to meet the continent's automotive demand that is nonetheless undermined by limited purchasing power. A number of other constraints exist such as a paucity of technological capabilities as well as limited human resource skills compounding the challenges of developing continental-wide or regional automotive clusters. Limited auto component production further hinders

[9] In the absence of a central repository capturing details of all aspects of the Continent's automotive trade, reliance is placed on several sources most of which rely on self-declaration of production statistics and trade flows from the continent's fifty-four nations.

[10] The automotive trade deficit refers exclusively to sub-Saharan Africa i.e. excluding North Africa, while the production statistics published by OICA include North Africa. The only exporter of motor vehicles in sub-Saharan Africa is South Africa. In North Africa, the leading exporter is Morocco.

[11] South Africa is the exception within SSA where local automotive production meets a significant proportion of local demand and comprehensive consumer vehicle finance is available.

[12] In 2015

development of supply chains and non-tariff barriers, particularly underdeveloped infrastructure, pose long-term challenges. With this in mind, a closer look at the few countries involved in automobile production is necessary to gain an understanding of the continental automotive landscape.

2.5.1 Production

In 2016, just under 95 million motor vehicles were manufactured globally with Africa's contribution at just over 1 million units, slightly above 1% of global production (OICA, 2016). Africa's miniscule contribution originated from a handful of countries (Table 2.2). This is noteworthy considering the continent comprises 54 countries with an estimated population of 1.2 billion (World Bank, 2016), but has the lowest motorisation rate globally estimated at 44 vehicles per 1,000 people (Deloitte, 2016). This compares to the global average of 180 vehicles/ 1,000 with other developing regions faring much better than Africa. For instance, the motorisation rate for the Middle East and developing Asia is estimated at 79, while Latin America's is estimated at 176 vehicles per 1,000.

Also noteworthy are the widely varied output levels among African automotive producers with South Africa commanding the lion's share at 58% of total production in 2016, having declined from an even larger share of 63% the year prior.

Table 2.2: Motor Vehicle Production in Africa (units)

	2015	% of Total	**2016**	% of Total	% Change
South Africa	616 082	63%	599 004	58%	-3%
Morocco	288 337	30%	345 106	33%	20%
Egypt	36 000	4%	36 230	4%	1%
Algeria	19 346	2%	42 008	4%	117%
Kenya	10,181	1%	6,577	1%	-35%
Nigeria	3,600*	0.4%	4 000*	0.4	11%
	973 122	100%	1 032 925	100%	

Sources: OICA correspondents survey (2016), SA Automotive Export Manual (2017), PwC Nigeria (2016-17), Deloitte Africa (2017), Kenya National Bureau of Statistics (2017)
* Nigeria's production figures are estimates based on industry interviews conducted by PwC Nigeria.

The African automotive market is not homogeneous just as are the 54 countries on the continent. It is thus important to examine the attributes underpinning the auto sectors in each of the producer nations.

2.5.2 South Africa

In many respects, South Africa is an outlier when it comes to motor vehicle production on the continent given the lengthy history of the country's automotive industry. The industry in South Africa dates back to the 1920s with the assembly of the first car in Africa – Ford's Model T (SA Dept. of Trade & Industry, 2015) heralding the start of the industry. Despite proximity challenges and a small internal market by global standards, the industry has grown over the decades to become a key manufacturing sector in the South African economy making an estimated cumulative contribution of 7.4% of GDP[13] in 2016, comprising 4.7% from automotive manufacturing and 2.7% from associated retail trade, according to industry figures published by the Automotive Industry Export Council (2017). The proximity challenges stem from the long distance exports have to travel to reach the sector's main export markets in Europe, North America and Asia. Paradoxically the export market nearest to South Africa i.e. sub-Saharan Africa continues to have inherent market access barriers. These include poor infrastructure, weak but growing consumer purchasing power, and an influx of cheap imports of used vehicles from Europe and Asia.

According to the South African Automotive Industry Export Council (AIEC) no less than seven major global automakers have production facilities in South Africa[14]. These are; BMW, Ford, General Motors, Mercedes Benz, Nissan, Toyota and Volkswagen. Additionally, a robust supply chain exists comprising over 120 tier one suppliers. These include global players such as Yazaki, Sumitomo and Bosch among other major auto component manufacturers. The number of tier two and three suppliers, mostly local firms, numbers well over 200 according to the Department of Trade & Industry (2015). Given its breadth and depth, the South African auto sector stands out amongst the few across the continent, which are still in varying stages of early development.

Table 2.3: Selected Performance Indicators for the South African Auto Sector

	2015	2016
Broader industry contribution to GDP*	7.5%	7.4%
Share of manufacturing output	33.5%	33.0%
Average monthly employment by automakers	31 260	30 953
Average employment by Component manufacturers	82 100	82 000
Number of vehicles produced	616 082	599 004

[13] South Africa's GDP was estimated to be worth USD 314 billion in 2015 (OECD, 2016). South Africa's economy is considered one of the top three largest economies on the African continent.
[14] As of 2016.

Number of vehicles exported	333 847	344 859
Exports as % of production	54%	58%
Automotive export value as % of SA total exports	14.6%	15.6%
Top export market in value terms	EU	EU

1. * the contribution to GDP is made up of contributions from manufacturing as well as associated retail trade

Sources: AIEC (2016), NAAMSA (2016), NAACAM (2016), OICA (2016)

The automotive sector is a major employer in South Africa employing well over 100,000 workers, with auto component firms providing over 72% of employment (AIEC, 2017). Growth and sustainability of the industry over the decades has in large part been a result of supportive national and sub-national initiatives. Successive programmes have been set in motion that offer a mix of tariff incentives, fiscal grants and tax rebates all aimed at supporting and boosting production capabilities along the entire value chain. At present the Automotive Production and Development Programme (APDP) is the flagship national programme while at the provincial level a number of programmes that address vicinity-specific needs are in place (AIEC, 2016). In addition, further support is available from industry associations of which the major ones are the National Association of Automobile Manufacturers of South Africa (NAAMSA) and the National Automotive Component and Allied Manufacturers (NAACAM).

While still a relatively small player on the global automotive stage and notwithstanding the significant government support, the automotive industry can be viewed as an overall positive contributor to the South African economy. Prospects for further growth of exports could materialise in the medium to long term should the economic performance of countries in SSA improve. A key consideration for African countries seeking to develop a national industry, such as Kenya, is whether to seek integration with the established South African auto sector or try go it alone. The discussion on the Kenyan auto sector ahead will explore the viability of this option in light of recent developments within the local industry.

2.5.3 Morocco

Morocco is the second largest producer of automobiles in Africa. The country's flagship production facility is the Renault majority-owned plant in the northwestern port city of Tangier. The plant commenced production in 2012 following an investment of EUR 1.0 billion (Saleh, 2016). The plant started with an annual production capacity of 170,000 vehicles from one assembly line producing two models namely; Logan, a sedan sized hatchback and Dokker, a light panel van. In 2015, the plant produced 229,000 cars, a 32% increase from the prior year's output (Saleh, 2016) with the bulk of production destined for three markets in Europe; Spain, France and Germany.

Introduction of a second assembly line is expected to boost production to 400,000 vehicles a year positioning it as the largest plant on the continent. The factory had a workforce of 5,086 employees as of December 2014 (Renault, 2014), with an estimated 30,000 indirect jobs created according to the Moroccan Association for Automotive Industry and Trade (2013).

Given Morocco's geographic proximity to Europe by sea, the automotive space occupied by the auto sector has the hallmark features of an integrated peripheral market serving export markets mainly in the Europe Union and to a lesser extent its own domestic market. The free trade agreement with the European Union, in place since 2000[15], has been a key component of the sector's development and viability. The sector's export strategy has the strong support of the Moroccan government enjoying a raft of incentives which, in addition to low labour costs[16], make Morocco an attractive investment destination for European automakers. Among incentives available for industrial focused FDI of which the automotive sector[17] is a primary target, are;

- Exemption from income tax for the first 5-years i.e. 0%, followed by a rate of 8.75% for the next 25-years
- Zero-rated Value Added Tax on imports of capital equipment and manufacturing inputs
- Zero-rated Value Added Tax on exports
- No withholding taxes on dividends
- Limited financial support towards professional building costs and equipment costs for investors operating in designated Special Economic Zones. This support is capped at EUR 1.8 million or 10% of the total project cost.

The Moroccan automotive sector is considered progressively successful with exports of automotive products earning USD 2.74 billion in 2013 or approximately 10% of overall exports (Maturana et al, 2015). Of significance is the rapidly developing domestic supply chain comprising international and local manufacturers of components. Locally produced components make up to 43% of inputs used in the production process, and include plastics, electronic components and fabricated metal parts (Maturana et

[15] The EU is Morocco's biggest trading partner and as of 2015 accounted for 56% of Morocco's international trade and 61% of her exports. During the 10-yr period 2006-2016 Morocco enjoyed annual trade surpluses over the EU of a cumulative value of EUR 66 billion (European Commission, 2017).

[16] Employees working in Moroccan auto plants earn as little as a third of the wages of their counterparts working in European auto plants.

[17] This includes automobile and component manufacturers (Moroccan Association for Automotive Industry and Trade, 2013)

al, 2015). Local parts producers are also increasingly targeting export markets in Europe and markets as far afield as South America.

In summary, the Moroccan auto sector's integrated peripheral market positioning which has enabled value chain integration with the EU automotive sector is vital to its sustainability. While the domestic market is relatively large compared to markets found elsewhere on the African continent, close geographical integration with EU automotive value chains is the key ingredient for future growth of the sector. Our case study country, Kenya, clearly lacks this essential attribute.

2.5.4 Egypt

Egypt's automotive sector as it stands today emerged on the basis of import substitution industrialisation policies (ISI) dating back to the 1960's. During this period automotive assembly was monopolised by the state run El Nasr Automotive Manufacturing Company and was targeted to cater solely for the domestic market (Haddad et. el, 2015). A change of government and political ideology in the late 1970's led to liberalisation of the economy. This brought with it involvement of the private sector, which in the automotive sector resulted in production agency agreements and joint venture arrangements with major multinational automakers. The industry developed over the years to encompass 15 assembly plants and 75 firms within the supply chain providing components and services to the assembly plants with an overall industry capacity to 300,000 units[18] annually (Oxford Business Group, 2016). Despite the seeming progress made over the years, Egypt's automotive industry has faced headwinds in recent times following a) the revolution of 2011 that marked the commencement of the 'Arab Spring' and b) increased pressure from foreign imports due to decreasing tariff protection measures following the establishment of a free trade agreement with the EU in 2004[19].

The loss of trade protection has seen a gradual decline in import duties on fully built units with complete tariff elimination due by 2019. This has progressively made imported vehicles, from an OEM and distributorship standpoint, relatively cheaper to deliver to the market than to undertake local assembly. The near term prognosis for Egypt's auto sector remains uncertain notwithstanding increased lobbying by politically connected stakeholders to raise non-tariff barriers on imports as a way of propping up the local industry (Haddad et. el, 2015). Without integration into a regional value chain within the MENA

[18] Cars and buses

[19] Referred to as the 'Association Agreement', the EU-Egypt free trade agreement removed or decreased tariffs on industrial products and made agricultural products easier to trade.

region, the sector may increase its reliance on trade protection for survival, which demonstrates the challenges for national auto sectors that lack access to a viable automotive space.

2.5.5 Algeria

With a per capita income of USD 4,794 per annum, Algeria is considered the second-largest market for automobiles in Africa, after South Africa. Total sales reached a peak in 2013 estimated at 425,000 units (Belalloufi, 2017) most of which were imports of new cars. Following the peak, estimates indicate a reduction in domestic demand due to significant declines in oil and gas revenues, which constitute 95% of Algeria's exports. This has been coupled with government measures to curb imports across the board by progressively reducing the issuance of import licenses.

Despite having one of the larger markets on the continent, Algeria is relatively new to automobile production. Renault, which is the market leader with an estimated market share of 25% (Renault, 2014), opened an assembly and manufacturing plant, Renault Algérie Production (RAP), in November 2014 in the Oran region. According to Renault an investment of Euro 50 million was deployed to set up the plant which in a joint venture (JV) with two local partners. This investment, which is relatively small by international standards, will entail an initial production outturn of 25,000 vehicles per annum that will be scaled up to 75,000 units by 2019.

Other automakers have shown interest in the market. They include, China's Anhui Jianghuai Automobile Company (JAC Motors) who have announced plans to establish a light-duty truck assembly plant (JAC signs deal to open…, 2016) at a cost USD 128 million. Initial production is set at 10,000 units per year. The Volkswagen (VW) Group has also declared intentions to set up a passenger vehicle assembly plant via a USD 170 million joint venture investment with the local VW distributor (Reuters, 2016).

The long-term viability of the fledgling Algerian automotive industry is difficult to assess at this stage notwithstanding the recent investments by Renault, and upcoming ones by JAC Motors and VW. The question arises whether what was once a lucrative automotive market for imports will experience a return to the demand levels prevalent during the era of higher oil prices. This considered, Algeria's proximity to Morocco where the automotive industry is more established could potentially present opportunities for an integrated regional value chain, producing vehicles and auto components for the respective domestic markets, and the nearby European export markets.

2.5.6 Nigeria

Although a marginal producer by continental standards, the Nigerian auto sector deserves mention mostly for what could be achieved rather than what has been achieved. To start with, the Nigerian economy is the largest on the continent [20] with GDP estimated at USD 405 billion in 2016 (World Bank, 2017). Nigeria is also the most populous nation on the continent with an estimated population of 183 million (OECD, 2016). The Nigerian economy however is heavily dependent on oil and gas, which jointly account for 35% of GDP and over 90% of exports.

Total motor vehicle sales were estimated at over 400,000 units in 2015 (PwC, 2016) with a ratio of 3:1 between imported used vehicles and brand new vehicle sales. Furthermore, of the new vehicle sales only 30% are purchased by the non-corporate segment i.e. individuals purchasing for private use. This is due to the very high import tariffs imposed on importation of fully built units totalling 75% of the initial purchase price. The country's overall motor vehicle fleet is estimated at between 10 - 14 million units (Deloitte, 2016 and PwC, 2016), with at least 50% of the fleet aged over 12-years according to analysis by PwC. Despite minimal domestic production, the magnitude of Nigeria's demographics indicate potential for a domestic automotive industry. However, this would have to start with production of low-cost vehicles due to small per capita incomes, estimated at USD 2,646 in 2016 (World Bank, 2017).

The government has taken steps to relaunch[21] vehicle assembly in Nigeria with the development of the New Automotive Industry Development Plan (NAIDP), launched in 2014. The NAIDP has seen a number of tariff concessions introduced to encourage local assembly while increases in import tariffs have been imposed on fully built units[22]. Response to the NAIDP appears ambivalent with the licensing of up to 35 assembly companies in a relatively short period. This proliferation may indicate new entrants are simply pursuing licenses as a way of circumventing higher import duties on fully built units. Holders of assembly licenses are permitted a prescribed number of FBU imports at a preferential tariff as long as

[20] A rebasing in 2015 of GDP catapulted Nigeria to the top spot surpassing South Africa, which had long held the position of the largest economy in Africa. However, a collapse in the global prices of oil which is Nigeria's leading export, contributing over 95% of export revenue and making up 35% of GDP, has resulted in recession, a severe foreign exchange shortfall and contraction of the economy.

[21] Nigeria has previously engaged in assembly of motor vehicles with major OEM's such as Volkswagen and Peugeot having established plants over 4 decades ago in the 1970's. However, most of these plants have since ceased operations or are operating grossly under capacity due to the myriad economic challenges faced by the country in the interim period.

[22] Import tariffs on fully built units (used or brand new) are 75%, while for semi-knocked down kits (SKD) and completely knocked down kits (CKD) the rates are 10% and 0% respectively.

they commit to meet set assembly targets. Effective monitoring, and enforcement, of this condition may prove cumbersome and therefore not bring about the intended developmental outcomes.

Further assessment of the industry's performance in the wake of the NAIDP has been stifled by Nigeria's on-going economic recession brought about by the collapse in oil prices over the past three years. This has led to severe foreign exchange shortages (Reuters, 2017), making it difficult for assemblers and component manufacturers to import much needed kits and parts. It thus remains unclear whether the Nigerian automotive sector is likely to attain viability in the short-term. However, assuming stabilisation of the economy in the medium-long term, followed by modest and steady economic growth, the sheer size of the market could provide economic justification for continued development of a domestic automotive sector. This would have to be underpinned by the right mix of industrial and trade policies to ensure meaningful upgrading takes place. In this regard, the prospects for a viable automotive space appear more likely in Nigeria compared to the small national and regional markets in Kenya and East Africa.

3.0 THE AUTOMOTIVE SECTOR IN KENYA

This section will delve into the state of the automotive sector in Kenya. The discussion will assess the viability of the sector in light of its perpetual infant industry characteristics. The emerging motorcycle sub-sector will also be examined with a discussion on whether it exhibits prospects for faster development vis-à-vis the more technologically demanding automobile sector. To begin with, an assessment of industrialisation in Kenya is presented, alongside a discussion of recent economic performance.

3.1 Overview of economic performance and industrialization in Kenya

Kenya has had a longer history of industrial development relative to her regional neighbours alongside favourable industrial and trade policies (Kimenyi & Kibe, 2014). In 2015 GDP per capita was US$1,434 with overall GDP estimated at US$ 63.40 billion (World Bank, 2016) placing the Kenyan economy as the largest within the EAC regional bloc. Kenya's economic output constitutes 44% of the region's combined GDP of US$ 144.32 billion (Table 3.0).

Table 3.0: Estimates of GDP and Population size for the East African Community – 2015

Country	US$ (billion)	% of Regional	Population Size (million)	% of Regional	US$ Per Capita
Kenya	**63.40**	**44**	**44.20**	**29**	**1,434**
Tanzania	45.63	32	47.68	31	957
Uganda	24.31	17	39.89	26	609
Rwanda	8.11	6	11.30	7	718
Burundi	2.87	2	9.42	6	304
	144.32*	100	152.49*	100	946**

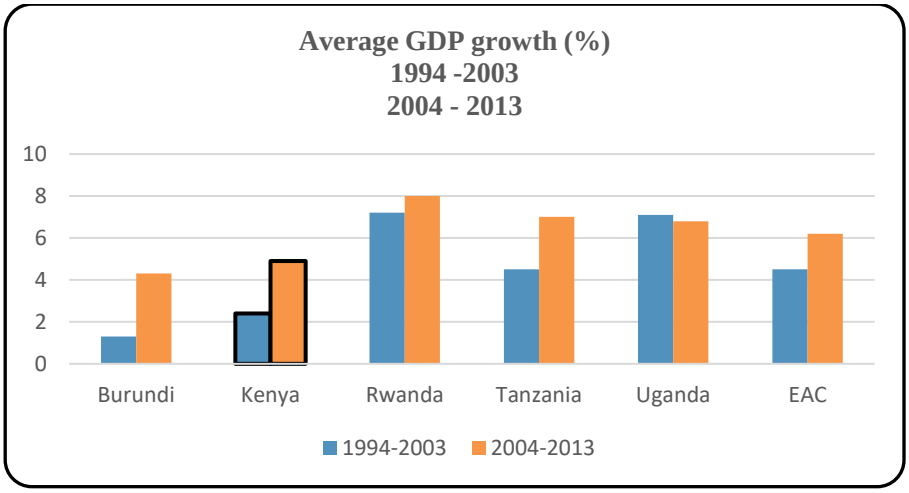
Source: International Monetary Fund, World Economic Outlook Database, 2016
*Total **weighted average

Attributes ascribed to Kenya's regional economic leadership include, good financial infrastructure comprising a relatively stable banking system and the most advanced money and capital markets within the region (Kimenyi & Kibe, 2014). A skilled human resource base and good institutional regulatory frameworks (Chege, et al. 2014) serve to cement to the country's leading economic role within the region.

Lastly, the country's economic performance has also benefitted from relative political stability[23] in a region that has had its fair share of civil unrest and political upheaval.

Notwithstanding her leading role vis-à-vis regional peers, the growth rate of the Kenyan economy has been underwhelming over the past two decades. This is evident from figure 3.1, which shows the pace of GDP growth has been below the EAC average, and only surpasses Burundi, whose economy is 22 times smaller and continues to be hamstrung by political discordance.

Figure 3.1: East African Community average GDP growth rate



Source: World Economic Outlook, International Monetary Fund, World Economic Outlook Database, 2016
Notes: For Burundi, the growth series starts in 1997, while for Rwanda the series starts in 1998 to adjust for pre and post conflict oversized contraction and expansion.

The slow pace of economic growth has hampered faster development of Kenya's manufacturing sector. This is evident when using the United Nations Industrial Development Organisations' (UNIDO) competitive industrial performance (CIP) index[24] to assess her manufacturing capabilities. The CIP index places Kenya 113th globally; ahead of regional peers but significantly behind several emerging and industrialising economies (Tables 3.1 and 3.2). Between 2008 and 2013, only one CIP indicator measuring the manufacturing sector's performance registered an increase, albeit a modest one.

[23] The major aberration being the post-election violence that erupted after the disputed 2007 presidential poll.

[24] The CIP index sets out to determine the long-run sustainable growth of a country's manufacturing industry (UNIDO, 2015). It assesses manufacturing development and industrial competitiveness over time by looking at *"the capacity of countries to increase their presence in international and domestic markets while developing industrial sectors and activities with higher value added and higher technological levels"* (UNIDO, 2015). Essentially, the CIP index measures how countries have upgraded technological capabilities, expanded production capacity, improved infrastructure and adopted suitable policies to improve manufacturing value added over time.

Manufacturing value added (MVA) per capita increased marginally by 3% but this contrasts with decreases in the share of MVA in GDP and manufactured exports per capita, both of which fell by 9%. This is worrisome for Kenya's industrialisation prospects and indeed, development of the auto sector. Government authorities have acknowledged the evident lack of growth in the country's small industrial base. An example of this is contained in Kenya's Industrial Transformation Programme (KITP), issued by the Ministry of Industrialization and Enterprise Development (GoK, 2015). It states; *"the manufacturing sector experienced no growth over the period 2005-15 remaining stagnant at 11% of GDP"*.

Table 3.1: Manufacturing Value Added (MVA) and industrial competitiveness among EAC countries

Country	MVA per capita (constant 2005 US$)			Share of MVA in GDP (%)			Manufactured exports per capita (2013 US$)			CIP Ranking 2013
	2008	2013	change	2008	2013	change	2008	2013	change	
Kenya	**59**	**61**	**3%**	**11**	**10**	**-9%**	**59**	**58**	**-9%**	**113**
Tanzania	34	43	25%	8	9	13%	31	33	13%	121
Uganda	24	27	13%	7	7	0%	15	17	0%	129
Rwanda	21	22	3%	7	6	-14%	11	27	-14%	136
Burundi	16	13	-18%	10	8	-20%	3	4	-20%	140

Source: United Nations Industrial Development Organization, 2015
CIP = Competitive Industrial Performance

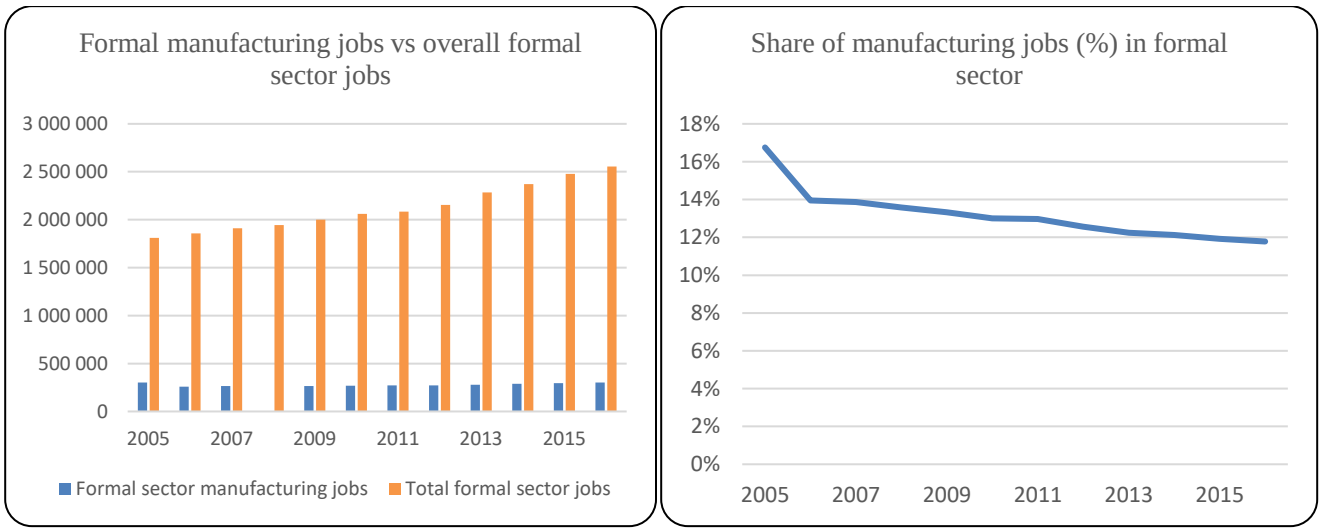
Table 3.2: Manufacturing Value Added (MVA) and industrial competitiveness amongst selected emerging and developing economies

Country	MVA per capita (constant 2005 US$)			Share of MVA in GDP (%)			Manufactured exports per capita (2013 US$)			CIP Ranking 2013
	2008	2013	*change*	2008	2013	*change*	2008	2013	*change*	
Malaysia	1617	1717	*6%*	26	25	*-4%*	5148	6202	*20%*	24
Thailand	1080	1168	*8%*	36	34	*-6%*	2253	2999	*33%*	26
Mauritius	982	1066	*8%*	16	15	*-6%*	1583	1469	*-7%*	82
S. Africa	932	894	*-4%*	16	15	*-6%*	1017	1209	*19%*	41
China	788	1143	*45%*	33	33	*0%*	1020	1540	*51%*	5
Indonesia	380	451	*19%*	26	25	*-4%*	354	439	*24*	42
Egypt	233	242	*-4%*	16	15	*-6%*	213	228	*7%*	71
Vietnam	174	236	*36%*	22	23	*5%*	423.1	1129	*167%*	50
Bangladesh	84	118	*40%*	17	19	*12%*	99	152	*53%*	77
Kenya	**59**	**61**	***3%***	**11**	**10**	***-9%***	**59**	**58**	***-9%***	**113**

Source: United Nations Industrial Development Organization, 2015
CIP = Competitive Industrial Performance

More poignantly, Were et al. (2017) observe that the share of manufacturing in gross domestic product was the same in 2015 as it was half a century ago in 1965 and declined to a low of 9.2% in the five years to 2016. This has had a negative impact on employment creation and has seen the share of formal sector manufacturing jobs follow a downward trend over the ten-year period 2005 – 2015, declining from 17% to 12% of total formal sector jobs. These trends are illustrated in the two charts in figure 3.2.

Figure 3.2: Employment trends in the formal manufacturing sector



Source: Adapted from the 2016 Economic Survey published by the Kenya National Bureau of Statistics (KNBS)

The formal sector in Kenya is relatively small in comparison to the informal sector that provides over 80% of national employment. Table 3.3 highlights this and shows that despite an increase in the absolute number of formal sector jobs between 2005 - 2015, from 1.8 million to just under 2.5 million jobs, the informal sector expanded at a faster pace to constitute 84% of total employment in 2015 versus the formal sector's 16%.

Table 3.3: Formal sector employment vs informal sector employment

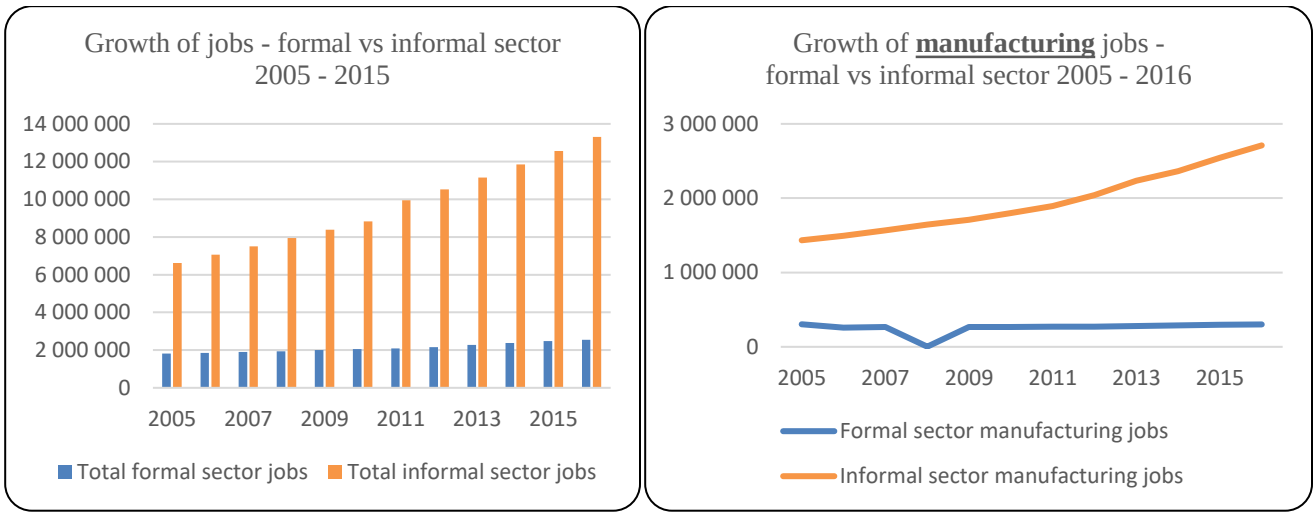
	2005	2006	2010	2011	2014	2015
Formal sector jobs	1 811 600	1 857 600	2 060 400	2 084 100	2 370 200	2 478 000
Informal sector jobs	6 626 600	7 068 600	8 829 800	9 948 300	11 846 000	12 562 500
Total jobs	**8 438 200**	**8 926 200**	**10 890 200**	**12 032 400**	**14 216 200**	**15 040 500**
Formal sector jobs (%)	21%	21%	19%	17%	17%	16%

Informal sector jobs (%)	79%	79%	81%	83%	83%	84%

Source: Extracted from annual economic surveys (2005 – 2016) published by the Kenya National Bureau of Statistics (KNBS)

Taking cognisance of the informal sector's dominant role in the economy, a closer look at informal sector manufacturing is warranted. Official statistics show a rapid expansion of informal sector manufacturing vis-à-vis stagnation of formal sector manufacturing.

Figure 3.3: Employment trends formal vs informal sector 2005 – 2015



Source: Compiled from statistics published in annual economic surveys (2005 – 2016), Kenya National Bureau of Statistics (KNBS)

The informal manufacturing sector which is referred to locally as *Jua Kali*, a Swahili term meaning 'hot sun' in reference to its outdoor work places, is considered innovative and resilient given the operating constraints most enterprises in the sector face (Daniels, 2010). Figure 3.3 provides some insight into the sector's resilience showing that the sector weathered the brunt of the global financial crisis and also emerged relatively unscathed from the post-election violence[25] that plagued the country in early 2008. Constraints affecting informal sector manufacturing include; a lack of access to affordable bank credit, unavailability of formal skills training programmes and a lack of business support platforms (Daniels, 2010). The sector engages mostly in small-scale manufacture of furniture and fabrication of assorted metal products including basic farm implements, and simple spare parts for the auto sector. Artisans who work in the sector are typically self-trained or have undergone an apprenticeship within their place of

[25] Kenya suffered nationwide politically induced violence in early 2008 following a disputed presidential poll in December 2007. This resulted in an impasse that lasted several months, claiming the lives of over 1,000 people. The impact to the economy was severe.

work. Informal manufacturing is estimated to account for over a third of the 6.7 million informal sector jobs in 2015 (KNBS, 2016).

Productivity in the informal sector is well below that of the formal sector, but for certain categories of goods, Kenya's informal sector produces goods that are highly price competitive. Were (2016a) highlights these as basic gardening and farming implements, and basic auto components such as exhaust pipes. Quality considerations are often overlooked by consumers who seek a trade-off between affordability versus durability.

The dynamism exhibited by informal manufacturing in Kenya adds credence to the argument presented by McMillan (2014) on where to focus when assessing the apparent lack of progression in manufacturing in SSA. McMillan argues that most analyses focuses on formal sector manufacturing that as per Kenya's example is either stagnant of declining. Instead, focus ought to be placed on manufacturing activity in the informal sector, which in Kenya's instance generated close to 1.3 million new jobs between 1990-2007 (McMillan, KNBS 2014). Stronger linkages between informal sector manufacturing and formal sector manufacturing have been proposed as one of the channels towards upgrading productivity and increasing the share of overall output from manufacturing in SSA.

The question as it pertains to the automotive sector in Kenya is whether there exists a need to direct resources towards the lesser complex parts of the sector which are more suited to informal manufacturing such as fabrication of basic components. Skills and capabilities could then be upgraded progressively over time. Indeed, the literature on global automotive value chains highlights the importance of specialisation as an important step towards value chain integration.

3.2 Automobile assembly in Kenya

Commercial assembly of motor vehicles in Kenya commenced in earnest in the mid 1970's (Murage, 1983). In a relatively short span of time, five assembly plants were launched in line with government policies encouraging import substitution industrialisation (ISI). Indeed, the government held significant stakes in three of the five plants, alongside western joint venture partners (Table 3.4).

Table 3.4: Vehicle Assembly Plants in Kenya Past (1982) and Present (2017)

Previous Name	Current Name	Govt. Stake	Location of plant	Marques assembled 1982	Marques assembled 2017	Installed capacity 1982	Installed capacity 2017
General Motors Kenya	General Motors East Africa	Yes 1982 - 51% 2017 - 20%	Nairobi	1) Isuzu trucks 2) Isuzu pickups 3) Bedford trucks	1) Isuzu trucks 2) Isuzu minibus	4 680	16 000
Associated Vehicle Assemblers	Associated Vehicle Assemblers	Yes 1982 - 51% 2017 - 0%	Mombasa	1) Datsun pickups 2) Nissan minibus 3) Mercedes trucks 4) Toyota pickups 5) Hino trucks 6) Mazda pickups 7) Ford trucks 8) Peugeot pickups 9) Daihatsu pickups	1) Toyota pickups 2) Fuso trucks 3) Hino trucks 4) Tata trucks 5) Tata buses 6) Scania trucks 7) Scania buses 8) Mitsubishi trucks	11 180	10 000
Leyland Kenya Ltd	Kenya Vehicle Manufacturers	Yes 1982 - 35% 2017 - 35%	Thika	1) Leyland buses 2) Leyland trucks 3) Land rovers 4) Nissan trucks 5) Nissan buses 6) VW Microbus 7) Mitsubishi pickups 8) Fuso trucks 9) Suzuki vans	1) VW hatchback 2) Bus bodies 3) Mobius SUV	4 200	6 600
Fiat Kenya Ltd	*Defunct*	Unknown	*Defunct (previously Nairobi)*	1) Fiat Trucks	*Defunct*	1 000	*Defunct*
Ziba Management and Services	*Defunct*	No	*Defunct (previously Nairobi)*	1) Mack trucks	*Defunct*	120	*Defunct*
						21 180	32 600

Source: Company websites, Murage (1983), Okatch, Mukulu & Oyugi (2011)
Associated Vehicle Assemblers and Kenya Vehicle Manufacturers have operated as contract assemblers since inception, while General Motors East Africa has only produced Isuzu vehicles since inception.

Despite the rather promising start, the industry's fortunes over the decades have been mixed with the industry seemingly unable to move beyond first gear. Two of the five plants ceased operations in the 1980's. The three plants still in operation grapple with capacity underutilisation of approximately 30% on average. It is also interesting to note that as of 1982 a proliferation of marques and models were

assembled by the various plants, mostly through contract assembly arrangements (Murage, 1983). Government policies at the time seemed to encourage this proliferation via a mixture of tariff concessions for imported assembly kits, high tariffs for importation of fully built units and priority foreign exchange allocations for the assembly sector during a period of foreign exchange control (Okatch et al., 2011).

A significant amount of rationalisation has occurred over the decades within the three assembly plants still in operation. This is evident in the reduced number of marques and models assembled. Nonetheless, capacity underutilisation across all three plants remains cause for concern. Another shortcoming is the lack of proximity of the plants to each other (Table 3.5) which is unlikely to encourage the development of auto component manufacturing clusters, especially given the small size of the market. The lack of a substantive components supplier base presents a continuing challenge for achievement of the government set local content threshold of 30%. The threshold is attached to the tariff concessions available to assemblers on importation of SKD kits (see Table 3.6). However, the local content rule is often challenged by assemblers who make a case for inclusion of the contribution of local labour in assessing compliance. This indicates the threshold is unlikely to be met solely from locally sourced components, especially considering that monitoring compliance appears weak.

Table 3.5: Proximity among vehicle assembly plants and to the main seaport

Plant	Location of Plant	Distance to AVA	Distance to GMEA	Distance to KVM	Proximity to Mombasa port
GMEA	Nairobi	441km	-	40km	474km
AVA	Mombasa	-	441km	521km	7km
KVM	Thika	521km	40km	-	524km

Source: Respective company websites, Deloitte Africa (2016), KMI
* as of 2015

Table 3.6: Import tariff rates applicable on FBU vs SKD imports

Tariff	Rate	FBU (imported)	SKD Kits	FBU** (assembled)
Import duty	25% of customs value*	✓	nil	nil
Excise duty	20% of (customs value + import duty)	✓	nil	nil
Value added tax	16% of (customs value + import duty +excise duty)	✓	nil	✓
Import declaration fee	2% of customs value	✓	✓	nil
Railway development levy	1.5% of customs value	✓	✓	nil

Source: Kenya Revenue Authority website – www.kra.go.ke, Deloitte Africa (2016)

* customs value = current retail selling price (CRSP) less depreciation based on age of vehicle. The CRSP is determined by Kenya Revenue Authority (KRA) and published on the KRA website at the start of the government fiscal year on 1st July
** Value added tax (VAT) on locally assembled FBU's is levied on the ex-factory price.

Following the brief history of the sector, we now turn to the present. The total automobile fleet in Kenya was estimated at 1.3 million units in 2014 (Deloitte Africa, 2016). The national fleet has grown rapidly in recent years according to statistics published by the Kenya National Bureau of Statistics (KNBS), which reveal 445,099 new motor vehicle registrations[26] during the 5-year period 2011-15 (Table 3.7). Although this shows how small the market is by global standards, it still reveals that the entire fleet increased by approximately 30% over a relatively short period. This would bode well for the automobile assembly sector if supply for new registrations came primarily from local assembly plants. However, this is not the case.

Table 3.7: New registrations of motor vehicles in Kenya 2011 – 2015

Type of Vehicle	2011	2012	2013	2014	2015	Totals
Saloon Cars	11 026	12 985	16 343	15 902	14 369	
Station Wagons*	31 199	39 862	48 662	53 542	54 120	
Total Passenger Vehicles	42 225	52 847	65 005	69 444	68 489	298 010
Panel Vans, Pick-ups, etc.	7 442	7 945	9 819	12 568	13 878	
Lorries/ Trucks	5 247	7 821	9 570	10 681	13 785	
Buses and Coaches	1 662	1 638	2 062	2 210	2 342	
Mini Buses	451	78	235	213	581	
Trailers	2 556	3 761	3 973	2 925	3 905	
Total Commercial Vehicles	17 358	21 243	25 659	28 597	34 491	127 348

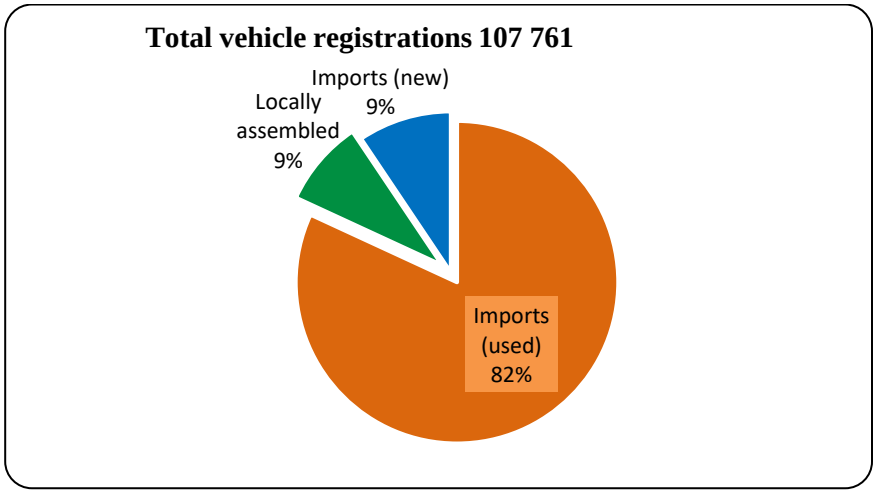
[26] New registrations refer to all first time registrations. Imported used cars count towards new registrations upon entry into Kenya with no distinction made between brand new locally assembled and brand new imported vehicles in registration data.

Wheeled Tractors	1 179	1 386	1 902	2 032	2 259	
Other Vehicles	2 724	1 753	1 451	2 533	2 522	
Total Motor Vehicles	**63 486**	**77 229**	**94 017**	**102 606**	**107 761**	**445 099**
% Passenger Vehicles	67%	68%	69%	68%	64%	**67%**
% Commercial Vehicles	27%	28%	27%	28%	32%	**29%**
% Other	6%	4%	4%	4%	4%	**4%**

Source: Kenya National Bureau of Statistics (2016)
*Station wagons represent hatchbacks as well as SUVs (sport utility vehicles) both of which fall within the passenger vehicles category alongside saloon cars.

According to the automobile sector's main representative body, the Kenya Motor Industry Association (KMI)[27], there were sales of 19,523 new[28] vehicles by local car dealerships in 2015, which was a record high sales year[29]. This falls within the overall number of 107,761 vehicles registered in 2015 (both brand new and imported). Brand new vehicles thus constituted only 18% of new registrations with the remainder, i.e. over 80%, comprising imports of used vehicles. Furthermore, not all sales of brand new vehicles originated from local assembly plants. The local industry supplied only 9,385 vehicles with the balance of 10,138 vehicles (52%) comprising imports sold through authorised OEM distributors. With imports of both used and brand new vehicles making up over 90% of new vehicle registrations in 2015 (figure 3.4), which is in line with the trend of recent years, a scenario emerges where the automobile assembly sector is a marginal player in supplying the local market.

Figure 3.4: Sources of new vehicle registrations in Kenya in 2015



[27] Established in 1989, the KMI is the pre-eminent forum for the automotive industry in Kenya and positions itself as the pivotal link between the industry, government and the public at large.
[28]New here refers to brand new vehicles that were either assembled locally or imported from an Original Equipment Manufacturer (OEM) based overseas.
[29] This compares to just under 10,000 brand new vehicles sold in 2005 indicating that it has taken a decade to double sales in this category.

Source: Authors compilation using data from the 2016 Economic Survey published by the Kenya National Bureau of Statistics (KNBS), Deloitte Africa Automotive Insights (2016).

Furthermore, local assembly plants have performed grossly under capacity over the years (Table 3.8). This could indicate challenges with competitiveness especially against imports (used and new) or could be a reflection of the paucity of attributes necessary for the sector to flourish. As mentioned previously, the automotive industry requires the alignment of several aspects including; skills development, appropriate policies, patient capital, consumer finance and the availability of an automotive space (scale and supply chain).

Table 3.8: Existing auto assembly plants capacity utilisation: 2007 vs 2015

Assembler	Installed capacity 2007	Output 2007	Utilisation 2007	Installed capacity 2015	Output 2015	Utilisation 2015
GMEA	7 000	2 629	38%	16 000	5 347	33%
AVA*				10 000	4 206	42%
KVM	6 600	1 108	17%	6 600	202	3%
	13 600	3 737	27%	32 600	9 717	30%

Source: Company websites, Deloitte Africa (2016), KMI, Okatch, Mukulu & Oyugi (2011)
* The author was unable to locate production and capacity figures for AVA for 2007
GMEA – General Motors East Africa
AVA – Associated Vehicle Assemblers
KVM – Kenya Vehicle Manufacturers

It is also important to note that over 95% of domestic production comprises light commercial vehicles (LCVs) i.e. light-duty trucks[30] and mini-buses[31], with virtually no production of passenger vehicles. This aspect has long dominated the industry as locally assembled commercial vehicles have an edge over imported ones mostly due to price considerations[32]. Production of saloon cars was abandoned by the industry due to high operating costs,[33] alongside the proliferation of imports of 'affordable' used cars. As CIF[34] prices declined over the past two decades, the landed cost of imported used passenger vehicles,

[30] Not exceeding load carrying capacity of 10-tonnes.
[31] Not exceeding passenger carrying capacity of 60 persons.
[32] The price advantage arises due to freight costs, as it is cheaper to ship LCV vehicles in parts (for assembly) than fully built.
[33] Mentioned as electricity tariffs, disproportionally high labour costs for scarce skilled workers, and a host of business environment inefficiencies including expensive credit and several nuisance taxes and levies.
[34] Cost, insurance and freight, which is basically the cost incurred up until the destination port (Mombasa in Kenya). It includes cost of the vehicle in the source market, freight charges to ship the vehicle to Kenya and insurance cover during shipment.

after factoring in payment of import duties and associated customs charges, sunk to as low as USD 5,000 for basic entry-level models. Comparable locally assembled vehicles were on the market for USD 25,000.

Local assembly of commercial vehicles[35] has not been significantly affected by used vehicle imports. Due to their larger size, importation of FBU buses and trucks attracts higher freight charges on a per unit volume basis. This means the 25% import tariff concession differential favours importation of commercial vehicle SKD kits and enables domestic assemblers to deliver a competitively priced product to the market. Additionally, public service commuter vehicles have provided a lifeline to the auto assembly sector over the past couple of decades. The ubiquitously colourful, noisy and aggressively driven *Matatus'*[36], the 25 to 33-seater mini-buses that form the backbone of the urban public transport system, have been a source of steady demand for domestic assemblers. The Matatu industry has also provided steady demand for local firms involved in coach building, body artwork and basic metal fabrication in both the formal and informal sector.

Notwithstanding the relative success assemblers have had with commercial vehicles, policy unpredictability has hampered the pace of growth. For instance, the unexpected introduction of excise duty on domestically assembled vehicles in the 2016 government fiscal year[37] unsettled the industry. This was further exacerbated in the 2017 fiscal year[38] by additional changes involving the transition from a specific excise duty structure to one based on ad valorem rates which further increased the price of domestically assembled vehicles. Hitherto, excise duty was levied only on imported vehicles (both used and new). The introduction of excise duty followed the introduction of value added tax on domestically assembled vehicles in 2013 (Juma, 2016) and thus effectively eliminated the tariff concessions previously available on imported SKD kits. The consequence of the excise duty changes was a 29% drop in sales for the first six-months of 2016 (Juma, 2016) and led to job losses. Realising this adverse impact, the government reversed imposition of excise duty towards the end of 2016. However, the damage was already done and confidence in policy predictability among industry players remains low.

[35] Comprising light to medium sized commercial vehicles
[36] The origins of the name Matatu are rumoured to have originated from the initial fare charged by the mini-buses when they first surfaced on Kenyan roads in the 1970's. The fare was Kshs 3/= on most routes. Three in Swahili is tatu with the ma prefix added to denote 'the' i.e. the 3's.
[37] Commencing 1st July 2015
[38] Commencing 1st July 2016

3.2.1 General Motors East Africa (now Isuzu East Africa)[39]

General Motors East Africa (GMEA) is one of the two assembly plants the author visited during a field trip to Nairobi, Kenya in February 2017. The GMEA plant established in 1975 marked the American automaker, General Motors' (GM), first production presence in the east African region. The plant was initially set up as a joint venture (JV) with the Government of Kenya (GoK) to assemble heavy and light commercial vehicles i.e. trucks, buses and pick-ups (Murage, 1983). Assembly operations commenced in 1977 at a site within the industrial area in Nairobi. At inception, the GoK held a majority 51% stake to GM's 49% (GMEA, 2017). This initial shareholding arrangement points to the import substitution industrialisation (ISI) policies pursued at the time where direct government stakes in major industrial enterprises was viewed as a necessary channel for government support and control (Chege et al., 2014). However, by 1997 GM's shareholding in GMEA had increased to 57.7% while the GoK's shareholding had decreased to 20% an indicator of the abandonment of ISI policies towards the end of the 1980's. Two private sector entities had become shareholders by 1997 namely, Centum[40] – a locally publicly listed investment company and Itochu, a large Japanese trading company and holder of franchise rights for the Isuzu brand, GMEA's main offering.

Table 3.9: GMEA shareholding through the years

	1975	1997	2017
GM*	49,0%	57,7%	nil
GoK	51,0%	20,0%	20,0%
Centum	nil	17,8%	17,8%
Itochu	nil	4,5%	4,5%
Isuzu*	nil	nil	57,7%
	100,0%	100,0%	100,0%

Source: GMEA (2017), The East African (2017) *GM announced in February 2017 plans to sale its entire stake to Isuzu

The GMEA plant has the largest installed capacity in the sector with the ability to produce up to 16,000 vehicles per annum. Notwithstanding this, capacity utilisation remains low, standing at 33% in 2015. This compares to 66% utilisation three decades ago (table 3.10). Production numbers show 2015 as a record year with 5,347 units produced, although busier plants in other markets on the continent such as South Africa and Morocco achieve this output in a matter of weeks. In 2016, another milestone was

[39] General Motors announced plans to sell its entire stake in the GMEA assembly plant to Isuzu Motors in February 2017. This follows a global realignment of GM's strategic focus, which has seen withdrawals from several markets in Asia, Africa and Europe.

[40] Centum is listed on the Nairobi Securities Exchange and holds stakes in a diversified portfolio ranging from banking, fast moving consumer goods, real estate, energy and manufacturing.

marked – total production since inception in 1977 reached 80,000 units. Although these milestones are significant for the plant, they demonstrate how much further the industry still has to go. Assuming fairly even production throughout the plant's forty-year history, the average annual production works out to 2,000 units per annum. In terms of economies of scale, viewpoints by various experts indicate production quantities ranging between 150,000 to 300,000 units per annum as being necessary to achieve minimum efficient scale in vehicle assembly. Black (2007) discusses these viewpoints and finds that while there is no universal consensus, the possibility of achieving success at the lower end of the range, i.e. 150,000 units, is likely if newer production technologies are employed or in the luxury and specialty vehicle segment (where profit margins are likely to be higher). With this in mind, one begins to get a sense of just how far the Kenyan industry has to go, or more poignantly, question whether the industry really has sustainable commercial viability.

Table 3.10: GMEA capacity utilisation and employment 1981 vs 2015

	1981	2015	Change
Annual production Capacity	4 300	16 000	3.72x
Actual production	2 830	5 347	1.89x
Capacity utilisation	66%	33%	(2) x
Employees	358*	454	1.26x

Source: GMEA (2017), Murage (1983). * as of 1982

GMEA operates as both a franchise importer and assembler, holding the franchise rights to GM's Chevrolet brand and the Japanese brand Isuzu (figure 3.5 shows a full list of GMEA's product range). Chevrolet vehicles are imported fully built and constitute a minor share of GMEA's overall sales. The majority of GMEA's sales, over 90%, are commercial vehicles under the Isuzu brand, assembled using imported SKD kits. The range includes light-duty and medium-duty trucks, and buses with seating capacities ranging from 26 – 51 passengers. Unlike the other two assemblers in the market, GMEA does not offer any contract assembly services focusing operations exclusively on assembly of Isuzu vehicles.

Figure 3.5

Source: GMEA Company Presentation (February 2017) * The Chevrolet brand has since been withdrawn from the East African market.

According to company officials, Isuzu pick-up trucks were previously assembled at the plant but are now imported fully built from GM's factory in South Africa. This change appears to have been predicated on ensuring price competitiveness in the market, indicating the tariff concessions on imports of SKD kits are not enough to justify domestic assembly in the face of high operational costs. As with passenger vehicles, if the landed price of imported FBU pick-ups proves more competitive, continuation of domestic assembly proves untenable.

GMEA's operations focus on assembling major parts and components contained in SKD kits imported from GM and Isuzu affiliated production facilities overseas. The SKD kits contain major parts including engines, transmission systems and electronic components with assembly operations entailing mounting of the engine and transmission system onto the chassis, wiring, welding of body parts and painting. Despite the mandatory local content threshold of 30%, it was difficult to ascertain the exact ratio of local inputs that go into production. According to company officials, local inputs comprise wiring harnesses, exhaust systems, batteries, tyres, seats upholstery and in the case of mini-buses vehicle bodies. GMEA works alongside a number of local suppliers and in some instances assists with supplier development. Notwithstanding this, the domestic auto components sector faces several operational and business environment constraints. Instances where component suppliers are assemblers or simply importers of OEM and non-OEM components, rather than actual manufacturer, are common. A case in point is

GMEA's long-standing supplier of tyres, Sameer-Africa, whose factory ceased domestic production in 2016 due to intense competition from cheaper priced imports. To counter this, Sameer-Africa resolved to shut down its factory, located in very close proximity to GMEA's plant, and outsource production to suppliers in China and India effectively becoming an importer and distributor of tyres. Taking cognisance of such challenges and trends could explain the government's not too rigid compliance monitoring.

Post the author's field visit to the GMEA plant in February 2017, GM signalled its exit from the East African market by announcing the sale of its entire 57.7% stake in GMEA to Isuzu Motors (Muchira, 2017). In addition to disposing its assembly operations, GM also announced plans to stop selling its Chevrolet brand of vehicles in the region. This could be seen as an indictment on the future prospects for the industry and the broader East African market, although GM's withdrawal was prompted by a wider restructuring and rationalisation of global operations. In May 2017, GM made a similar announcement with regards to its operations in South Africa, announcing plans to sale its manufacturing plant to Isuzu Motors (Bowker, 2017). GM's exit from Africa follows similar announcements to either withdraw or scale back operations in other parts of the world including Europe, India, Russia, Thailand and Indonesia. GM's retreat from markets it views as not having a competitive edge in, and reorienting focus on core markets in North America, is yet another indication of how competitive and challenging the global auto industry has become. This is particularly so in light of disruptive developments taking place in the global industry where established and emerging automakers battle for market share in the next frontier of automotive technologies comprising electric vehicles and driver-less cars. This is likely to result in the obsolescence of the long-standing internal combustion engine in the decades to come.

3.2.2 Associated Vehicle Assemblers

Established in 1977 Associated Vehicle Assemblers (AVA) has operated as a contract assembler throughout its history. AVA is strategically located in Kenya's main port city of Mombasa, unlike the other two auto plants located approximately 500 kilometres in the hinterland. AVA produces no less than six brands, which is slightly less than the 10 brands produced in 1982. The number of models produced has also declined from 35 in 1982 (Murage, 1983) to 27 currently (AVA, 2017). AVA appears to be the most productive plant in the industry[41] having produced 145,000 vehicles since inception in 1977 according to company records. This compares to GMEA's overall production of 80,000 vehicles as of 2016 and KVM's overall production of 60,000 as of 2015. However, it is interesting to note that average

[41] AVA's installed capacity is 10,000 units per annum compared to GMEA's 16,000 and KVM's 6,000 units.

annual production in the five years to 2016 was below the level achieved in 1982 of 5,528 vehicles (Table 3.11).

Table 3.11: AVA capacity utilisation and employment 1981 vs 2015

	1982	2012	2013	2014	2015	2016
Production Capacity	11 180	10,000	10,000	10,000	10,000	10,000
Actual production	5 528	2 304	3 259	4 528	4 206	3 075
Capacity utilisation	49%	23%	33%	45%	42%	30%
Employees	572	*	*	*	*	330

Source: GMEA (2017), Murage (1983). * author was unable to establish employment numbers for these years

Table 3.12: AVA – marques and number of models per vehicle type (1982 vs 2017)

	1982			2017		
	Buses	**Trucks**	**Pickups**	**Buses**	**Trucks**	**Pickups**
Daihatsu			3			
Datsun			8			
Ford		5				
Fuso (India)					3	
Fuso (Japan)					6	
Hino		1			3	
Mazda			2			
Mercedes		4				
Nissan	3					
Peugeot			3			
Scania				4	6	
Tata				1	2	
Toyota		1	3			2
Volvo		2				
Total	**3**	**13**	**19**	**5**	**20**	**2**
All models		**35**			**27**	

Source: AVA (2017), Murage (1983)

AVA is the only plant amongst the three auto assemblers that no longer has government shareholding. Ownership of the plant is currently held equally between two large local dealerships both of whom are OEM franchise holders.

Table 3.13: AVA shareholding 1977 vs 2017

	1977	2017
GoK/ Industrial Development Bank	51,0%	nil
Lonrho Kenya Ltd	24.5%	nil
Inchape Ltd	24.5%	nil
Simba Corporation Ltd	nil	50%
Marshalls (E.A.) Ltd	nil	50%
	100,0%	100,0%

Source: AVA (2017), Murage (1983)
*Industrial Development Bank was ultimately owned by the Government of Kenya (GoK) through a number of affiliates. The 51% stake was split as follows; 26% - GoK, 25% - Industrial Development Bank.

The author did not visit the AVA plant during the field trip[42] but according to information provided by the company onsite facilities at AVA include a body shop, jig shop, paint shop and a maintenance workshop. Use of local components appears minimal with only four local suppliers enlisted to supply batteries and tyres. Despite not visiting the plant, the author had an opportunity to meet with a senior executive of one of AVA's shareholders[43] in Nairobi in February 2017. During discussions, a key concern highlighted was the inconsistency and unpredictability of government policy in recent years exacerbated by minimal and uncoordinated consultation with sector stakeholders. A case in point was the unexpected introduction of excise duty on domestically assembled vehicles (as mentioned earlier). Another concern was the perception of an uneven playing field following the government's granting of tariff concessions applicable on SKD assembly to VW's new assembly venture at rival assembler Kenya Vehicle Manufacturers (KVM). The venture which commenced towards the end of 2016 involves minimal assembly of the Polo Vivo hatchback which is imported almost fully assembled from VW's plant in South Africa (see figure 3.6). Despite minimal value addition, and ambiguity around commitments to expand to proper assembly, the venture enjoys the full set of SKD tariff concessions i.e. a 45% differential vis-à-vis imports of FBUs. Speculation around this seemingly biased preferential treatment range from efforts by government to prop up flagging operations at KVM, where it still has shareholding, to a bid to revive of domestic assembly of passenger vehicles.

3.2.3 Kenya Vehicle Manufacturers

Kenya Vehicle Manufacturers (KVM) commenced operation in 1976 and is the only plant where the government continues to have a larger ownership stake vis-à-vis its joint venture partners. The current

[42] AVA's plant is located in Mombasa, while the author's field visit was limited to Nairobi, the capital city.
[43] Simba Corporation Ltd

joint venture partners are two large domestic dealerships, DT Dobie Ltd. and CMC Holdings Ltd. The two hold distributorship franchises for major global automakers and have been part of the domestic automotive scene for decades, both tracing histories that pre-date Kenya's independence. CMC Holdings traded as a publicly listed entity for 58 years before delisting from the Nairobi Stock Exchange in 2014 upon acquisition by Al-Futtaim Automotive Group of the United Arab Emirates (CMC Holdings, 2017). DT Dobie on the other hand operated as a family owned business until its acquisition by the French CFAO automotive group in 2000. Toyota Tsusho of Japan subsequently started an acquisition process for CFAO in 2012 that culminated in full ownership in 2016 (Toyota Tsusho, 2016).

Table 3.14: KVM shareholding [past & present]

	1976	2017	Franchises Held	Current Ownership
GoK	35.0%	35.0%	n/a	n/a
British Leyland	45%	nil		
DT Dobie	nil	32,5%	Mercedes Benz, Volkswagen, Great Wall Fiat Chrysler Automobiles marques [Chrysler, Dodge, Jeep]	Toyota Tsusho (Japan)
CMC Holdings	20%	32,5%	Ford, Mazda, Suzuki	Al-Futtaim Automotive Group (U.A.E.)
	100,0%	100,0%		

Source: Respective websites – KVM, CMC Holdings and DT Dobie

Table 3.15: KVM capacity utilisation 1981 vs 2015

	1982	2015
Production Capacity	4 200	6 600
Actual production	2 800	202
Capacity utilisation	67%	3%

Source: Deloitte (2016), Murage (1983).

Table 3.16: KVM – marques and number of models per vehicle type (past & present)

	1982				2015 - 2017			
	Buses	Trucks	Pickups/ Vans	Station Wagons	Buses	Trucks	SUVs	Hatchbacks
Ashok Leyland								
Coach building*					1			
Eicher						1		
Hyundai						1		

Hino							1		
Land Rover			7	7					
Leyland	5	6							
MAN									
Mitsubishi		2	1						
Mobius								1	
Nissan	1	2							
Suzuki	1	3							
Volkswagen	1								1
Total	**8**	**13**	**8**	**7**		**1**	**3**	**1**	**1**
All models	**36**					**6**			

Source: KVM (2017), Murage (1983), Mobius Motors (2016), Volkswagen (2016)

* KVM provides bus coach building services not tied to any particular marque/ brand

The two automotive trading groups behind KVM's private shareholders hold between them franchises for several global brands. Prima facie, such links would appear to be an excellent opportunity for KVM's assembly prospects. However, KVM's existence is unlikely to have been a deciding factor during the acquisition processes of the parent companies of KVM's private shareholders. Al-Futtaim's acquisition of CMC Holdings delivered an established platform comprising a national network of showrooms, service centres and experienced personnel. The opportunity therefore to use this platform to distribute some of its brands in the future was more likely the overriding deciding factor in the investment. While in DT Dobie's case, Toyota Tsusho's acquisition of CFAO brought about immediate presence in 34 African countries. Hence, KVM's coincidental links to two global automotive trading groups arises out of its status as a legacy investment for both its former independent shareholders. Furthermore, the KVM plant is the most underutilised of the three auto plants with capacity utilisation a paltry 3% in 2015. Two recent developments that may have signalled a brighter future for KVM and the sector at large have ultimately proved illusionary than course altering.

The first was the commencement of assembly at KVM of the first commercially produced Kenyan car brand, the Mobius II. Mobius Motors developed and designed the Mobius II in 2014 building it as an off-road car in the mould of a mid-sized sports utility vehicle with no-frills and a rugged build (Mobius Motors, 2016). It was touted as the 'Car for Africa' due to its basic but rugged design aimed at providing a solution fit for the poor road infrastructure across most of SSA, particularly in rural areas. Its initial retail price of US$10,000 was meant to be a draw for consumers in Kenya and the region. Although this

price point was substantially lower than most brand new passenger vehicles in the domestic market, it was still twice the landed cost of a basic entry-level imported used passenger car. The initial production run of 50 vehicles in 2014 took place at KVM. However, Mobius Motors has yet to commission another production run since. A visit by the author to Mobius Motors corporate office and show room in February 2017 revealed that design modifications aimed at upgrading the vehicle were ongoing. No definite launch date was indicated and it is unclear when, if at all, Mobius Motors will return to KVM to commission further production runs. A number of reasons may explain this. Company officials were guarded as to how the initial model performed and whether all 50 units produced were fully taken up by the market. However, given the price point it is difficult to envision strong demand for future models, unless Mobius II's successor is made available at a significantly reduced price to compete effectively against used imports. On the production side, it would be a challenge to achieve any scale efficiencies with such low numbers yet production runs in the thousands would probably be required to lower costs and hence increase affordability. The case of Mobius Motors best encapsulates the challenges of developing national auto brands in a developing country where the necessary automotive space is lacking and consumers have limited purchasing power.

The second development was the announcement by Volkswagen South Africa (VWSA) in September 2016 of plans to commence assembly of the Polo Vivo hatchback at the KVM plant – the first locally assembled passenger vehicle in over a decade. Production started in December 2016, with an initial annual production target of 5,000 vehicles set for 2017 (Daily Nation, 2016; VWSA, 2016). At first glance, this would seem a boon for KVM as opportunities for significant technology upgrading and much needed skills development could be expected. However, a field visit to KVM in February 2017 revealed otherwise. The VW Polo assembly operation entailed very minimal and basic assembly not worthy of the description SKD assembly. The vehicles appear to have been fully built in South Africa before being disassembled for export. The disassembled units are airfreighted to Kenya in large wooden crates comprising a complete cabin with only the engine, tyres and front and rear bumpers detached from the body (figure 3.6). Re-assembling the vehicle occurs in a matter of hours and involves very few personnel using the most basic of tools. Indeed, the vehicles arrive already painted with considerable care taken to ensure the paintwork is not damaged in transit due to the lack of a paint shop at the plant capable of international-standard work. In this context, the assembly operation seems to have been set up solely to take advantage of the tariff concessions applicable on importation of SKD kits rather than one entailing comprehensive upgrading and value addition. Furthermore, it demonstrates the ambiguity in rules

guiding domestic auto assembly with the VW operation at KVM viewed by other industry players as receiving preferential treatment. With less than 50 VW Polos' produced as of February 2017, the full-year production target of 5,000 units seems unlikely.

A further observation during the visit to KVM was the dilapidated state of the entire assembly facility. It became apparent during discussions with a senior company executive that shareholder support was sorely lacking in terms of both financial and strategic input. The parlous nature of the operation had led to management resorting to enterprising ways to shore up revenues and supplement staff incomes. A furniture production operation had been set up in a section of the compound where the wooden crates used to freight the VW Polos are recycled to produce an assortment of furniture (figures 3.7 & 3.8).

Figure 3.6 – VW Polo Vivo assembly kit prior to assembly at Kenya Vehicle Manufacturers assembly plant in Thika, Kenya – February 2017.

Source: Authors own photographic images obtained with consent of plant officials (2017).

Figure 3.7 – Furniture production yard within Kenya Vehicle Manufacturers compound. Furniture crafted out of recycled wood from crates used to freight the VW Polo – February 2017

Source: Authors own photographic images obtained with consent of plant officials (2017).

Figure 3.8 – recycled wood from crates used to freight the VW Polo Vivo – February 2017

Source: Authors own photographic images obtained with consent of plant officials (2017).

The observations made at KVM further illustrate the challenges of developing and sustainably operating comprehensive auto assembly operations in a small market that may nonetheless be exhibiting early prospects for growth in the medium to longer term. Given uncertainty around the pace and magnitude of the market's growth, major automakers would prefer to strategically position themselves in the market without committing significant resources. The 'locally assembled' VW Polo Vivo retails for just under USD 17,000, which places it as one of the more affordable new passenger vehicles in its category but still beyond the reach of most Kenyan consumers. Furthermore, its retail price is mostly due to the tariff concession applied to the SKD kits that would otherwise not apply were the car imported fully built. The VW Polo may capture a very small portion of the new passenger vehicle market. Sales could receive a further boost should the government make good its commitment to accord preference to locally assembled vehicles when upgrading its fleet (Business Daily Africa, 2016). However, the main beneficiary out of this arrangement is undoubtedly VW South Africa who have gained preferential access to a market dominated by used car imports and where assembly of passenger vehicles was previously non-existent.

3.3 Regional market

As described in the previous section, the progressive growth in demand for automobiles in Kenya is evident, notwithstanding the relatively small size of the market. A 2016 report[44] by the consulting firm Deloitte analysed the growth prospects of the auto industry in Africa. The report estimates that the compounded annual growth rate (CAGR) of vehicle use in Kenya was 7.6% between 2005 and 2014, comprising both new and imported used vehicles. In value terms Kenya's automotive trade deficit accounted for 40% of the East African Community's (EAC)[45] automotive trade deficit in 2013, using statistics available from UN Comtrade. None of the other countries in the EAC have vehicle assembly operations of note or that span the length of time of Kenya's industry (Okatch et al, 2011). However, Kenya's neighbour to the north, Ethiopia, is the only other country within the broader eastern Africa region that is actively promoting development of a domestic auto assembly industry, albeit under heavy tariff and non-tariff protection (Blair and Stamp, 2016; Deloitte, 2016). Similar to countries across the region Ethiopia also suffers an automotive trade deficit. Table 3.17 illustrates the extent of the automotive

[44] Deloitte Africa Automotive Insights
[45] Burundi, Kenya, Rwanda, Tanzania and Uganda

trade deficit for Kenya, the EAC as a region and the EAC and Ethiopia jointly for the year 2013, the latest period for which figures are available.

Table 3.17: Value of Imports versus Exports of Passenger Motor Vehicles in 2013 (USD millions)

	Kenya	EAC (including Kenya)	EAC & Ethiopia
Passenger Car Imports – HS87.03 ≠	496	1 210	1 523
Passenger Car Exports – HS87.03	4	39	50
Commercial Vehicle Imports – HS 87.04	211	619	1 382
Commercial Vehicle Exports – HS 87.04	16	60	63
Bus Imports – HS87.02	47	157	266
Bus Exports – HS87.02	17	24	25
Tractor Imports – HS87.01	231	465	684
Tractor Exports – HS87.01	5	6	7
Motorcycle Imports – HS87.11	96	264	296
Motorcycle Exports – HS87.11	1	9	9
Kits Imports – HS87.06 & HS87.07	6	9	12
Kits Exports – HS87.06 & HS87.07	1	2	2
Vehicle Parts Imports – HS87.08	80	164	271
Vehicle Parts Exports – HS87.08	3	6	6
Motorcycle and Bike Parts Imports – HS87.14	5	42	52
Motorcycle and Bike Parts Exports – HS87.14	0	2	2
Net Automotive Trade Balance	**-1 125**	**-2 782**	**-4 322**

Source: UN Comtrade, 2013
New and used passenger vehicles ≠

With an overall automotive trade deficit of US$ 2.8 billion across the EAC and US$ 4.3 billion when Ethiopia is included, a credible case could be made in favour of a collective regional approach towards

developing and harnessing the automotive space in the region. It is also instructive to note that the region's automotive trade deficit of US$ 4.3 billion accounts for a quarter of SSA's overall automotive trade deficit of US$ 16.3 billion (Black and McLennan, 2015). However, a joint regional automotive sector development strategy seems unlikely in the foreseeable future, even within the EAC, given challenges member countries have had enhancing regional trade of more basic commodities. (Mathieson, 2016; Cooksey, 2016)[46]. Ethiopia on the other hand, has a history of heavy economic protectionism and seems determined to go it alone with regards to developing her automotive industry focussing on meeting internal demand (Deloitte, 2016). In addition, Ethiopia is not part of the EAC economic bloc although, with Kenya and Uganda, is a member of the 19 member COMESA[47] trading bloc.

This section looked at the local and regional automotive market. With a significant automotive trade deficit across the region, Kenya's motivation to broaden its fledgling automobile assembly industry can be seen to have merit. However, given the lacklustre performance of the sector over the past four decades' re-examination of the fundamental aspects underpinning the sector is necessary. Consolidation amongst existing assemblers and further rationalisation of models assembled could be an option worth pursuing in order to achieve minimum scale efficiencies. However, this may lead to an oligopolistic situation with no guarantee that the resultant 'transformed' sector will actually produce affordable and desirable vehicles. On the demand side, rising per capita incomes in Kenya and across the East African region may signal a gradual rise in demand for motorised transport but this will take time to reach a level sufficient to support a fully-fledged auto assembly industry. Lastly, environmental protection measures currently being contemplated by governments in the region are likely to impose higher tariffs or complete bans on imports of older used vehicles. However, this will also not solve the supply side constraints faced by the sector and may actually place the 'newer' permissible imports beyond the reach of most consumers. The several factors hindering prospects for automobile assembly prompt an examination of the emerging motorcycle sub-sector and a discussion of whether growing demand could stimulate faster development of Kenya's automotive capabilities.

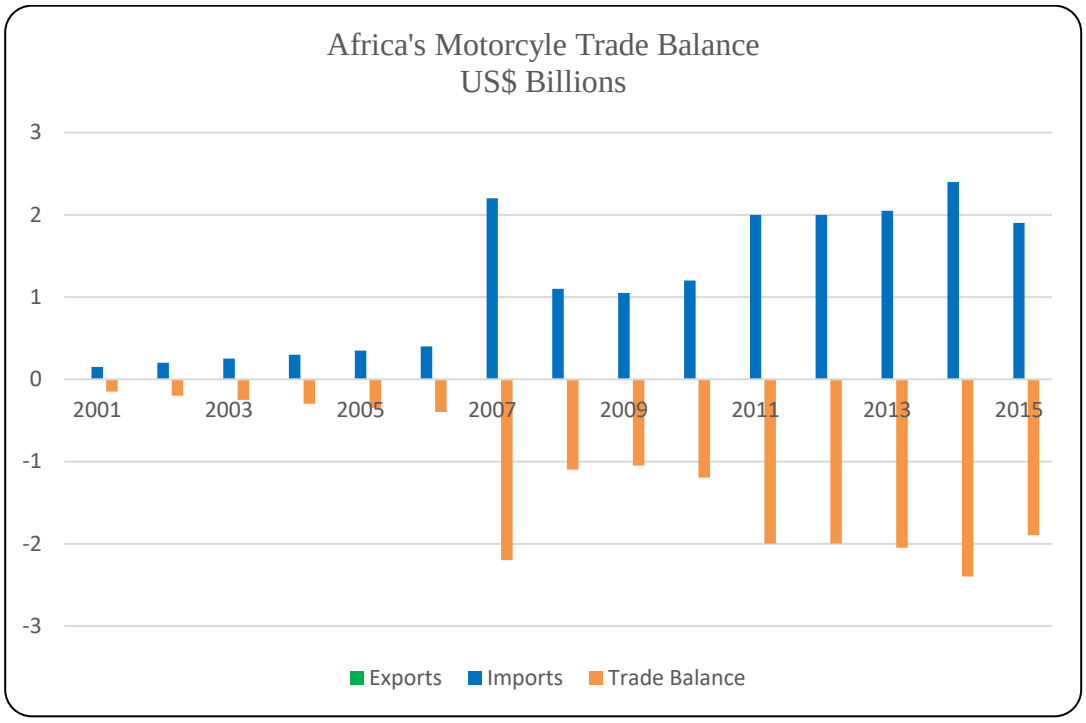
[46] Both Mathieson and Cooksey present reports discussing the political economy surrounding regional integration in the EAC noting that historical suspicions among partner states, the perceived threat of Kenya's economic dominance and recurring non-tariff barriers continue to undermine genuine realisation of the Customs Union and Common Market.
[47] COMESA – Common Market for Eastern and Southern Africa

3.4 Motorcycles

A study of the Kenyan automotive sector and indeed automotive sectors across the developing world cannot be complete without an examination of trends within the motorcycles sub-sector. The motorcycle is less complex from a technical standpoint and requires lower capital investments vis-à-vis the automobile. It could be argued therefore, that the motorcycle presents countries seeking to develop automotive capabilities an easier entry point. A look east towards Asia, which, with the exception of Japan, has established automotive manufacturing capabilities fairly, recently provides some telling insights. It is estimated that up to 58% of all motorcycles globally are found in the Asia-Pacific, East and South Asia regions (TIPS, 2016). The motorcycle industries in China and India have grown to the point where they are now major exporters to the developing world with Africa being a major destination market.

The value of motorcycles imported into Africa was estimated at USD 1.86 billion in 2015 (TIPS, 2016). Interestingly, before 2007 imports were relatively low, at less than USD 500 million annually, but increased to over USD 2 billion in 2007. A dip in 2008 due to the global financial crisis (GFC) did not last long with imports reverting to the USD 2 billion mark from 2011 onwards. Figure 3.9 illustrates the substantial growth in African motorcycle imports over the 15-year period between 2001 – 2015. China and India dominate the source markets jointly accounting for 85%, with China estimated to account for over 50% of Africa's imports (TIPS, 2016). Domestic production on the continent is negligible.

Figure 3.9: Africa's motorcycles trade balance (deficit) with the rest of the world 2001–2015



Source: TIPS (2016). Compiled from UN Comtrade statistics (2016) – Trade Map

For the purposes of this discussion the motorcycle sub-sector shall include both two and three-wheeler varieties. The reasons cited for the rapid growth of motorcycle usage on the continent are;

a) Urbanisation
b) Population growth
c) Growing traffic congestion in cities
d) Failure in provision of, and inadequate public transport systems
e) Rising per capita incomes (especially in the middle and lower income segments)

Due to inefficient public transport systems and poor road infrastructure across most of SSA, the motorcycle has risen as a viable alternative with many operated as taxis. Paradoxically, the rise in automobile usage due to imports of 'affordable' used cars has contributed to growing traffic congestion levels. Motorcycle taxis have the ability to navigate past immobile traffic and deliver passengers, as well as goods, to destinations faster.

Additionally, much needed employment opportunities are generated by motorcycle taxis. The growing youth bulge across SSA is taking place in the face of limited formal sector employment. Motorcycle

taxies, which it should be highlighted often operate within weak regulatory environments, help alleviate the employment challenge by creating opportunities for self-employment and SME expansion for small-scale fleet operators.

Motorcycle usage in Kenya has been growing especially in urban areas. For the period 2011 – 2015 registrations of motorcycles surpassed registrations of motor vehicles making up 58% of the total number of new registrations. Although growth in motorcycle registrations has remained flat over the period and seems to be declining marginally on a per annum basis, it is apparent that motorcycles are now a major medium of road transportation. Two-wheeler motorcycles made up the bulk of new motorcycle registrations at 97% of the total (table 3.18).

Table 3.18: New Motorcycles Registrations vs Motor vehicles 2011 – 2015

Type of Vehicle	2011	2012	2013	2014	2015	Totals
Total Motor Vehicles	**63 486**	**77 229**	**94 017**	**102 606**	**107 761**	**445 099**
Total Motorcycles	**142 355**	**95 815**	**128 161**	**115 451**	**139 420**	**621 201**
Motor Vehicles + Motorcycles						**1,066 300**
Motor Vehicles %						**42%**
Motorcycles %						**58%**
Motorcycles (Two-wheelers)	140 215	93 970	125 058	111 124	134 645	605 012
Motorcycles (Three-wheelers)	2 140	1 845	3 103	4 327	4 775	16 190
Two-wheelers						97%
Three-wheelers						3%

Source: Kenya National Bureau of Statistics (2016)

Kenya is the fourth largest importer of motorcycles on the African continent. Using trade statistics published by UN Comtrade, the International Trade Centre (2016) has compiled a list of the top ten motorcycle importers in Africa (table 3.19). The bulk of Kenyan motorcycle imports are in the form of CKD (completely knocked down) kits that require local assembly[48]. CKD kits enjoy a lower rate of import duty, levied at 15% vis-à-vis 25% for SKD (semi knocked down), kits and FBU (fully built units). Asian brands dominate the market as shown in table 3.20. Statistics are hard to come by although the recently formed Motorcycle Assemblers Association of Kenya (MAAK) aims to improve the availability

[48] This was corroborated during an interview with Car & General (C&G) in February 2017. C&G is a leading assembler and distributor of motorcycles in Kenya. Their flagship brand, Piaggio, commands an estimated 65% market share in the three-wheeler category. Piaggio is an international brand with major operations in Italy and India.

of data pertaining to the sub-sector. MAAK was launched in mid-2015 and comprises twenty-one assemblers[49] employing over five thousand employees (The Star, 6-May-2016).

Table 3.19: Top African import markets for motorcycles 2011 – 2015

Importers	Value imported in 2015 (US$ '000)	Annual growth in value 2011 - 15	Share in world imports (%)	Average distance from supplying countries (km)
Nigeria	446 646	(7)	2.4	9 601
Egypt	165 602	2	0.9	7 125
South Africa	123 042	(8)	0.6	10 457
Kenya	**98 428**	**5**	**0.5**	**7 194**
Tanzania	92 542	9	0.5	8 673
Guinea	75 813	(7)	0.4	11 547
Ethiopia	71 962	21	0.4	6 185
Ghana	65 399	(1)	0.3	11 689
Morocco	63 781	4	0.3	9 109
Benin	59 500	12	0.3	8 253
Others	601 669			
Africa	**1 864 384**		**9.8**	

Source: International Trade Centre calculations based on UN Comtrade statistics (2016) – Trade Map www.trademap.org/index.aspx

Table 3.20: Locally assembled motorcycle brands in Kenya - 2016

Brand	Estimated Market Share (2016)	Country of Origin
Bajaj	50%	India
TVS	25%	India
Honda	10%	Japan
Yamaha	5%	Japan
Others	10%	China

Source: Authors own estimates based on field interviews conducted with automotive industry stakeholders in February 2017

The potential the motorcycle sub-sector holds for deeper development of the automotive sector has been noticed by both industry stakeholders and the government. Efforts to enhance the level of local inputs in

[49] Although described as assemblers in various forums, interviews with stakeholders indicate the majority of these are garage workshops that assemble semi-knocked down kits rather than completely knocked down kits, although portray themselves as fully-fledged assemblers assembling completely knocked down kits in order to qualify for the associated tariff concession.

motorcycle assembly have commenced with the announcement by the Motorcycle Assemblers Association of Kenya (MAAK) of mandatory inclusion of locally manufactured components from June 2017 (Standard Digital, 10th March 2017). This is an industry-led initiative that has been induced by the government's threat to withdraw the tariff concession applicable on CKD kits. Initially, five out of the 290 required components will be sourced from local component suppliers. While this is a step in the right direction, it constitutes less than 5% of the final assembled unit and indicates how much further local content levels will have to rise for a thriving components sector to take shape. The five components are;

i) Seat
ii) Seat frame
iii) Foot rest
iv) Stand
v) Pillion (carrier)

With the exception of the seat, the other four components require basic steel fabrication and welding. This could work in favour of component manufacturers with minimal experience and limited capital. However, it could also work against efforts to promote domestic capabilities if insufficient restrictions are placed on imported substitutes or if such restrictions are not strictly enforced. Time will tell whether a domestic industry develops for motorcycle components and if the resultant demonstration effects may offer an alternative path for the struggling automobile components industry, notwithstanding the more technically demanding standards of the latter.

4.0 CONCLUSION

This dissertation examined the prospects and challenges facing late industrialising countries by studying the case of the fledgling automotive sector in Kenya, a developing country with a small industrial base. The study sought to identify the constraints holding back the four-decade old industry, which seems to be in a perpetual state of infancy. Key drivers required to propel the sector forward were identified. These drivers can be categorised into four groups; i) factor capabilities i.e. labour skills, capital, and technology; ii) industrial and trade policies; iii) value chain integration and iv) access to an 'automotive space'. The literature review highlighted the importance of these drivers in achieving successful outcomes in developing countries. To illustrate this, the auto sectors in Mexico and Thailand were discussed as examples of what is possible, and necessary, for success. In both instances, an effective mix of industrial and trade policies was utilised to support the national industry. This aided the development of domestic auto component clusters and facilitated integration into regional and global value chains. Additionally, appropriate industrial policies fostered the agility required to adapt the respective national industries' to the global industry's evolving governance structures. It was also established that availability of a viable automotive space is critical. The Mexican auto sector occupies an integrated peripheral market given its proximity to the large U.S. market, while the sector in Thailand has thrived due to its lead position in an emerging regional market. The insights from reviewing the literature helped focus the lens used to examine the sector in Kenya.

Additionally, a high-level analysis of the few existing auto industries was undertaken to help inform the discussion on prospects for Kenya. The auto sector is by nature complex and technologically advanced. While the continent's industrial capabilities are by no means homogenous, the broad indicators point to very low levels of industrialisation across the continent. Notwithstanding this, there are a few hubs of automotive production on the continent notably at the northern and southern-most tips, each of which has followed a unique trajectory. The continent's leading automotive producer, South Africa, developed its auto sector under import substitution industrialisation policies but has since adopted a more outward stance and achieved a level of success in integrating with global automotive value chains. Longer term, the possibility of the South African industry occupying the lead position in a regional or continental emerging market is a possibility, but this depends greatly on a significant improvement in the continent's economic prospects. Morocco, Algeria and Egypt in the north face the prospect of being players in an integrated peripheral market due to proximity to the large European Union market, as well as

participating in a potential emerging regional market in the MENA region. However, at present only the sector in Morocco appears likely to make the most of the viable automotive spaces in the region.

The sector in Kenya contrasts sharply with the South African and Moroccan industries. It lacks essential attributes which greatly dims its prospects for success. Lack of access to a viable automotive space forestalls any demand-led growth, while the absence of domestic component manufacturing renders integration into global or regional (continental) value chains a virtual impossibility. The sector's installed capacity for vehicle assembly is small with plant-level performance characterised by significant underutilisation. Furthermore, assembly is currently focused on production of light commercial vehicles for the small national market. Passenger vehicle assembly is negligible with competition from used vehicle imports set to continue in the near to medium term.

The growing popularity of motorcycle use for commuting and commercial purposes has generated growing interest in domestic motorcycle assembly. However, this has been supported entirely by the importation of assembly kits from China and India with very low levels of locally produced components used in assembly. Plans by the industry to increase local content levels are a step in the right direction, although this will be starting from a very small base constituting less than 5% of the assembled unit. Achieving scale is therefore a long way off and quality and cost considerations could impede faster development, especially if imported substitute components circumvent any restrictions that may be imposed.

The prognosis for the automotive sector in Kenya does not portray a bright future in the near term. Kenya may stand out amidst regional neighbours who have no experience in the sector but this is not a sufficient pre-condition. Impending obsolesce of the internal combustion engine may over the long-term lower entry barriers to its associated technologies and machinery for late industrialisers. However, this is not necessarily an ideal prospect especially from a green economy perspective although it could be an improvement on used vehicle imports. The role of economic growth in the east African region cannot be overlooked either. Faster increases in per capita incomes would lead to rising demand that could attract meaningful investments from global automakers. However, this would require demonstration of a viable automotive space in the region underpinned by well-functioning regional integration arrangements.

Lastly, the role of governance structures in the globally oriented auto industry in determining where, when and how investments occur is important. National and regional industrialisation strategies must

take cognisance of evolving global trends in formulating appropriate industrial and trade policies. As Sturgeon et al. (2009) highlight; governance of global automotive value chains is dominated by a small number of very large lead firms with operations spanning the globe. These lead firms now rely mostly on large global components suppliers with the resources and capabilities to 'follow' the lead firms to new international markets, effectively limiting the scope for local component suppliers to develop as well as integrate into the value chains governed by the lead firms. National and regional industrialisation strategies should formulate policies that not only attract market-seeking FDI but also foster the embedding of technology and upgrading of domestic skills through joint-venture arrangements with local partners.

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