Republic of Kenya

Manufacturing Export Competitiveness in Kenya

A Policy Note on Revitalizing and Diversifying Kenya’s Manufacturing Sector

December 4, 2013

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Policy Note: NLTA on Revitalizing and Diversifying Kenya’s Manufacturing Sector

December 4, 2013

Thomas Farole and Megha Mukim

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Executive Summary

Kenya’s Vision 2030 aspires to achieve middle income status by 2030, which will require sustaining an annual average GDP growth rate of 10 percent. Re-starting the export sector growth engine will be imperative to achieve these targets. In particular, manufacturing exports will be critical because of their impact on growth, employment and economy-wide linkages. Given this context, this background note will provide an assessment of the manufacturing sector’s performance in export markets and the main barriers constraining further growth and competitiveness in the sector, in order to inform policies to unleash the growth potential of manufacturing in Kenya.

Kenya’s manufacturing sector exhibits several strengths. Its global share in exports increased over the last 20 years, and it enjoys a strong position with regard to exports to the regional EAC market, particularly in some high-value sectors like chemicals and pharmaceuticals. Kenyan manufacturers are often young and dynamic, enjoy the advantages of high-skilled labor in management, and have an increasing capacity to innovate, especially in new products. In spite of these accomplishments, overall output growth trails behind services, formal employment growth is slow and productivity has been stagnant. FDI in the sector has stagnated, and the scale of exports is very small and mostly limited to low-value segments. Exporters also face high mortality rates, and only 35 percent survive past the first year.

The problems in manufacturing competitiveness derive from a number of inter-linked constraints. Firm dynamics seem to reflect some of the constraints – manufacturing firms are small, they under-utilize productive capacity, focus little on export markets and make limited investments in quality. These proximate explanations of competitiveness performance are further shaped by the business environment within which firms need to operate. In Kenya, a number of factors constrain investment, growth, productivity, and innovation in the manufacturing sector. Chief among these are the vast shortcomings in trade and transport infrastructure, high costs and low reliability of electricity, inadequate access to credit, the burden of corruption and regulatory constraints, the lack of competitively priced inputs and technical barriers to trade, especially to regional markets.

Based on the findings of the analysis, a number of priority areas are proposed to address the key constraints in the manufacturing sector. Many of these policy recommendations are in line with the Government’s second Medium Term Plan. These include (1) enforcement of competition laws aimed at cartels in inputs and infrastructure that drive up the costs of production, and improved policy predictability, especially between the national and county governments; (2) investments in improved trade and transport connectivity, and increased and better information on technical standards and quality; (3) public-private investments in improving the costs and the reliability of electricity provision; (4) macro- and microeconomic interventions to improve credit availability; and finally, (5) a renewed focus on special economic zones as a tool to target investments at particular sectors and geographical areas, to attract investment and increase exports and to link domestic firms with global supply chains.

The findings from this policy note strongly suggest a sharper focus on sector-specific value-chain analysis, an assessment of spatially targeted investments in Kenya and elsewhere, and a better understanding of shifting firm dynamics using data from the new 2013 enterprise survey and the industrial census. Kenya has already made
some progress towards enhancing the policy environment, and following a peaceful election cycle, there is now renewed energy and focus on addressing the measures that need to be undertaken and implemented in Kenya. This background note aims to provide the new Government with policy focus and tools to tackle the constraints keeping Kenya from reaching its potential in manufacturing export competitiveness.

1 Introduction

1.1 Objectives

This note is a background study to assess policy options to improve competitiveness of Kenya’s manufacturing sector, with a specific focus on exports. The focus is on export performance in the manufacturing sector overall and drawing on analysis of four specific manufacturing sectors – apparel, wood furniture, chemicals, and agri-industries – which are used as examples from which to generalize about wider competitiveness issues in Kenya’s manufacturing sector.

The specific objectives of this background paper are the following:

- To provide a better understanding of performance and competitiveness of Kenya’s manufacturing exports in a global and regional context;
- To identify key challenges for Kenyan manufacturers to invest in increasing the value of manufacturing output and competitiveness on global and regional markets; and
- To engage with key stakeholders on the policy options available to address existing constraints, identify additional areas of analytical work to support evidence-based policy formulation and to facilitate the exploitation of growth opportunities.

1.2 Methodology

While this note has a specific focus on export performance, it also looks more broadly at the manufacturing sector, including domestic production and sales, where such data is available. As a result, it uses a mix of analytical approaches in the study. The anchoring methodology, however, is the Trade Competitiveness Diagnostics framework developed by the International Trade Department of the World Bank, as illustrated in Figure 1. This approach involves analyzing aggregate trade performance (Trade Outcomes Analysis) along multiple dimensions of competitiveness: levels, growth, and market share; orientation and diversification; and quality and sophistication. The conclusions and hypotheses generated from the analysis of trade performance then allow for a more targeted assessment of the factors of competitiveness in Kenya that may contribute to the observed trade performance (Competitiveness Diagnostics).
Chapter 3 of the note includes analysis of trade performance at the industry and country level as well as at the firm level. For the assessment of aggregate trade data, the note relies mainly on data from UN COMTRADE using the WITS platform – this was supplemented by other sources as needed (e.g. World Development Indicators, World Trade Indicators, ITC Trade Map). In addition, the team was fortunate to have access to some Customs transaction data, making it possible to include some analysis of firm-level export dynamics, including patterns of entry, expansion, diversification, and exit. This is critical in assessing the determinants and channels for trade growth and to identify what policies are likely to be most effective. For this analysis, the note draw on customs firm-level data for Kenya and five comparator countries from the World Bank Exporter Dynamics Database.\(^2\) The analysis focuses on goods trade, as the focus of this report is manufacturing.

**Figure 1: Trade Competitiveness Diagnostics Framework**

![Trade Competitiveness Framework Diagram](https://example.com/figure1.png)

**Source: Reis and Farole (2012)**

In chapters 2 and 4 of the note, the note also looks at Kenya’s manufacturing sector beyond the internationally traded part of the sector, which is in fact the minority. From this perspective, in chapter 4, significant use of the latest Enterprise Survey data on Kenya (2007) is made in order to analyze performance from a firm-level perspective wherever possible. Specifically, a series of simple regressions were run to assess the factors (firm characteristics, business operating environment, etc) that contribute to observed outcomes like export participation, sales growth, participation in value chains, and the introduction of new products and processes, among others. This approach is necessarily limited by data availability (see below).

An important part of the methodology for this note was the first-hand information, data, and anecdotes received from the private sector through a series of focus groups and interviews conducted in January 2013 with four manufacturing sectors: apparel, wood furniture, chemicals, and agri-industries. In the case of wood furniture and agri-food separate focus group sessions were held with the formal and informal sectors.

\(^2\) For more information, see [http://microdata.worldbank.org/index.php/catalog/1031](http://microdata.worldbank.org/index.php/catalog/1031)
Data limitations

This note was originally designed with the intention of having access to microdata from the most recent Industry Census. Access to some Customs micro-data allowed analysis of firm-level trade performance. Microdata from the Industry Census would have allowed analysis to: i) gain a similar understanding of firm characteristics and performance in production and in serving the domestic market; ii) associate firm characteristics to observed export performance (assuming could the possibility of linking the Customs and Industry Census datasets); iii) analyze manufacturing sector productivity performance and its determinants; and iv) explore additional issues like the links between location, firm characteristics, and performance, allowing us to understand the role of agglomeration and industry clusters.

In the absence of such data, the team relied on more aggregate analysis of sector and trade performance, particularly in Chapter 4 (on Diagnostics), drawing on international comparative data (e.g. Doing Business, World Economic Forum, etc.), on the World Bank’s 2007 Enterprise Surveys, on information obtained through interviews and focus group discussions, and on data and information from previous reports.

In order to put the assessment of competitiveness into context, it needs be compared with a number of countries. Ideally, they include neighboring countries within the region, countries that are similar in terms of economic development and/or size, and competitors with a similar composition of the export basket. Comparator countries may also include peers that serve as a benchmark. For the analysis on trade performance in Chapter 3, the following peer countries were selected: Ghana, Rwanda, Tanzania, and Uganda because they are neighboring countries and similar with regard to per capita income and resource-intensity of exports; South Africa which serves as a regional benchmark and a country with a similar population and role as an industrial hub for Africa; and Vietnam, Cambodia, and Nicaragua – as three developing countries outside the region with similar export structures as Kenya (i.e. emphasis on agricultural products and light manufacturing). In Section 4, some of these same peer countries were used in some analysis, but in others a different set was used—this depended largely on what data was available for comparing with the same survey year of Kenya’s latest Enterprise Surveys.

1.3 Structure of this note

The first section of this note outlined the objectives and methodology used for the assessment of Kenya’s trade and manufacturing competitiveness. Chapter 2 sets the stage of the analysis by putting the broad performance of Kenya’s manufacturing sector into both historical and global perspective, echoing the call that Kenya has been ‘running on one engine’, with exports and manufacturing failing to deliver on their potential for growth, job creation, and upgrading. In Chapter 3 we conduct a detailed analysis of trade performance, with a specific focus on the manufacturing sector. This is followed in Chapter 4 with an attempt to identify the most significant constraints facing Kenya’s manufacturers and exporters, and the factors affecting firm performance. Finally, Chapter 5 summarizes the findings of the note and sets out some proposed policy priorities to support the competitiveness of Kenya’s manufacturing firms and to facilitate their entry and growth in export markets.
2. Context: growth, exports and the role of manufacturing in Kenya

2.1. Growth and investment

Kenya’s Vision 2030 aspires to achieve middle income status by 2030. To do so, the government anticipates sustaining an average annual GDP growth of 10 percent. In recent years, some of the key macro foundations have been put in place to achieve this target: inflation has been kept below 10 percent; the exchange rate has stabilized; and debt levels are below 45 percent.\(^3\) The new government is embarking on the implementation of a new Constitution and a system of devolved government. Yet GDP growth and investment rates remain well below what is required to achieve the targets. Prior to the domestic and the global crisis, the Kenyan economy grew at rates of above 8 percent for a few quarters (Figure 2a) which is close to the annual average growth rates of some of the fastest growing emerging countries. However, this positive development was halted temporarily following the post-election conflicts in 2008, and slowed to 6.8 percent in 2010-2011 to 4.7 percent in the last quarter of 2012. While growth is expected to increase to 5.8 percent and 6.2 percent in 2013 and 2014 respectively\(^4\), it remains far below the target.

Figure 2: a) Quarterly GDP growth (%), Kenya, 2005-2012; b) Gross capital formation (% GDP), Kenya vs. peer countries, decadal averages

Moreover, growth in Kenya has long been imbalanced, predominantly driven by domestic consumption, which accounts for some 78 percent of GDP\(^5\). Investment remains well below what is needed to deliver sustained high growth rates. As shown in Figure 2b, capital formation in Kenya during the 2000s only averages 18.1 percent of GDP. In fact, while Kenya had one of the highest investment rates among peer countries in the 1980s, this declined steadily in the next two decades to the point that Kenya had the lowest levels of capital formation of all peers during the 2000s. On a positive note, the rate of capital formation has been on the increase in Kenya since 2006 and reached 21.2 percent in 2011. However, the efficiency of investment in Kenya has been relatively low over the past decade. Kenya’s incremental capital output ratio (ICOR) over the decade was 4.9, implying that 4.9

\(^3\) World Bank (2012a)
\(^4\) IMF, Global Economic Outlook, April 2013
\(^5\) World Development Indicators, World Bank and OECD National Accounts data files
units of capital would be required to generate one unit of output. Assuming a similar efficiency rate going forward, Kenya would require investments levels of approximately 40 percent of GDP to be able to achieve a rate of growth of GDP of 10 percent. Even with substantially improved investment efficiency resulting from ongoing reforms in Kenya, investment rates of at least 30 percent of GDP (compared with an average of 20 percent over the last five years) would most likely be required to meet the Vision 2030 targets.

2.2. Exports as the weak engine

From the above discussion, it is clear that continued reliance on the consumption engine of growth is unviable and that substantial increases in investment and new sources of growth will be required to meet growth, development, and job creation objectives. In this context, exports have long been the weak engine of Kenya’s growth machine. Figure 3a shows that, among nine peer countries, Kenya had the highest export share of GDP in the 1960s, but this declined steadily during the 1980s and, after a brief spike in the early 1990s to reach close to 40 percent of GDP, exports continued to stagnate and decline, finally stabilizing around 27 to 28 percent of GDP in the period 2006-2010. This imbalance – consumption growth fuelled by imports combined with weak export growth – is reflected in an increasing trade deficit that almost doubled between 1990 and 2010 from 5.6 to 10.3 percent. Moreover, export competitiveness in recent years displays worrying trends. Figure 3b – which decomposes Kenya’s export performance into sectoral and geographical “pull” effects and “push” (competitiveness) effects – indicates that over the period 2006 through 2011, where Kenya’s export growth has been above the world average, this has almost always been a function of fortunate pull effects; for the most part, however, competitiveness has dragged down export performance. Interestingly, however, over the first three quarters of 2011 competitiveness appears to have turned positive.

Figure 3: a) Exports of goods and services as a share of GDP (1960-2010); b) Export Performance Composition (values), 2006q1-2011q3

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6 We refer to “pull” factors to identify export growth explained by compositional effects, i.e. the export growth that is due to a country’s specialization in given sectors and towards given countries. We refer to “push” factors to identify the role of performance in the exporting country. We assume that country A is more competitive than country B if its exports and market shares increase over and above those of countries having the same composition of exports.
2.3. Why manufacturing matters

Manufacturing has the potential to play a particularly important role in putting Kenya on a sustainable growth path, through its direct contribution to creating quality employment, through its strong linkages with other parts of the economy, by raising capital accumulation, by smoothing volatility in the economy, and by facilitating global integration and knowledge spillovers which are critical to the process of structural transformation. It should be noted here that manufacturing is only one of the critical sectors for achieving the Vision 2030 goal, with services, in particular, tourism, transport, construction and ICT, likely to be important for GDP and export growth.

2.3.1. The manufacturing sector provides opportunities for large scale job creation

The demographic make-up of the Kenyan population has been changing steadily. Falling birth and death rates have led to a swell in the working population and a drop in dependency ratios (Figure 4). More than half a million people are joining the labor force every year; this will rise to one million annually by 2030\(^7\). Such a demographic dividend has generated periods of high growth in other countries. On the other hand, according to the 2009 Kenya Census, and little more than half the current labor force is employed productively in the formal sector, and the unemployment rate in the 20-24 year age group was twice that of the overall population. Moreover, while Kenya is still overwhelmingly rural, it is urbanizing rapidly. Over the last 20 years, the urban population grew more than twice as fast as the country overall; from 3.7 million in 1989 to 12.4 million people living in urban areas in 2009\(^8\). Models of rural-urban migration, such as Harris-Todaro, find that unless the manufacturing sector plays an important role in creating large-scale employment in providing jobs for economic migrants to towns and cities, rural migration could result in urban unemployment and/or a burgeoning informal sector. Thus addressing

\(^7\) Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2010 Revision

\(^8\) World Bank computation based on Kenya Census data, find more information at World Bank (2012b)
the demographic challenge and opportunity of Kenya’s future urban labor force will be a critical priority for the future, and success in addressing this will go hand in hand with meeting Vision 2030 growth targets.

Figure 4: Project demographic shifts in Kenya: bulge in the working age population

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Dependency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>2050</td>
<td></td>
<td>61</td>
</tr>
</tbody>
</table>


2.3.2. Increasing capital accumulation

Higher capital accumulation in the manufacturing sector helps to raise productivity and facilitate overall growth. The manufacturing sector, unlike agriculture, is also characterized by scale and agglomeration economies\(^9\) - this allows spatially targeted and concentrated investments to yield higher returns than compared with spatially dispersed agricultural activities.

2.3.3. Economy-wide linkages

The manufacturing sectors offers significant multiplier effects beyond the sector itself. For example, more than 25 percent of the output of Kenya’s transport sector is used as an input to other domestic sectors, including manufacturing. Moreover, manufacturing firm, especially those in the agriprocessing sector, source critical inputs from the agricultural economy.

2.3.4. Smoothing volatility

Reliance on commodity exports – agricultural, mining, and other natural resources – is common among many if not most developing countries. But this tends to aggravate the significant higher volatility that developing countries naturally experience, as commodity export risk being part of boom and bust demand and pricing cycles over which exporting countries have little control. As Error! Reference source not found. shows, over the last thirty years, the manufacturing sector has consistently showed lower growth volatility on a global basis than either agricultural raw materials or mining related exports.

2.3.5. Global integration, knowledge spillovers, and structural change

The manufacturing sector, particularly within global production networks, provides domestic firms and workers exposure to foreign technology and knowledge. This may come through foreign direct investment in the Kenyan manufacturing sector, through the import of capital equipment embodying foreign knowledge, through exporting to international buyers, and to competing with foreign firms in regional and global markets. At the moment, outside of the apparel sector and some parts of the agri-food sector, Kenyan exporters tend to have low levels of integration into global value chains.

2.4. Performance of the manufacturing sector in Kenya

As noted above, Vision 2030 aims for a robust, diversified, and competitive manufacturing sector, and puts much focus on the sector as a driver of exports and of growth overall. Indeed, experience in countries that achieved sustained, rapid growth since 1960s indicates that such growth has typically been accompanied by sharp increases in the share of exports in GDP, and in most cases in the share of manufacturing in both exports and GDP. How is Kenya positioned in this regard? What does the manufacturing sector look like in Kenya today? And how important is it in the national economy?

Kenya’s manufacturing sector is strongly linked to its agricultural economy, with 40 percent of total output in the sector coming from food, beverages, and tobacco (Figure 6). The second major sector is chemicals and petroleum, which accounts for just below 20 percent of output. After this, most sectors are relatively small, with textiles, clothing & footwear and non-metallic minerals the only sectors accounting for more than 5 percent of

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Eichengreen, 2008
total output\textsuperscript{11}. Finally, it is notable that micro, small, and medium enterprises (MSMEs) account for 11 percent of output in the manufacturing sector, while contributing a large share of total employment in the sector.

**Figure 6: Composition of manufacturing output by subsector (% based on output in KSh), 2011**

![Pie chart showing composition of manufacturing output by subsector in 2011.](image)

*Data Source: Kenya National Bureau of Statistics*

In 2011 just below 40 percent of output in Kenya’s manufacturing sector is value added, with the remaining 60 percent coming from intermediate inputs\textsuperscript{12}. From the most recent 5-year trend data, it appears there has been an overall decline in the value-added share of manufacturing sector output, from a high of 43.6 percent in 2007 down to 39.5 percent in 2011.

Figure 8 (a) shows that output in the manufacturing sector was largely flat through the 1990s, but picked up during the last decade, growing 3.9 percent per annum in real terms between 2000-01 and 2010-11. As a share of GDP, however, manufacturing has continued to stagnate at between 10 and 12 percent of GDP throughout the past two decades. While this level is well ahead of its regional peers, it remains far behind South Africa (which has a similar population level) and international peers who have experienced major growth in the manufacturing contribution to GDP (Figure 8b). As recently as 2000, manufacturing was the second largest contributor to the Kenyan economy (behind agriculture). It has since fallen to fourth in importance, having been surpassed by the transport & communications and wholesale and retail trade sectors.

\textsuperscript{11} Note that textiles, clothing & footwear also accounts for the majority output from the EPZs, so total share of output from this sector is probably in the range of 7 to 9 percent.

\textsuperscript{12} No input-output tables are available to give some perspective on: i) the degree to which these inputs come from domestic or imported sources; and ii) the sectors from which the inputs are sourced (e.g. agriculture v other manufacturing sectors)
Aside from exports, manufacturing output growth has actually trended closely in line with GDP and with domestic demand, and the surge in domestic demand during the 2000s has played an important role in driving robust growth in the manufacturing sector over the decade, at least up until the global crisis (Figure 9a). The close link between manufacturing value added and domestic demand seems to have been broken (at least temporarily) with the global economic crisis from 2008, where output slowed considerably and relatively robust domestic demand was served increasingly from imports. Figure 9b shows that while manufacturing output grew well during the last decade, it trailed behind growth in other industrial activities (mainly driven by construction, but also energy and mining) and behind the services sector, mainly during the second half of the decade. Again, we see here that the agricultural sector is the main activity dragging down growth in the economy.
Figure 9: a) Index of nominal growth in value added, GDP, and domestic demand (1990-2011); b) Index of real growth in value added at basic prices by broad sector (2000-2011)

Data Source: World Development Indicators

Figure 10 tells the story about manufacturing in Kenya from the perspective of exports. Kenya has experienced continued decline in the relative importance of manufacturing in the overall export basket, falling below 12 percent in 2010-11. This declining share of exports is not inherently problematic. A declining share of manufacturing in the export basket would be expected if it were the case that Kenya had experienced a major boom in another export sector (e.g. agriculture or another natural resources sector), although this does not appear to be the case. Similarly, we might see a declining share of manufacturing exports if it were the case that a rapid increase in domestic demand resulted in Kenyan exporters refocusing to serve the domestic market. Indeed, Figure 10a indicates this might be part of the story – while exports experienced little growth overall in the 1990s (in fact declining even in nominal terms during the second half of the 1990s), this was followed by relatively robust growth in the 2000s (almost 13 percent annual growth in nominal US$ terms).

In fact, Figure 10b suggests that the problem with exports is not really a problem of manufacturing. And that the problem with manufacturing exports is that they are very small, not that it is necessarily in serious decline. While Kenya’s global market share for non-manufacturing merchandise exports was cut in half between 1998 and 2011, the market share of manufacturing exports grew by almost 30 percent during this same period. But the actual market share of Kenya’s manufacturing exports is still extremely low as of 2011 – at 0.014 percent, less than one quarter the level of non-manufacturing goods exports and almost 45 times less than would be expected for a country with Kenya’s population.

Figure 10: a) Manufacturing exports in Kenya; b) Global export market share: manufacturing vs. other merchandise exports
In short, the performance of the manufacturing sector in Kenya has been mixed. While manufacturing output has picked up in the last decade, the share of value-added in total output and the contribution of the sector to GDP has been falling. Most of the growth in manufacturing output has been in line with increases in GDP and domestic demand. However, domestic demand is also being increasingly served by imports, and at the same time the share of manufacturing in the Kenyan export basket has been declining. And while the market share of Kenyan exporters abroad remains robust, the size of this share remains extremely low given the size of the Kenyan economy.
3. Manufacturing competitiveness through the lens of exports

This section will assess the competitiveness of Kenya’s manufacturing sector by focusing on performance in export markets. Trade is used here as a lens through which to understand how Kenya’s manufacturing sector has performed in recent years. While the focus of the section is on manufacturing, some of the analysis will look at the goods sector as a whole, either for comparison or because data is not available specifically for manufacturing. As noted in Section 1 of this report, the analysis also looks specifically at some manufacturing subsectors (agri-foods, chemicals, textiles & apparel, and wood furniture) in order to draw lessons and examples from important and/or typical sectors.

The analysis presented in this section will broadly cover the following topics: overall export levels, composition, growth and market share; diversification and product and market expansion; sophistication and quality of exports; and patterns of firm entry and survival in export markets.

3.1. Manufacturing in the export basket: still a small player with few champions

Table 1 provides some context on the position and growth of manufacturing exports within Kenya’s overall export basket. The distribution of goods exports across broad sectors is dominated by vegetables and foodstuffs whose share made up 58.6 percent of total exports in 1996-98 and even expanded its share to over 60 percent in 2010. This is in line with Kenya’s revealed comparative advantage (RCA) index which increased strongly for vegetables between 1996-98 and 2010. Nevertheless, the larger role of vegetables may be a function of rising global food prices in recent years rather than quantity effects. The share of Kenya’s manufacturing sector (sectors 28-97) remained at 28.7 percent in 1996-98 and 2010. While the 2006-08 seems to reflect a strong increase to 41.1; this, however, was mainly driven by an increase in transportation (due to an anomalous, one-time surge of ‘aircraft propellers’ in 2008), which fell back again in 2010. Textiles and clothing and footwear showed the highest growth rates between 1996-98 and 2010, the former increasing its share of exports from 4.7 to 7 percent. Among manufacturing sectors only textiles and clothing and hides and skins show revealed comparative advantage – no other manufacturing comes close.

| Table 1: Export Basket and Revealed Comparative Advantage, Kenya, 1996-98, 2006-08, and 2010 |
|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Average 1996-98 | Average 2006-08 | 2010 |

13 In order to avoid one year spikes that might skew our data, we use three year averages (1996-98 and 2006-08) of export values. However, we do not show 2008-2010 as data is skewed downward as a result of the global economic crisis.

14 The RCA index measures the relative advantage or disadvantage of a certain country in a certain industry as evidenced by trade flows. An index above the unit indicates that a country’s share of exports in that sector exceeds the global export share of the same sector. If this is the case, we infer that the country has a comparative advantage in that sector. Since high export volumes can results from subsidies or other incentives provided, including under-valued exchange rates, the RCA index has been argued to be a misnomer in the sense that it captures competitiveness rather than comparative advantage (Siggel, 2006).
### Table 2

<table>
<thead>
<tr>
<th>Sector</th>
<th>Exports (US$ '000)</th>
<th>% of total</th>
<th>Exports (US$ '000)</th>
<th>% of total</th>
<th>Exports (US$ '000)</th>
<th>% of total</th>
<th>CAGR ('96-'98-'10) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-05 Animal</td>
<td>103,325</td>
<td>5.5</td>
<td>113,949</td>
<td>2.6</td>
<td>101,452</td>
<td>2.6</td>
<td>-0.1%</td>
</tr>
<tr>
<td>06-15 Vegetable</td>
<td>946,196</td>
<td>50.2</td>
<td>1,815,756</td>
<td>41.1</td>
<td>2,063,148</td>
<td>52.2</td>
<td>6.2%</td>
</tr>
<tr>
<td>16-24 Foodstuffs</td>
<td>157,835</td>
<td>8.4</td>
<td>333,725</td>
<td>7.5</td>
<td>368,314</td>
<td>9.3</td>
<td>6.7%</td>
</tr>
<tr>
<td>25-27 Minerals</td>
<td>136,715</td>
<td>7.3</td>
<td>338,196</td>
<td>7.7</td>
<td>284,784</td>
<td>7.2</td>
<td>5.8%</td>
</tr>
<tr>
<td>28-38 Chemicals</td>
<td>102,988</td>
<td>5.5</td>
<td>251,158</td>
<td>5.7</td>
<td>232,630</td>
<td>5.9</td>
<td>6.5%</td>
</tr>
<tr>
<td>39-40 Plastic / Rubber</td>
<td>30,326</td>
<td>1.6</td>
<td>66,893</td>
<td>1.5</td>
<td>65,810</td>
<td>1.7</td>
<td>6.1%</td>
</tr>
<tr>
<td>41-43 Hides, Skins</td>
<td>32,793</td>
<td>1.7</td>
<td>105,005</td>
<td>2.4</td>
<td>72,767</td>
<td>1.8</td>
<td>6.3%</td>
</tr>
<tr>
<td>44-49 Wood</td>
<td>51,862</td>
<td>2.8</td>
<td>97,953</td>
<td>2.2</td>
<td>61,353</td>
<td>1.6</td>
<td>1.3%</td>
</tr>
<tr>
<td>50-63 Textiles, Clothing</td>
<td>87,966</td>
<td>4.7</td>
<td>352,747</td>
<td>8.0</td>
<td>275,516</td>
<td>7.0</td>
<td>9.2%</td>
</tr>
<tr>
<td>64-67 Footwear</td>
<td>6,149</td>
<td>0.3</td>
<td>16,697</td>
<td>0.4</td>
<td>19,952</td>
<td>0.5</td>
<td>9.5%</td>
</tr>
<tr>
<td>68-71 Stone / Glass</td>
<td>29,965</td>
<td>1.6</td>
<td>170,997</td>
<td>3.9</td>
<td>27,192</td>
<td>0.7</td>
<td>-0.7%</td>
</tr>
<tr>
<td>72-83 Metals</td>
<td>82,300</td>
<td>4.4</td>
<td>244,513</td>
<td>5.5</td>
<td>165,348</td>
<td>4.2</td>
<td>5.5%</td>
</tr>
<tr>
<td>84-85 Mach/Elec</td>
<td>55,503</td>
<td>2.9</td>
<td>164,794</td>
<td>3.7</td>
<td>108,952</td>
<td>2.8</td>
<td>5.3%</td>
</tr>
<tr>
<td>86-89 Transportation</td>
<td>32,256</td>
<td>1.7</td>
<td>292,190</td>
<td>6.6</td>
<td>67,464</td>
<td>1.7</td>
<td>5.8%</td>
</tr>
<tr>
<td>90-97 Miscellaneous</td>
<td>28,741</td>
<td>1.5</td>
<td>56,050</td>
<td>1.3</td>
<td>38,236</td>
<td>1.0</td>
<td>2.2%</td>
</tr>
<tr>
<td>Total</td>
<td>1,884,920</td>
<td>100.0</td>
<td>4,420,623</td>
<td>100.0</td>
<td>3,952,917</td>
<td>100.0</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Data source: Comtrade via WITS

### 3.2. Export level and growth: Moderate performance in a regional context, but far below potential?

In the context of the bleak picture of export competitiveness presented in Section 2, the picture for manufacturing looks moderately better. However, manufacturing exports remain very limited in scale and growth (even from this low base) has been less than spectacular. Table 2 summarizes some basic indicators on the level and growth rates of manufacturing exports in Kenya relative to peer countries. What is most striking is the huge gap in the scale of exports between the regional peers (including Kenya) and the international comparators. With manufacturing exports at US$37 per capita, Kenya is a clear leader in Sub-Saharan Africa (outside South Africa). But its per capita exports are less than one-tenth that of Nicaragua and Cambodia, one-twentieth of Vietnam’s, and one-thirtieth of South Africa’s.
Table 2: Summary of manufacturing export sector performance, Kenya v peers

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>28</td>
<td>699</td>
<td>3%</td>
<td>5%</td>
<td>12%</td>
</tr>
<tr>
<td>Kenya</td>
<td>37</td>
<td>1,523</td>
<td>10%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>10</td>
<td>480</td>
<td>8%</td>
<td>11%</td>
<td>10%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>1</td>
<td>12</td>
<td>4%</td>
<td>7%</td>
<td>4%</td>
</tr>
<tr>
<td>Uganda</td>
<td>6</td>
<td>192</td>
<td>24%</td>
<td>25%</td>
<td>16%</td>
</tr>
<tr>
<td>South Africa</td>
<td>1,219</td>
<td>61,654</td>
<td>11%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>408</td>
<td>2,392</td>
<td>23%</td>
<td>17%</td>
<td>15%</td>
</tr>
<tr>
<td>Cambodia</td>
<td>463</td>
<td>6,625</td>
<td>46%</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>760</td>
<td>66,753</td>
<td>32%</td>
<td>23%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Data Source: Comtrade via WITS (in current US$); population data from World Development Indicators

In terms of growth, Kenya’s manufacturing sector performed much better during the 2000s, expanding exports at almost twice the rate of the previous decade. Yet again, this positive story is tempered somewhat when looking at it in a comparative context. As Table 2 shows, with the exception of Rwanda and perhaps South Africa, Kenya’s manufacturing export growth in recent years looks muted, certainly in comparison to the Asian and Latin American comparators.

Box 1: Subsector spotlight – export level and growth

In this box and in similar boxes to follow in later sections of this note, we provide examples of export performance in specific subsectors: agri-foods; chemicals; textiles and apparel and wood furniture. The intention is to illustrate broad trends as well as to highlight where significant heterogeneity exists across sectors.

The figures below highlight the dominance of the agri-food sector in Kenya’s export basket, with export values over US$ 3 billion, some 10 times larger than those of the chemicals and textiles and apparel sectors. By contrast, the wood furniture sector is clearly a domestically oriented sector, with total export values never reaching above US$20m.

With the exception of the wood furniture sector, all subsectors mirror the broad trends of higher export growth during the 2000s than in the 1990s. Although, even here there is significant variation across subsectors – in agri-food exports grew around 10 percent annually versus only 3 percent in the 1990s; chemicals sector boomed, expanding exports three-fold over the decade, with particularly strong growth in the second half of the 2000s; and while apparel is clearly a story of the 2000s, the post-2005 (post-MFA) environment has witnessed stagnation, with however an upward trend re-appearing in 2011. Wood furniture showed the opposite trend, with 13 percent annual growth in the 1990s collapsing to only 3 percent in the 2000s.

Export value (US$m) and annual growth rate (%) by manufacturing subsector (1990-2011)

---

Note that agri-foods exports include the full agricultural value chain and therefore includes activities that are not classified under manufacturing elsewhere in this note.
3.3. **Market share: Broadly positive performance driven by regional market success; global competitive position less clear**

As discussed at the beginning of this note, Kenya’s share of global trade has been in long term decline, with the market share of merchandise exports falling steadily from a peak of 0.078 percent in 1978 to only of 0.030 percent in 2011. But while the same pattern of decline is evident in manufacturing over the long term, most of the decline in share took place in the 1970s. In fact, Kenya’s global share in manufacturing remained relatively steady since the 1980s and has actually *increased* from a low of between 0.008-0.009 percent in the late 1980s.
and early 1990s to a peak of 0.016 percent in 2008 (it remained at 0.014 percent in 2011). Among Kenya’s leading manufactured exports, performance has been relatively strong (Table 3). In nine of the 10 leading product categories, Kenya experienced faster growth (albeit from a small base) than the world average between 2000 and 2005; and in seven of these ten it experienced faster growth in the period 2006 to 2011. The net result over the decade is that Kenya grew its global market share in eight of its ten leading manufacturing export sectors, experiencing declining share only in pharmaceuticals and non-metallic minerals manufactures.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Inorganic chemicals</td>
<td>109,523,977</td>
<td>11.7%</td>
<td>9.8%</td>
</tr>
<tr>
<td>54</td>
<td>Medicinal and pharmaceutical products</td>
<td>63,217,183</td>
<td>8.7%</td>
<td>20.6%</td>
</tr>
<tr>
<td>55</td>
<td>Essential oils &amp; perfume materials</td>
<td>94,727,870</td>
<td>20.5%</td>
<td>13.2%</td>
</tr>
<tr>
<td>61</td>
<td>Leather, leather manufactures, n.e.s.</td>
<td>89,002,160</td>
<td>12.7%</td>
<td>5.5%</td>
</tr>
<tr>
<td>66</td>
<td>Non-metallic mineral manufactures, n.e.s.</td>
<td>121,109,120</td>
<td>11.4%</td>
<td>8.6%</td>
</tr>
<tr>
<td>67</td>
<td>Iron and steel</td>
<td>107,528,494</td>
<td>29.1%</td>
<td>16.7%</td>
</tr>
<tr>
<td>69</td>
<td>Manufactures of metal, n.e.s.</td>
<td>59,581,184</td>
<td>13.4%</td>
<td>10.4%</td>
</tr>
<tr>
<td>78</td>
<td>Road vehicles</td>
<td>53,443,038</td>
<td>19.2%</td>
<td>9.5%</td>
</tr>
<tr>
<td>84</td>
<td>Articles of apparel and clothing accessories</td>
<td>288,164,165</td>
<td>40.9%</td>
<td>6.6%</td>
</tr>
<tr>
<td>89</td>
<td>Miscellaneous manufactured articles, n.e.s.</td>
<td>106,997,890</td>
<td>10.9%</td>
<td>8.9%</td>
</tr>
</tbody>
</table>

Data source: Comtrade via WITS

Notes: ‘n.e.s’ = not elsewhere specified; color coding is used to differentiate SITC-1 digit classifications (broad sectors)

Part of Kenya’s performance appears to be driven by a strong share of growth in regional markets, which has helped to offset somewhat the weaker performance in global markets. In fact, Kenyan manufacturers of SITC 2-digit products such as chemicals, non-metallic minerals, crude fertilizers and medicinal and pharmaceutical products, have done exceptionally well with regard to exports to the EAC over the last two decades.

Figure 11: Manufacturing exports to the EAC
However, analysis of intensive margin performance using the technique of Hummels-Klenow\textsuperscript{16} (not illustrated here) shows declining intensive margin performance in the export sector. This is also supported by analysis of market share performance of specific products across key manufacturing subsectors (Box 2), where performance is mixed but overall it is clear that Kenyan exporters struggle to compete with Asian competitors in key markets.

\textbf{Box 2: Subsector spotlight – market share performance\textsuperscript{17}}

To get a better perspective on how Kenyan exports are faring in regional and global markets, we assess product-level market share performance in selected subsectors. In the figures below, we assess performance of HS 4 digit manufactured exports to their main market (EU for agri-food; EAC for chemicals; and US for apparel) against the leading international competitor in that market\textsuperscript{18} (Vietnam for agri-food and apparel; India for chemicals) over the period 2000 through 2011. Overall the findings show that performance is mixed, but that relative to main competitors Kenya has fared less well over the past decade.

For agri-food exports – which are dominated by tea, cut flowers, and vegetables – around half of products (33 of 78 products) have experienced growth in market share in the EU, while the other half have experienced decline. But in only 21 of those growing products has Kenya outperformed Vietnam; while Vietnam has outperformed Kenya in 57 products. For chemicals exports, the leading products are metallic salts, pharmaceuticals, soaps, and reactive agents, all of which are primarily exported to EAC and SADC markets. Share performance relative to India is again quite mixed; however, India shows higher market share gains in many more products than does Kenya over the decade.

\textsuperscript{16} See Hummels, D. and P. Klenow (2005); this technique is possible to infer, how big a weighs the products (or markets) by their share in world trade. So, for example, adding pencils to the export portfolio is not the same as adding semiconductors. Specifically, the IM index is computed as follows. Let $K'$ be the set of products exported by country $i$, $X^i_k$ the dollar value of $i$'s exports of product $k$ to the world, and $X^w_k$ the dollar value of world exports of product $k$;

$$IM_i = \frac{\sum_{k'} X^i_{k'}}{\sum_{k'} X^w_{k'}}$$

\textsuperscript{17} Due to the low volume of exports in furniture we exclude the sector from this analysis.

\textsuperscript{18} Excluding China
Finally, for apparel, Kenya’s primary market has been the US, where exports have benefited from AGOA since 2000 and (until 2005) quotas on imports from China and other Asian competitors. Here, Kenya gained share in 18 of 24 products. However, it outcompeted Vietnam in only one of these products, with Vietnam growing share faster in the other 23.

Analysis of market share growth by agriprocessing product in the EU27 market - Kenya vs. Vietnam

Analysis of market share growth by chemicals product in the EAC market - Kenya vs. India

Analysis of market share growth by textiles & apparel product in the US market - Kenya vs. Vietnam

Data source: Comtrade via WITS
However, there are a few products for which Kenyan manufacturing firms have managed to consistently sustain exports to competitive markets – see Figure 12. In addition, Kenya’s apparel sector has been competitive in international markets, generating growth in investment and exports with global supply chains shifting away from China owing to rapidly rising wages. A large part of the success has been a function of trade preferences and it is not clear how well firms in the sector would maintain their competitive position in the absence of the current trade regime – see Box 3.

**Figure 12: Manufacturing exports to the OECD**

![Graphs showing exports to the OECD](Data source: Comtrade via WITS)

**Box 3: Kenya’s apparel sector - competitive, but dependent on trade preferences**

While Kenya long had a domestic textile and apparel sector, major growth of foreign investment and exports arrived with the adoption of AGOA in 2000. Kenya was the first AGOA-eligible country that fulfilled the additional requirements for the apparel provision in January 2001 and could thus access to US market quota-and duty-free with single transformation rules of origin (allowing Kenyan manufacturers to import fabric from outside the region). This, along with the quotas that existed on China and other Asian exporters as part of the
Multifibre Arrangement (MFA), made Kenya an attractive location for producing mass market clothing for the US market. Between 2000 and 2004, apparel export – virtually all going to the US – increased from around US$50m to more than US$300m, and formal employment more than tripled. However, with the end of the MFA after 2004 coinciding with uncertainties over the continuation of AGOA’s relaxed rules of origin, Kenya, like the rest of the African apparel sector, suffered. While exports never collapsed, it dropped and stagnated through the second half of the decade.

More recently, however, Kenya has seen a return of investment and growing exports. Kenya’s apparel exports to the US grew by 29% in 2011, which increased Kenya’s share in total SSA apparel exports to the US from 16% in 2004 to 29% in 2011. Apparel employment in the EPZs expanded by 8% in 2011 as some firms up scaled their operations and two new firms arrived.

**Kenya’s global apparel exports**

![Graph showing Kenya's global apparel exports](image)


So, is this a sign of an opportunity for a revival of Kenya’s apparel sector? On the one hand, this growth in investment and exports reflects the shifting of supply chains in response to rapidly rising wages in China. Africa stands to benefit, and Kenya remains one the better locations for apparel investment in the continent. Yet, while Kenya’s apparel sector is proven to be relatively productive and competes fairly well on wages, its competitiveness remains dependent on its preferential access to the US market. The table below (taken from a study by USAID) shows that Kenya competes relatively favorably even with China and Cambodia on in-factory costs (in this case for a pair of women’s jeans. However, it suffers in two main areas: i) higher costs of fabric and trims (due to lack of available inputs from the region); and ii) high costs of internal transport (and to a lesser degree liner shipping). Together these put Kenyan products 6 to 10 percent behind Cambodian and Chinese products. Yet the latter products face 19 percent tariffs in the US – thus in the end Kenyan lands its products more cheaply than all the peers.

So the story is both good and bad. On the one hand, Kenya clearly can compete with the main global exporting countries under the current trade regime. But in the absence of this regime, it would struggle to maintain its competitive position. It is worth noting, also that Kenya has considerable scope to lower their cost position still further by addressing constraints like electricity. The same study by USAID indicates that electricity accounts for about 20 percent of maintenance costs in the CMT (manufacturing) stage; and with a price per kilowatt-hour (kWh) in Kenya at between US$0.11 and US$0.19 Kenyan manufacturers operates at between 2.75 and 4.75 times the price faced by manufacturers in South Africa and between 1.5 and 2.7 times higher than in China (USAID-COMPETE, 2012). Moreover, electricity cause significant delays and damage to equipment in the factories.
3.4. Firms: Many exporters, low average value of exports

In this section we look briefly at the structure of the export sector in Kenya to understand the size and distribution of exporting firms. This analysis is based on data from the World Bank’s Exporter Dynamics Database, which is comprised of data received from customs authorities across a number of countries. Between the period 2006 through 2008 (the period over which we have data in common across the peer countries), an average of close to 5,000 firms exported from Kenya each year (Figure 13). This is the second highest among the peer countries (third on a per capita basis) and is several times larger than the exporter base in EAC regional comparators. It is worth noting, however, that the relative numbers of exporters in Kenya remains far below that of South Africa and Nicaragua, generally maintaining the pattern we see in other measures of Kenya outperforming regional but not global peers (though in this case, they have far more exporters than Cambodia).

Yet as illustrated in Figure 14a, Kenya’s average export value per exporter is the lowest among all peers; and the median exporter over this period had an export value of only US$19,000 (second lowest among the peers). Kenya’s distribution of exports look, however, generally in line with peers (with the exception of Cambodia on one side and South Africa on the other) as well as with norms of developing and developed countries, with the top 1 percent of exporting firms accounting for just under half of exports and the top 5 percent accounting for over 80 percent of exports. In fact, looking at the distribution within key manufacturing sectors it appears Kenya’s export sector looks a lot like that of more developing countries’ than like regional peers (see Box 4, last figure).
Looking at specific manufacturing subsectors, three points bear mentioning in respect to the discussion in this section. First, Kenya’s large number of exporters is partly explained by the agri-food sector, which contributes around 3,000 exporters (or around 60 percent of the total) – although this high share of agri-food exporters is in line with that of South Africa and actually well below other regional peers. Second, while Kenya’s median exporter is generally among the smallest of peers, its mean exporter is actually relatively large (compared with the overall picture in Figure 14a) in all sectors except apparel.

Export value of mean and median exporter and number of exporters per capita: agri-food (LHS) and chemicals (RHS)

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19 Due to the low volume of exports in furniture we exclude the sector from this analysis.
Thus, it appears that Kenya’s export structure is comprised of normal concentration at the top end, with a ‘long tail’ of very small exporters. One question worth pursuing is whether Kenya’s suffers from a ‘missing middle’ in its industrial structure and in its export sector more specifically. Figure 15 suggests Kenya’s middle tier of exporters accounts for a smaller share of total exports than in all other peer countries except South Africa. However, it is...
also true that in many more developed countries the share of exports accounted for by the limited set of very large firms tends to look a lot like South Africa’s. So an alternative interpretation may simply be that Kenya is ahead of these other peer countries and moving closer toward the structure that is normal in higher income countries. The concentration of exports (value) is even more striking in OECD markets, where 93 percent of the total value of exports is accounted for by the top 5 percent of exporters. Medium and small sized exporters do account for a slightly larger proportion of the market when it comes to regional African countries.

Perhaps, then a more interesting point is that Kenyan exporters across all size categories are substantially smaller than those in peer countries (Table 4) – indeed, across all three categories the export value of the average Kenyan exporter is the smallest among all peers. This may be because the structure of the export sector in Kenya is biased toward sectors with smaller firms. More likely, however, it reflects the fact that Kenyan manufacturing firms are primarily focused on the domestic market, and only export as a secondary and sometimes ad hoc strategy. This is reflected by findings elsewhere in this note that the average share of output that is exported is low across most manufacturing sectors in Kenya compared to peer countries.

Figure 15: Distribution of total exports by proxied size of exporter, average over period 2006-2008

![Figure 15: Distribution of total exports by proxied size of exporter, average over period 2006-2008](image)

**Data source:** Exporter Dynamics Database, World Bank.

**Note:** We proxy the size of exporters by taking the following; ‘small’ = top 5% of exporters by export value; ‘medium’ = exporters between 5% and 25% by export value; ‘small’ = the remaining 75% of exporters

Table 4: Average value of exports (US$) per exporter of each size, average over period 2006-2008

<table>
<thead>
<tr>
<th>Kenya</th>
<th>Cambodia</th>
<th>Nicaragua</th>
<th>Tanzania</th>
<th>Uganda</th>
<th>South Africa</th>
<th>Ratio: Kenya to peers (excl KHM and TZA for small)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg export value- large exporters (top 5%)</td>
<td>$14,372,876</td>
<td>$44,682,807</td>
<td>$16,653,237</td>
<td>$16,750,478</td>
<td>$17,972,894</td>
<td>$47,343,639</td>
</tr>
<tr>
<td>Avg export value- mid-size exporters (5%-25%)</td>
<td>$784,202</td>
<td>$11,196,589</td>
<td>$1,237,748</td>
<td>$1,667,558</td>
<td>$1,317,589</td>
<td>$938,017</td>
</tr>
<tr>
<td>Avg export value- small exporters (bottom 75%)</td>
<td>$22,279</td>
<td>$762,970</td>
<td>$36,634</td>
<td>$261,431</td>
<td>$22,730</td>
<td>$36,331</td>
</tr>
</tbody>
</table>
Data source: Exporter Dynamics Database, World Bank.

Note: Cambodia excluded in ratio analysis (last column) as the size distribution of its export sector appears to be a significant outlier; for the same reason, Tanzania is excluded for small exporters

3.5. Markets: Strong regional orientation with some unexploited potential

Export diversification across markets and products reduces the risk of the country’s export portfolio to partner-specific shocks and volatility in export prices. In terms of markets, Kenya’s manufacturing exports appear to be relatively diversified. Using the Herfindahl-Hirschman index\(^{20}\) of concentration (Figure 19: HHI of product concentration - manufacturing exports) we find Kenya is about average among peers, with only the slightest concentration occurring over the past 15 years. Manufacturing exports are destined to a wide range of markets, however while Kenya’s overall exports tend to be concentrated on EU markets, for manufacturing the regional (EAC) market is by far the most important, accounting for 43 percent of all exports (Table 5). Over the past 15 years, manufacturing exports have shifted increasingly away from the EU and toward the US (driven by apparel) and BRICS markets, particularly India (for agricultural exports and metals).

Figure 16: HHI of market concentration - manufacturing exports

Data source: Comtrade via WITS

\(^{20}\) We use the HHI index to measure concentration across markets. An index level of 1.0 would indicate complete concentration of exports to a single market. As the index moves toward zero it indicates greater diversification.
Table 5: Distribution of Kenya's manufacturing exports across markets
<table>
<thead>
<tr>
<th>Region</th>
<th>1996-98</th>
<th>2010-11</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-27</td>
<td>17.5</td>
<td>8.7</td>
<td>(8.8)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>8.7</td>
<td>1.4</td>
<td>(7.3)</td>
</tr>
<tr>
<td>Italy</td>
<td>3.6</td>
<td>2.2</td>
<td>(1.4)</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>0.6</td>
<td>2.3</td>
<td>1.7</td>
</tr>
<tr>
<td>Spain</td>
<td>0.8</td>
<td>0.4</td>
<td>(0.4)</td>
</tr>
<tr>
<td>Germany</td>
<td>1.1</td>
<td>0.2</td>
<td>(0.9)</td>
</tr>
<tr>
<td>Poland</td>
<td>0.4</td>
<td>0.5</td>
<td>0.1</td>
</tr>
<tr>
<td>Belgium</td>
<td>..</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Rest EU-27</td>
<td>2.4</td>
<td>1.4</td>
<td>(1.0)</td>
</tr>
<tr>
<td>BRICS</td>
<td>2.5</td>
<td>7.9</td>
<td>5.4</td>
</tr>
<tr>
<td>China</td>
<td>0.1</td>
<td>2.0</td>
<td>1.9</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.5</td>
<td>-</td>
<td>(0.5)</td>
</tr>
<tr>
<td>Russia</td>
<td>0.0</td>
<td>0.0</td>
<td>(0.0)</td>
</tr>
<tr>
<td>India</td>
<td>0.5</td>
<td>4.9</td>
<td>4.4</td>
</tr>
<tr>
<td>South Africa</td>
<td>1.4</td>
<td>1.0</td>
<td>(0.4)</td>
</tr>
<tr>
<td>EAC</td>
<td>43.0</td>
<td>43.0</td>
<td>-</td>
</tr>
<tr>
<td>Uganda</td>
<td>23.2</td>
<td>20.4</td>
<td>(2.8)</td>
</tr>
<tr>
<td>Tanzania</td>
<td>14.7</td>
<td>15.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Rwanda</td>
<td>5.1</td>
<td>5.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Burundi</td>
<td>..</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>Other SSA and MENA</td>
<td>6.5</td>
<td>6.6</td>
<td>0.1</td>
</tr>
<tr>
<td>Sudan</td>
<td>1.0</td>
<td>..</td>
<td>(1.0)</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>..</td>
<td>..</td>
<td>0.1</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>0.9</td>
<td>3.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Egypt</td>
<td>0.8</td>
<td>1.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>3.8</td>
<td>2.0</td>
<td>(1.8)</td>
</tr>
</tbody>
</table>
The Index of Export Market Penetration (IEMP) measures the number of markets reached by a particular country’s exports compared to the potential number of markets those exports would reach if they were sold in all possible export markets (i.e. in all countries that import that product). According to the IEMP, Kenya has become marginally better at accessing markets for its export products over the last decade (Figure 17). However, Kenya still reached far fewer export markets based on its export basket compared to South Africa, Vietnam, and Cambodia; it also experienced far slower growth in export market penetration than did these countries. This suggests there may unexploited potential for growth through further market expansion.
The average Kenyan exporter serves between two and three export markets and incumbent exporters derived over 21 percent of their export revenue from markets newly entered in the previous year. In both of these Kenya sits around the middle of the peer group. Kenya generates from more growth from new markets than Cambodia and Nicaragua, which tend to be focused on value chains linked to key growth poles (e.g. US and China); but it relies far less on new markets than Tanzania, Uganda and South Africa.

**Figure 18:** a) Average number of export markets per firm (all exporters); b) Share of new markets in total export value of incumbent exporters (mean, all exporters)

*Data source: Exporter Dynamics Database, World Bank.*
Given that the manufacturing sector is largely focused on regional markets, there are limitations to how many markets Kenyan exporters would normally serve. That said, anecdotal evidence from subsector focus groups (see Box 5) suggests that even at a regional level many exporters lack information on how to access markets and may face barriers to penetrate existing distribution networks. In more global sectors like apparel, many exporters have struggled to shift to EU or regional markets in the face of ongoing uncertainties over the future of AGOA.

Box 5: Subsector spotlight – new market contribution to firm export growth

The figures below show that across manufacturing subsectors, the story presented for exports as a whole broadly holds true. With the exception of agri-foods, the average manufacturing exporter in Kenya serves between one and two export markets, putting Kenya around the average of the peers. With the exception of the apparel subsector, which tends to focus on US and EU markets, the remainder of these manufacturing sectors focus on regional markets, with interviews suggesting most target Uganda and Tanzania as their primary destinations. New market contribution to growth appears slightly lower than peers in most subsectors, with the significant exception of wood furniture.

Average number of export markets served per firm

![Average number of export markets served per firm](image)

Share of new products in total export value of incumbent exporters (mean)

![Share of new products in total export value of incumbent exporters](image)

---

21 Due to lack of firm-level data on new product contribution in the wood furniture sector, it has been excluded from this analysis.
3.6. **Products: Relatively diversified; substantial experimentation but limited aggregate growth contribution from new products**

Kenya’s manufacturing exports are highly diversified at the product level. Using the Herfindahl-Hirschman index\(^\text{22}\) of concentration (Figure 19) we find Kenya has the most diverse manufacturing export basket among all peer countries. And while there has been a slight increase in concentration during the last 15 years (in contrast to most peers), it remains highly diversified. Focusing on the top 10 (of a total of 35) leading SITC 2-digit manufacturing exports sectors (Table 6), we see evidence that the leading manufacturing sectors are growing well above the average rate for the sector overall. As a result, they are becoming increasingly important in the export basket, increasing their share by 10 percentage points in the decade and contributing to this observed slight increase in concentration. Only two of these top ten sectors (non-metallic mineral manufactures and pharmaceuticals) saw declines in their importance within Kenya’s manufacturing export basket.

**Figure 19: HHI of product concentration - manufacturing exports**

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\(^{22}\) We use the HHI index to measure concentration across products at the HS-6 level. An index level of 1.0 would indicate complete concentration in a single product. As the index moves toward zero it indicates greater diversification.
Kenya’s export sector appears to be fairly dynamic with substantial new product experimentation and churning. While the biggest source of both new product discovery and death of existing products is in the agricultural sector, manufacturing also appears relatively dynamic. Figure 20 plots each product’s logged export value against the number of markets reached per export product in 2000 (left panel) and 2010 (right panel). The orange dots in the right panel represent products that are exported in 2010 that did not exist in the country’s export basket prior to 2000. Many of these products have relatively high export values and some have, within a matter of only a few years, reached a large number of export markets. The largest 10 new export products in 2010 include vegetables and tobacco products, namely ‘urad, mung, black or green gram beans’ (7 markets), edible brassicas (11 markets), ‘dried leguminous vegetables’ (6 markets), and products of tobacco (2 markets). They also include textiles and garments, namely baby garments (6 markets), textile furnishing articles (8 markets), and vegetable fibers (24 markets). Finally, we find two iron and steel products among the largest new export products.

Black dots in the left panel represent products that were exported in 2000 but no longer exist in 2010. The most important of these are again food products, namely ‘vegetable saps and extracts of pyrethrum’ which was exported to 24 countries in 2000, followed by uncooked pasta containing egg (2 markets), frozen shrimp and prawns (7 markets), and sugar cane. Other important products include ‘goat or kid skin leather’ (5 markets) and ‘bovine or equine leather’ (7 markets).

Table 6: Main export manufacturing sub-sectors by SITC 2-digit Code, 2000-2011
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>Articles of apparel and clothing accessories</td>
<td>13.5%</td>
<td>18.9%</td>
<td>17.1%</td>
</tr>
<tr>
<td>66</td>
<td>Non-metallic mineral manufactures, n.e.s.</td>
<td>10.0%</td>
<td>8.0%</td>
<td>11.2%</td>
</tr>
<tr>
<td>52</td>
<td>Inorganic chemicals</td>
<td>7.2%</td>
<td>7.2%</td>
<td>13.5%</td>
</tr>
<tr>
<td>67</td>
<td>Iron and steel</td>
<td>5.8%</td>
<td>7.1%</td>
<td>15.6%</td>
</tr>
<tr>
<td>89</td>
<td>Miscellaneous manufactured articles, n.e.s.</td>
<td>6.6%</td>
<td>7.0%</td>
<td>14.2%</td>
</tr>
<tr>
<td>55</td>
<td>Essential oils &amp; perfume mat.; toilet-cleansing mat</td>
<td>4.0%</td>
<td>6.2%</td>
<td>18.3%</td>
</tr>
<tr>
<td>61</td>
<td>Leather, leather manuf., n.e.s.</td>
<td>3.5%</td>
<td>5.8%</td>
<td>18.9%</td>
</tr>
<tr>
<td>54</td>
<td>Medicinal and pharmaceutical products</td>
<td>4.5%</td>
<td>4.2%</td>
<td>12.8%</td>
</tr>
<tr>
<td>69</td>
<td>Manufactures of metal, n.e.s.</td>
<td>3.7%</td>
<td>3.9%</td>
<td>14.0%</td>
</tr>
<tr>
<td>78</td>
<td>Road vehicles (incl. air cushion vehicles)</td>
<td>3.0%</td>
<td>3.5%</td>
<td>15.2%</td>
</tr>
<tr>
<td><strong>Top 10</strong></td>
<td></td>
<td><strong>61.8%</strong></td>
<td><strong>71.8%</strong></td>
<td><strong>15.1%</strong></td>
</tr>
</tbody>
</table>

Data source: Comtrade via WITS

Figure 20: Export discovery and death, Kenya, 2000 – 2010

Data source: Comtrade via WITS
How do the dynamics of product diversification and experimentation play out at the firm level? Figure 21a shows that Kenya performs generally in line with peers (although behind South Africa and Cambodia) in terms of product diversification within individual exporting firms – the average exporter in Kenya exports just over 1 product (at the HS 6-digit level). More importantly, new (HS 6-digit) products contribute just over 17 percent of the export value of incumbent exports in Kenya (Figure 21b). This is a moderately high level of new product contribution and well ahead of Cambodia, Nicaragua, and Tanzania, although behind South Africa and Uganda. New product experimentation appears to be fairly widespread. Of 830 HS 4-digit manufacturing sectors in which Kenya was exporting in 2008, new HS-6 digit products contributed at least 10 percent to aggregate growth in 307 of them (or 37 percent) – this was far ahead of peers – which ranged from 9 percent to 23 percent – with the exception of South Africa (53 percent).

Figure 21: a) Average number HS 6-digit products exported per manufacturing exporter; b) Share of new HS 6-digit products in total export value of incumbent exporters (mean, manufacturing exporters)

Data source: Exporter Dynamics Database, World Bank.
Note: Calculated first at the HS 4-digit level (e.g. average share of growth at 4-digit level that is accounted for by new 6-digit products), then taking weighted average across HS 4-digit products, based on relative export share

Box 6: Subsector spotlight – new product contribution to firm export growth

The figures below show that across all subsectors, Kenya sits around the middle of the peers in terms of the number of HS-6 digit products exported by the average firm. One important point here is that the average number of products for these manufacturing subsectors is well below the average for the export sector as a whole (this is also the case with peers). In terms of new product contribution to firm export growth, Kenya performs relatively well, second only to South Africa in agri-food, third in chemicals (behind South Africa and Tanzania), and first in textiles and apparel.

Average number of HS-6 products exported per firm

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23 Due to lack of firm-level data on new product contribution in the wood furniture sector, it has been excluded from this analysis
3.7. **Sophistication and quality:** Despite concentration in low value adding activities, relatively high sophistication and technology content but failing to compete on quality

Kenya’s exports are strongly concentrated in relatively commoditized, low value adding segments of the market. Figure 22a illustrates this starkly, showing a large trade surplus in primary food exports (along with very small surpluses in processed food and other consumer goods) offset by huge trade deficits (and very low exports) of technology intensive sectors like processed industrial goods, machinery & capital equipment, and transport equipment. Yet stripping out agricultural trade and focusing on exports rather than the trade balance, the composition of Kenya’s small base of manufacturing exports looks perhaps more technologically ‘sophisticated’ than would be expected.
The sophistication of Kenya’s manufacturing sector export basket has increased, in particular since 2004 (Figure 22). It now stands just below the level of South Africa, and second among the peers. While Kenya’s manufacturing sector EXPY is well ahead of most other peers it is worth noting that Vietnam closed the gap on Kenya, having raised its EXPY by more than 20 percent over the decade. This is supported by an assessment of the technology content of Kenya’s manufacturing exports using the Lall (2000) classification (Figure 23), which shows a growing share of low, medium, and high tech exports (mainly at the expense of declining resource based exports). Kenya also compares well to peers in the share of its exports in these categories. See Annex 2 for a discussion of the methodology and interpretation of measures of export sophistication (EXPY).

Figure 22: a) Trade balance by sector (KSh billion), 2011; b) Manufacturing sector export sophistication (EXPY), Kenya vs. peers (2000-2011)


Another route to upgrading and sustaining exports (and of course a route to increasing exports per unit of labor) can be through augmenting the quality of exports and subsequently the value of exports per unit. While Kenya’s manufacturing exports appear to have relatively high technology content or ‘sophistication’, they may not be so competitive from a quality perspective. Using a highly disaggregated database on unit values of exports by sector
to the EU, we construct a measure of the relative quality of each exported product. The results are presented by main subsector in Box 7. It shows very clearly that Kenyan exports have declined in terms of their quality positioning to the EU market both in agri-foods and textiles and apparel, while performance is more mixed (although volumes are very small) in chemicals. Moreover, in both these main sectors, there is no strong evidence of growing share by Kenyan exporters (with some individual exceptions); in fact, more products remained steady or lost share in parallel with declining quality competitiveness.

These findings raise concerns about the sustainability of Kenya’s competitiveness outside of regional markets. They also lend support to previous findings, suggesting that innovation may be an issue constraining competitiveness in the manufacturing sector.

Box 7: Subsector spotlight – quality performance

The figures below relate changes in the relative quality measure to changes in market shares of Kenya’s exports to the EU. The x-axis shows the growth rate of market share (log difference of market shares) between 1996-08 and 2006-08. The y-axis represents the growth rate of the average quality measure over the same period. Each circle represents a product, defined by an 8-digit Combined Nomenclature code, while its size represents the relative importance of each product in Kenya’s export basket in 2006-08. Products above the zero point on the y axis have improved their relative quality positioning compared to other exporters while those below it have experienced declining relative quality. But it is important to not assume that declining relative price is necessarily a sign of lowering quality; it could potential signal that the country’s exporters have improved their productivity and can now sell the same quality product at a lower price. Therefore, we also include the measure of market share (products to the right of the zero point on the x-axis are gaining market share, while those on the left are losing it). If a product is has lower relative price but is gaining significant share it may be a sign of increasing efficiency rather than declining relative quality. The following figures present the results for the agri-food, chemicals, and textiles & apparel sectors respectively.

24 We rely on the COMEXT database from EUROSTAT to characterize the relative unit values of imports in each EU member country. Following Schott (2004), unit values were calculated simply as the quotient of general imports values and quantities. Within any product (8-digit Combined Nomenclature code) for any given year, we then have a distribution of unit values of imports from the different source countries. For each good i and exporting country c in year t we generate a measure of relative quality R as:

\[ R_{itc} = \frac{u_{itc}}{u_{90}^{it}} \]

where \( u_{itc} \) denotes the unit value of the good and \( u_{90}^{it} \) the value at the 90th percentile of the unit value distribution across countries for that product. \( R_{itc} \) is the relative quality of the country’s exports of that good compared to other countries exporting the same good.

25 Due to an insufficient volume of wooden furniture exports to the EU this sector cannot be included in the analysis.

26 Because of data constraints, we cannot replicate the analysis for other export destinations.
3.8. Entry, exit, and survival: Low export survival and inefficient churning

One of the main challenges to sustainable export growth in developing countries is the high rate of mortality of exporters, particularly in the first few years of entering into export markets. Recent research\textsuperscript{27} shows that patterns of export entry and ‘discovery’ in developing countries are similar to that of high income countries. But survival rates of exporters in developing countries tend to be much lower. How does Kenya fare in this respect?

Figure 24a shows the aggregate picture of the average survival rates for individual product-market export flows. It shows the average mortality rate in the first year of an export flow to be more than 55 percent (i.e. less than 45 percent of flows survive the first year), growing to more than 80 percent within three years. In this, Kenya fares better than its regional peers but far behind countries like Vietnam and South Africa. However, a more useful understanding of survival comes from looking at individual exporting firms. Here, Figure 24b shows that Kenya

\textsuperscript{27} See, for example, Brenton, P. and Newfarmer, R. (2009).
has the second lowest survival rate among peers, at 35 percent (i.e. 65 percent of firms that start exporting in year 0 do not export in year 1).

This suggests some problems with barriers impacting firm export survival. Market entry is average which indicates there are no major barriers to entry; on the other hand it is not particularly high, so it is difficult to argue that perhaps barriers to entry are so low that ‘too many’ firms are entering export markets, which would be one possible reason for high export mortality rates. One interesting finding from Figure 24b is that the average export value for new entrants is only around US$5,000, the second lowest among peers and far below countries like Nicaragua (around US$8,600) and South Africa (around US$7,200). This mirrors the earlier findings of the relatively small size of Kenyan exporters across the board and is certainly likely to be one of the reasons for low survival rates. More broadly the finding of low average values of exports and high mortality rates suggests there may be some fundamental factors preventing Kenyan firms from growing to efficient levels, from which low export survival is simply one observable symptom.

---

**Figure 24:** a) Survival rates for aggregate product-market export flows, 2000-2011; b) Firm entry, survival, export value of new entrants-all exporters, 2006-2008

*Data Source: Comtrade via WITS and Exporter Dynamics Database, World Bank.*

Finally, Figure 25 analyzes the impact of churning of export relationships in Kenya versus South Africa over the period 2006 through 2008 (note that this is for all exports, not specifically for manufacturing). In theory, the most productive firms export and they do so with the most productive products. In an efficient market we should see Schumpetarian ‘creative destruction’, with more productive firms and products replacing less productive ones. This should result in constant churning, but with the net positive effect on export growth. The findings for South Africa show that clearly, with substantial entry and exit of firm-product flows, resulting in a net positive number of export relationships and a substantial net positive contribution to growth. But the picture for Kenya is the opposite. First, the level of churning in Kenya is relatively much lower than in South Africa (South Africa has less than five times the number of exporters that Kenya has, but the churning in export relationships is some ten
times the level that is happening in Kenya). Second, Kenya shows a small net negative outcome in terms of total export relationships. And most importantly, Kenya shows a fairly significant net decline in export growth resulting from this churning.

There are several possible interpretations of these findings. One is that there is an inefficient allocation of resources in the domestic economy, whereby the most productive firms are not exporting and/or inefficient firms are not exiting – this could result from situations in which there are firms that are protected in domestic markets. A second interpretation is that firms face few barriers to entering into export markets (or that small firms are forced to enter export markets before they are ready because domestic markets are too small or anticompetitive) and as a result inefficient firms enter (and fail to survive) in export markets. Potentially, it is a combination of these interpretations.28

28 In the absence of more robust data on firm-level dynamics, we present the possible causes here without ranking these in any way.
Figure 25: The net impact of exporter churning in Kenya and South Africa

Data Source: Exporter Dynamics Database, World Bank.

Box 8: Subsector spotlight: firm entry and survival

In the agri-food sector firm entry is average among peer countries but much higher than the Kenyan average rate for the export sector as a whole. The survival rate is, however, relatively low – second lowest among all peers – and the average export value of new entrants is also second lowest among peers. At only US$1,407, it is also far below the average for Kenya’s export sector as a whole.
Chemicals
In the chemicals sector Kenya has the lowest rate of firm entry among peers and also a relatively low survival rate (although higher than East African peers). As in the agri-food sector, the average export value for new entrants is second lowest (to South Africa), at only US$1,342.

Textiles and apparel
In the textiles and apparel sector Kenya had a relatively high firm entry rate into exporting and also a very low survival rate (at only 23 percent versus Kenya’s overall average of 35 percent) – yet this survival rate was actually third best among the peers. Average export value of new entrants was extremely low for all peers other than Cambodia and Tanzania.
Wood furniture
Finally, in wood furniture, Kenya has one of the highest firm entry rates into exporting (67 percent) but also among the lowest survival rates (22.5 percent). New exporters appear to have very low export values across most countries, including Kenya.
3.9. **Summary of main competitiveness challenges**

Summarizing the results of chapter 3, Table 7 outlines the main areas where export competitiveness gaps appear to be most significant, for the manufacturing sector as a whole as well as for the individual subsectors discussed briefly in the chapter. Overall, the primary challenges appear to relate to level, growth & share and to export survival, both of which reflect challenges in the primary competitiveness of Kenya’s manufacturing sector. While some challenges exist with respect to market diversification and product quality, these are perhaps secondary in importance. As a result Chapter 4 will put particular emphasis on the market and supply side factors that typically determine competitiveness with respect to the most important dimensions outlined in Table 7, including factors that affect firm growth, market competitiveness, and survival in export markets, and the factors affecting investment and modernization of the sector.

<table>
<thead>
<tr>
<th></th>
<th>Growth and share (intensive margin)</th>
<th>Diversification (extensive margin)</th>
<th>Sophistication and quality (quality margin)</th>
<th>Entry and survival (sustainability margin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall manufacturing</td>
<td>XX</td>
<td>X</td>
<td>X</td>
<td>XX</td>
</tr>
<tr>
<td>Agri-food</td>
<td>X</td>
<td>X</td>
<td>XX</td>
<td>XX</td>
</tr>
<tr>
<td>Chemicals</td>
<td>--</td>
<td>XX</td>
<td>X</td>
<td>XX</td>
</tr>
<tr>
<td>Textiles &amp; apparel</td>
<td>XX</td>
<td>--</td>
<td>X</td>
<td>XX</td>
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<tr>
<td>Wood furniture</td>
<td>XX</td>
<td>--</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

--- no issues or minor issues

X some competitiveness issues

XX significant competitiveness issues
4. Diagnostics: what are the constraints to manufacturing competitiveness?

4.1. Introduction

The chapter is organized broadly using the Competitiveness Diagnostics framework presented at the beginning of this note, and bearing in mind the emphasis discussed above the analysis covers the following issues:

- **Firm Performance**: Trends in firm performance following the reform period in Kenya, and the degree to which the policy environment is associated with changes in productivity and access to markets.
- **Market access**: the degree to which tariff and non-tariff features act as barriers or facilitators for Kenyan exporters to enter and survive in regional and global markets;
- **The incentive framework for firms**: the degree to which the macro-economic and policy environment (including trade and investment policy, regulation, competition, and governance) facilitates a situation whereby the most productive firms and products participate in trade or whether anti-export biases exist;
- **Firm-level drivers of productivity and investment**: The factors that affect the ability of Kenyan firms to increase their competitiveness by upgrading production processes, introducing new products and innovations, accessing new technologies and entering global supply chains and export markets.
- **Infrastructure and factor markets**: Access to infrastructure related to inputs into the production process, such as power, financial and human capital, are factors that affect the productivity of firms and subsequently, their ability to compete and grow in markets.

Given the broad-based nature of competitiveness, there are a very wide range of factors that have different bearings on the competitiveness of firms. Rather than going through an exhaustive point-by-point analysis, we focus here only the most important factors, and often focus on those that have the greatest impact on export performance. The issues selected in this section of the report are based on an assessment of quantitative metrics, reviews of previous studies on competitiveness, and the result of field interviews with existing and potential exporters. They also focus on the issues that tend to be most closely associated with the competitiveness gaps identified in chapters 2 and 3 of this note.

4.2. Trends in firm performance

Liberalization reforms have affected firm performance in the Kenyan manufacturing sector in a number of ways. Kenyan firms are slowly moving away from the production of intermediate and primary goods to that of final goods. They are beginning to acquire the same quality of labor as those in competitor and comparator countries. However, they are falling short of innovative capability, technology absorption, and capital utilization. Increasingly, firms in Kenya are realizing a number of advantages associated with exports, and more firms are entering the export market. At the same time, firms continue to face a host of constraints that keep them from increasing their competitiveness, particularly an inadequate business climate that hinders the ability of firms to access and maintain competitiveness in globalized markets.
Younger firms are shifting from intermediate to final goods production. Kenya followed a reform process of gradual liberalization, with the first major set of reforms taking place in the 1980s and second round taking place in the 1990s (Gertz 2009). Figure 26 shows that firms that were established in the post-liberalization period depend less on the sale of primary or intermediate goods. Primary good production is usually associated with rent-seeking behavior, whereas moving up the value-chain is associated with value-addition within the production process. Firms that were established before the 1980s were more likely to depend on the sale of such goods - indeed 10 percent of these firms depended on primary/intermediate product sales of 50% or more. In the 1980s, this percentage fell - only 2 percent of new firms depended on sales of primary goods of 50% and more; and for firms that were established in the 1990s, that number was negligible. These changes indicate that liberalization policies have been associated with a production shift towards final goods.

Figure 26: Two-way distribution of firms as per year of establishment and their dependence on sale of intermediate goods.

Older firms lack capital and technology, and integrate vertically with newer firms. Older firms (established before the 1980s) might have continued to follow the same production processes and could have been constrained by finance or by the lack of replacement capabilities. Understanding how older firms have continued to survive over time in Kenya reveals much about changes in the business environment over time. Figure 27 illustrates that firms that started operations before the 1990s tended to sell their products to other firms, suggesting that they were more vertically integrated, or tended to monopolize the intermediate goods’ market. We could postulate that these firms lacked the capabilities to upgrade their technology or capital to produce new goods for the market, therefore being forced to integrate vertically with new firms. Firms that were established in
the 1990s and after, however, were equally likely to enter the intermediate and final goods’ markets.

**Figure 27:** Two-way distribution of firms as per year of establishment and level of vertical integration

![Figure 27](image)


(iii) **Young and qualified management talent in Kenya participate in competitive export markets.** Managers that are highly educated are likely to innovate faster and adapt existing innovation faster. Figure 28 reveals that top management in Kenya usually tends to be skilled and highly educated, with university training and some degree of vocational and post-graduate training. Firms in a competitive business environment tend to produce new products to survive and grow (Nooteboom 1999) by choosing either an innovation strategy or a “fast follower” (Ali 1994) strategy. Scherer and Huh (1992) found that the choice of innovation strategy for a firm had a lot to do with the level of education of its top managers.

In particular, the years of experience of the top manager is highly correlated with the competitiveness of the environment within which the firm functions. This could be since foreign markets are more risky, and have stringent quality requirements and firms face high entry and exit costs for these markets. Figure 29 plots the average years of experience of the top managers in Kenya against their main market for produced goods, compared to managers in other developing countries. It is revealing that in 7 countries out of 9, additional years of work experience is associated with entry and survival in global markets (which also tend to be the most competitive markets). Kenyan firms supplying to foreign markets are managed by people with average years of working experience comparable to Vietnam, Uganda, and Russia. Brazil and South Africa have more
experienced managers compared to Kenya. In general, Wiersema and Bantel (1992) find that firms with young top-management enjoy particular advantages in changing the strategy to meet emerging opportunities and to face competitive pressures. It is instructive that Kenya has a relatively young group of people that account for its top management and this could provide advantages for firms looking to tap national, regional and foreign markets.

**Figure 28: Educational Qualification of top management**


**Figure 29: Relationship between working experience of top manager and main market**
Older firms are more likely to enter competitive export markets. It takes the average Kenyan firm 11 years from its year of establishment to start exporting. In Figure 30, we see that very few firms start exporting at the time of inception, and many firms take a long time to start exporting. Indeed, a significant number of firms do not export at all over the lifetime of the firm. There are notable differences between exporters and non-exporting firms in Kenya (Girma et al 2004, Wagner 2007). Firms that export are generally more competitive than firms that do not export, and thus, an analysis of the kinds of factors that influence the exporting decisions of manufacturing firms in Kenya could provide a guide to policy to enhance export capacity and firm performance over time. Also 14% of firms export indirectly, i.e. through an intermediate firm. Firms often choose to export indirectly to avoid the sunk costs to entry in foreign markets. Zerihun (2012) found that firms that export directly are more efficient than indirect exporters. The research also finds that corruption and lack of finance reduces the probability that the firm will become a direct exporter.

Figure 30: Firms’ decision to start exporting and year of establishment
Manufacturing firms appear to face greater constraints to doing business than services firms. What is particularly notable about the experience of firms in Kenya is how the perceptions of manufacturing and services firms in the same national business environment tend to differ. By and large, a larger proportion of manufacturing firms in Kenya identify infrastructure and policy factors as major constraints to their ability to do business – see Figure 31a. The difference between the two sectors is also manifest in their outcomes – services firms in Kenya seem to outperform their manufacturing counterparts in terms of sales growth, employment growth and growth of labor productivity. This suggests that there could be factors particular to the performance of manufacturing firms in Kenya that deserve further in-depth analysis. The remainder of this chapter will focus on the different factors, related to the external and internal environment the firm and in terms of soft and hard infrastructure that could be driving the low realizations of competitiveness in Kenyan manufacturing. Similar to earlier chapters, the analysis will focus on particular sub-sectors as a lens through which to examine manufacturing more broadly.

Figure 31: a) Share of firms identifying factors as major constraints; b) Self-reported firm performance
4.3. Market access: Preferential access limited by non-tariff barriers

For the most part market access is not a binding constraint to growth in Kenya’s manufacturing sector, although non-tariff barriers remain a problem. Figure 32 shows that the average applied tariff faced by Kenya’s non-agricultural exports is just one percent, one of the lowest among the peer countries. This reflects Kenya’s fortunate position to have tariff and quota free access for most of their main export products to their main export markets. This includes free trade regionally through EAC and COMESA, with Europe through Everything but Arms (EBA), and with the US through AGOA. Kenya’s Market Access OTRI (overall trade restrictiveness index), however, is significantly higher. And while Kenya still faces much lower restrictions than Cambodia and Nicaragua, countries that have been highly successful manufacturing exporters, Kenya’s exporters face substantially higher restrictions than regional peers, including South Africa.

Figure 32: Comparative measures of market access (average 2006-2009)
These restrictions are mainly coming through non-tariff measures (NTMs), including technical regulations, sanitary and phytosanitary measures (SPS), certification requirements, and conformity assessments. In a recent survey on NTMs carried out in 2012, 74 percent of Kenyan exporters reported facing substantial NTMs and other obstacles to cross border trade; two-thirds of these barriers were reported to be imposed by partner countries (with the remaining one-third imposed by Kenya). The sector in which NTMs are felt most strongly is in agri-food, which is by far Kenya’s most important. Here, increasingly stringent demands for certification and traceability throughout agri-food supply chains is raising costs and reducing access for many Kenyan exporters to reach international markets, particularly the EU. Similarly, exporters complain of the strict requirements for chemical certification in the EU. This not only acts as barrier to chemicals sector exports but even to exports of products like apparel that make use of some chemicals in the input process. The wood furniture sector is also facing increasingly significant technical barriers in the form of requirements to certify that wood comes from sustainable sources. These NTMs are exogenous and non-discriminatory, and in a number of cases reflect the inability of Kenyan firms to meet international standards.

Data source: World Trade Indicators

Figure 33: Firms with access to international quality certificates (%)
Findings from the ITC survey also suggest that despite the free trade agreement within the EAC, non-tariff barriers remain a significant problem in the region. Agri-food exporters report common cases of goods (often perishable) being held up at the border often for days or more while samples are taken for testing. Manufacturing exporters also report problems with conformity assessment on regional borders, where products certified by the Kenyan Bureau of Standards (KEBS) are not accepted in EAC partner countries. Figure 33 shows that a relatively low share of Kenyan manufacturing firms have obtained international quality certifications, across each of the four focus sectors. Given that firms in the agri-business, textiles and apparel, and wood industry in Kenya would need to have access to such certificates in order to export, this is an indication of constraints faced in building up levels of quality and innovation in these sectors. As noted above, firms in the wood sector seem to do much worse in terms of international comparisons and seem to have limited knowledge of the sources of quality certification.

4.4. The incentive framework for trade: significant anti-export and anti-manufacturing bias

While data to enable an assessment of industrial production and exports at the level of the firm is unavailable, the analysis in chapter 3 of this note indicates that the share of manufacturing output that is exported remains relatively low in Kenya. This is not surprising given the large and growing domestic economy. But this overall picture masks significant heterogeneity at the subsector level. For example, Kenya’s apparel sector is highly export oriented as are some parts of the agri-food sector. Other parts of the agri-food sector and sectors like

Data Source: Enterprise Surveys, World Bank.
metals, chemicals, and furniture have mainly focused on the domestic economy, although even here there are pockets of strong export focus. Even in cases where firms export, it is clear that in comparison to other countries, exporters in Kenya continue to depend largely upon the domestic market as the major source of demand – see Figure 34.

Figure 34: Firms export market dependency (ratio of exports to sales)

Data Source: Enterprise Surveys, World Bank.

To what degree does Kenya’s macro-economic and broad policy environment promote competitiveness and outward orientation of manufacturing firms? This section reviews briefly the policies that shape the incentive framework of firms, covering the macro-economic environment, trade and investment policy, and domestic policies and institutions (competition, business regulatory environment, and governance).

4.4.1. Macro-economic environment

While Kenya has faced significant external and domestic shocks, including the internal political crisis in 2007-08, the global financial crisis in 2009, a severe drought in 2011, the economy and the manufacturing sector in particular have remained relatively robust. The IMF’s World Economic Outlook presents Kenya as an example of a resilient economy among the emerging and developing economies, given its success in stabilizing growth and
inflation throughout these crises through well-coordinated monetary and fiscal expansion policies. On the other hand, some factors on the macroeconomic front are raising costs for the manufacturing sector, limiting the revenues earned relative to other sectors, and potentially increasing the degree of uncertainty under which manufacturing firms operate. This reduces the relative competitiveness of the manufacturing sector and ultimately affecting growth of outputs and the exports of the sector. Chief among these is the sustained inflation and appreciating real effective exchange rate (REER) over much of the last two decades and, until fairly recently, the volatility of both these factors. High inflation has a particularly significant impact on exporters as producers selling in the domestic market will have greater flexibility in passing on inflation-induced price increases to the consumer. And volatility in inflation makes it difficult for all producers to plan investments.

Figure 35: Kenya’s Real Effective Exchange Rate (CPI based), indexed to 2002

Data source: Economist Intelligence Unit

Figure 35 shows Kenya’s REER has appreciated rapidly between 2002 and 2012 – equivalent to an appreciation of almost 6 percent annually over the decade. Two decades of inflation and of real exchange rate appreciation is likely to have eroded the non-resource manufacturing sector’s export competitiveness. It will also have contributed to creating an anti-export bias and a ‘Dutch Disease’ type effect, where the returns to non-tradables are higher than for tradables. Despite effective monetary policy response on the part of the government, inflation is likely to remain a risk in the future, as exogenous factors such as global energy and food prices are the biggest contributors to inflation in Kenya. Inflation in Kenya is driven by exogenous factors, namely higher global oil prices (a major import) and surging global food prices; as well as by endogenous factors, such as the drought in 2008, and to a lesser extent, an expansionary monetary policy. The Central Bank has responded proactively, by tightening monetary policy (by raising interest rates and higher cash-reserve ratios for banks), but the threat still posed by rising food and energy costs make monetary policy less potent.
Trade and investment policy

Kenya’s trade and investment policy environment impacts exporters by determining the degree to which they can access quality inputs at competitive prices, and by establishing the competitive environment in the domestic market, which in turn shapes firm-level competitiveness and the incentives to export versus serving the domestic market alone. Based on a simple measure of tariff trade restrictiveness, (Figure 36) Kenya’s exporters may face significant barriers to accessing inputs at competitive prices. Across all goods, Kenya’s weighted average applied tariffs are almost 10 percent, easily the highest among peer countries. In both manufacturing and agricultural inputs Kenya is only third highest (behind EAC partners Uganda and Tanzania) but still imposes substantially higher tariffs than non-regional peers. This is most notable in the agricultural sector where Kenya’s average applied tariffs (19 percent) compare to one percent or less in Nicaragua, Vietnam, and South Africa. Figure 36b shows also that Kenya not only poses high average tariffs, but that the dispersion of tariffs across products is among the highest among peers. Again, it is particularly high in agricultural raw materials. Given the challenges of procuring quality inputs within some domestic agricultural value chains, such tariff barriers are likely to undermine the potential competitiveness of the Kenyan agri-processing sector.

Figure 36: a) Weighted average applied tariffs (%), 2010; b) Tariff dispersion, 2010

Data source: WTO TRAINS via WITS
Box 9: The impact of import tariffs on manufacturing firms: examples from focus group discussions

**Wood furniture:**
Kenya’s wood furniture sector faces substantial competition in the domestic market from imports coming from China, Turkey, and Vietnam, among other sources. These imports tend to be much lower in price and are generally perceived to be of inferior quality. Kenyan producers argue that the only way they can reasonably compete with Chinese imports (particularly given the production scale that many Chinese producers are able to achieve) is to focus on the quality segment of the market. To do so, Kenyan producers require access to inputs (metals, plastics, etc.) that are not readily available at the right quality and price point in the domestic market. However, producers complain that high tariffs on imported inputs raise the costs to such a point that they are unable to deliver a competitively priced product on the market.

**Agri-food:**
Agri-processing exporters also complain of high import tariffs (and protected domestic markets, particularly in maize, sugar, and cereals) significantly raising the costs of inputs. A number of firms that were interviewed were considering vertical integration along the supply chain to be able to control the quality of domestic inputs.

Foreign Direct Investment (FDI) has been considered a catalyst for growth and development due to possible spillovers on the local economy, especially in countries with low capital accumulation. Such spillovers can range from innovation (through faster transfer of know-how and state-of-the-art technologies), increases in productivity, sophistication and competitiveness (through increased competition), and a broader product choice for consumers, among others. Kenya’s percentage of FDI inward flows in GDP went up slightly from 0.7 percent in 1990 to 1 percent in 2011 (Figure 37a).

Figure 37: a) FDI inward flows (% of GDP), Kenya and peer countries, 1990-2010; b) Openness to FDI (100= fully open to foreign equity)

However, foreign investment in Kenya’s manufacturing sector has fared relatively poorly in comparison to regional neighbors. While average annual inflows have grown significantly in nominal terms, particularly in the second half of the 2000s, they are far below the levels achieved in Uganda and Tanzania, and growing more
slowly (see Figure 38). Despite being smaller economies, Uganda attracted almost three times more investment projects in manufacturing than did Kenya since 2000, and Tanzania attracted 60 percent more projects. Relative to peers, only Rwanda received a lower level of FDI (as a share of GDP) in recent years; while other peers like Nicaragua, Vietnam and Cambodia, and recently also Ghana (due to oil), show FDI inflows as a share of GDP that were more than ten times higher. Interestingly, much of the investment in manufacturing in other EAC countries is actually coming from Kenyan investors. According to data from the 2010 FDI Survey (KNBS, 2010), 86 percent of all outward FDI stock from Kenya is in the Africa region, with most of this in East Africa – Uganda and Tanzania alone accounted for 64 percent of Kenya’s outward FDI in 2007 and 53 percent in 2008. The fact that relatively large flows of investment are being made by Kenyan investors into EAC neighbors, but little being invested within Kenya’s own manufacturing sector, suggests there are significant supply side barriers affecting the Kenyan business environment that is holding back investment.

Even within the context of Kenya (which overall has struggled to attract foreign investment), manufacturing has underperformed. While manufacturing was by far the most important sector for FDI, accounting for 44 percent of all inflows between 2000 and 2003, its share declined to 16 percent between 2004 and 2007, and then again to 14 percent between 2008 and 2011, by which point manufacturing had fallen behind the construction, utilities, and finance/commercial services sectors in importance. This is not likely due to policy barriers to investment per se, as the economy (like all peers with the exception of Vietnam) is fully open to foreign investment in the manufacturing sector (Figure 37b). However, barriers to investment in several services sectors, notably telecommunications and transport may impact the competitiveness of key inputs and therefore that of the manufacturing sector itself.

Figure 38: a) Annual FDI inflows (US$m) in manufacturing sector; b) Share of FDI inflows to Kenya by broad sector (4-year averages)

Data Source: EAC Statistics (Sourced from Kenya Investment Authority, Uganda Investment Authority, and Zanzibar Investment Promotion Agency - ZIPA and Tanzania Investment Center – TIC)

30 Part of the FDI received by Uganda and Tanzania originates from Kenya. However, since we lack data on country of origin with regards to investment flows between African countries.
4.4.3. Business regulatory environment

From an international perspective, more firms in Kenya complain about business licensing today (28 percent) than in all other comparator countries, with small and large firms as well as foreign firms complaining more (see Figure 39). Kenyan firms have perceived this constraint as more binding, moving from 15 percent of firms complaining about it in 2003 to 28 percent in 2007. The Kenyan government has made substantial achievements in licensing – an ambitious licensing reform program was launched which has led to the elimination of 110 business licenses and the simplification of 8, reducing the time and cost of obtaining building licenses and registering a company. However, starting a business remains extremely cumbersome still – it requires 10 procedures, takes 32 days, costs 40.4% of income per capita and this is much higher than comparator countries. Moreover, the regulatory constraints extend beyond simply licensing. In fact, Figure 39 shows that Kenya performance worst among peers in a number of related regulatory constraints, including the number of annual visits by days officials, the days to obtain an import license, and the share of firms identifying tax administration as a major constraints. The permitting, licensing, and broader regulatory environment in Kenya is also commonly associated with corrupt practices in Kenya, with 25 percent of firms admitting having to pay illegal payments in these and other instances – see Box 10.

Figure 39: Firm perception of business licensing constraints in Kenya and peer countries (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Senior management time spent dealing with the requirements of government regulation (%)</th>
<th>Average number of visits or required meetings with tax officials</th>
<th>Days to obtain an operating license</th>
<th>Days to obtain an import license</th>
<th>Firms identifying tax administration as a major constraint (%)</th>
<th>Firms identifying business licensing and permits as a major constraint (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Saharan Africa</td>
<td>7.5</td>
<td>3.6</td>
<td>24.9</td>
<td>18.8</td>
<td>26.5</td>
<td>16.2</td>
</tr>
<tr>
<td>Ghana</td>
<td>3.2</td>
<td>4.6</td>
<td>6.4</td>
<td>10.3</td>
<td>14.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Kenya</td>
<td>5.1</td>
<td>8.8</td>
<td>23.4</td>
<td>25.9</td>
<td>32.0</td>
<td>28.3</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>9.3</td>
<td>2.5</td>
<td>19.7</td>
<td>13.1</td>
<td>17.3</td>
<td>18.9</td>
</tr>
<tr>
<td>Rwanda</td>
<td>5.9</td>
<td>4.0</td>
<td>6.5</td>
<td>7.4</td>
<td>21.6</td>
<td>8.6</td>
</tr>
<tr>
<td>Tanzania</td>
<td>4.0</td>
<td>3.3</td>
<td>15.9</td>
<td>20.2</td>
<td>19.1</td>
<td>18.3</td>
</tr>
<tr>
<td>Uganda</td>
<td>5.2</td>
<td>2.8</td>
<td>9.3</td>
<td>16.1</td>
<td>23.6</td>
<td>14.6</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4.6</td>
<td>1.5</td>
<td>15.9</td>
<td>22.6</td>
<td>5.3</td>
<td>1.6</td>
</tr>
<tr>
<td>South Africa</td>
<td>6.0</td>
<td>1.8</td>
<td>36.2</td>
<td>30.3</td>
<td>2.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Data source: World Bank Enterprise Surveys

31 Doing Business data 2013
Note: cells highlighted in red indicate areas where Kenya performs among the worst relative to peers
In focus group meetings and interviews held with firms across different sectors, corruption was not always cited as being among the main constraints. It seems that most businesses had resigned themselves to widespread corruption at different stages of the chain of production and supply, and simply factored in the cost of corruption into the cost of doing business in Kenya. As stated by the owner of a chemical plant, ‘*palms have to be greased at every stage*’.

Corruption seems to affect different stages of doing business differently. Dealing with the city council over issues of land, especially for the Juakali sector, can also involve low-level corruption, which has a direct effect on the livelihoods. Inspection visits to the factory by city council staff is often associated with the payment of bribes, increasing the level of uncertainty faced by business. Visits of inspectors were seen to increase along with the election cycle, further squeezing margins in periods of uncertainty. Producers of food products complained about having to deliver samples to the city council, which increased their regulatory burden and lead to opportunities for bribes. Firms encounter stoppages when transporting goods between the factory and the port – while sourcing raw materials or while moving finished products. Red tape at the border was a large deterrent to firms looking to export to regional markets. Each of these transactions adds costs to the supply chain, bringing down the overall level of domestic competitiveness.

The impact of corruption and red-tape is far from uniform across manufacturing firms in Kenya. In fact, small and medium-scale enterprises, those that would find it costliest to internalize the costs, seem to bear the brunt compared to their counterparts in the rest of the continent. Figure 40 paints a stark picture. While the regulatory constraints between large firms in Kenya and large firms elsewhere in Africa are similar, Kenyan SMEs have face a uphill battle on all fronts compared to their African counterparts. They make twice the average number of visits
or required meetings with tax officials, and it takes them almost 3 times as long to obtain an import license. They are also twice as likely to experience at least one bribe, and much more likely to be asked to make informal payments to public officials. While the general situation with regards to regulatory burden and corruption is worse in Kenya compared to the African average, the difference between large firms and SMEs is much more dramatic. This is especially worrying given that small and medium-sized firms account for the largest part of Kenya’s economy – according to Regional Program on Enterprise Development (1999) data, large firms (i.e. firms with more than 17 employees) accounted for a mere 25 percent of the total firms in Kenya.

4.4.4. Competition

In 1980s, Kenya abolished its price control regime and took significant steps towards the introduction of a market economy. In 1989, the Competition Law was passed, and indeed, evidence from the WBES (2007) reveals that Kenyan firms do face competition, from domestic and foreign firms. Figure 42 reveals that over 93% of firms face competitive pressures from domestic firms and 66% of firms face competitive pressures from foreign firms. At the same time 54% of firms that produce only for the domestic market also face increased competitive pressures from imports. Since foreign firms are more likely to introduce new products and use cost-effective production processes, Kenyan firms are under pressure to invest in their technological capabilities to survive over time.

![Figure 41: Competition pressure from domestic vs. foreign](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAA...)


However, in comparison to other countries in the region, Kenya does not rank very high on measures of domestic market competition – see Figure 42, indicating that competitive pressures on firms could increase in the years to come. In our focus group meetings, a number of firms in the agri-business industry, both formal and informal, indicated that the price of inputs such as flour and sugar was kept artificially high owing to the existence of cartels in these sectors. This indicates that policies aimed at reducing anti-competitive behavior in Kenya,
especially in markets for key inputs, could have positive effects on the competitiveness of manufacturing firms, as well as improving consumer welfare.
Finally, there is also the question of how competition from the large informal sector impacts manufacturing firms in Kenya. The World Bank Enterprise Survey (2007) asks firms to what extent they find the practices of competitors in the informal sector an obstacle. The results (Figure 43) indicate significant concerns over informal sector competition in the textiles and apparel and the food sub-sectors.

Data Source: Global Competitiveness Report 2013, World Economic Forum
4.5. Firm-level drivers of productivity and investment

Total Factor Productivity (TFP) relates to differences in outputs that cannot be explained by differences in the use of labor, capital, and other intermediate inputs. Differences in TFP can be due to the quality of workers, quality of management, technology used (so long as it is not embodied in capital), or firm organization. We care about productivity, because we care about firm efficiency.

The first thing to note is that TFP for Kenyan firms rose as a result of capacity utilization. Results for a matched panel of firms between 2003 and 2007 show a 23 percent increase in productivity in Kenya during the four-year period. Nevertheless, by simply adding capacity utilization as an additional explanatory variable, the growth rate declines from a 7 percent annual rate to a 4 percent annual rate, and this is no longer significant. These results show that the use of existing capacity (rather than new investments) accounts for the increase in productivity over time. At the same time, Kenyan firms are less productive than firms in middle-income African counterparts. Results from the WBES (2007) across different countries show that enterprises in Kenya are far less productive than firms in Namibia, in which productivity is almost double that of Kenya, South African firms are three times as productive, and firms in Botswana are 22 percent more efficient than Kenyan firms.

4.5.1. Productivity and capacity utilization

Utilization of a firms’ capacity is an important measure of its productivity and efficiency. Average production costs tend to fall as output rises – so higher capacity utilization can reduce unit costs, making a business more competitive. Therefore, firms usually aim to produce as close to full capacity (100% utilization) as possible. Productive capacity of firms is often determined by its stock of capital. Since capital stock is fixed in the short term, productive firms have an incentive to efficiently utilize all available capital stocks. Boccardo (2004) argues that competitive pressures in the market positively affect the firm’s capacity utilization and finds that firms that export (i.e. sell to more competitive markets) are more likely to make the best use of their available capital, i.e. they have high rates of capacity utilization. Indeed, this result seems also to hold for firms in Kenya. Figure 44 shows that Kenyan firms that focus on international markets have, on average, higher levels of capital utilization than firms that focus exclusively on the domestic market.

Figure 44: a) Relationship between market and capital utilization; b) Firm distribution of installed capacity utilization
The utilization of capacity for Kenyan firms that supply local markets are lower, which could be owing to inelastic input markets and regulatory uncertainties in the market. Firms that supply international markets have the highest levels of capacity utilization, while firms supplying local firms utilize very low levels of their existing capacity. Indeed, capital utilization varies significantly across manufacturing firms in Kenya – see Figure 44. On the lower tail distribution, 10 percent of firms use only less than half their installed capacity and on the upper tail of the distribution, only 10 percent of firms use more than 90 percent of installed capacity. Since capital investments are largely irreversible, the costs to disinvest are very high (Pindyck 1991). Kenya happens to be a capital constrained country and access to finance continues to remain a barrier to starting a business. Boccardo (2004) argues that inflexible use of other factors of production could also affect the level of capacity utilization – for instance, labor market restrictions could negatively affect utilization. For instance, distorted minimum wages and stringent labor laws could negatively affect the optimal use labor in the manufacturing sector, which in turn would affect the productive utilization of capital in Kenya.

A comparison of capacity utilization in Kenya with other countries across different sectors reveals that Kenyan firms seem to lag behind – see Figure 45. This is especially true in the case of manufacturing sub-sectors such as chemicals and textiles and apparel. The results seem to indicate that while Kenyan firms are not too far out from the median compared to countries in South Asia, Easter Europe, and neighboring African countries, low levels of utilization of capacity indicate lower levels of overall efficiency for firms and there remains much scope for improvement.

Figure 45: Capacity utilization (%)
To understand more clearly the factors that affect the utilization of capacity, we run a simple Ordinary Least Squares (OLS) regression of a firm’s capacity utilization on different determinants that serve as a proxy for the effects of regulatory, financial, transport and other infrastructures. To account for the cyclic component, industry-specific dummies at the ISIC four-digit level have been used in all the OLS equations – these dummy variables control for all shocks or changes common to all firms within a given industry. The results of the OLS regression are presented in Table 8.

Table 8: OLS estimation results on determinant of capacity utilization

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of sales reported for tax purposes</td>
<td>-0.05906</td>
<td>-0.03871</td>
<td>-0.03340</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.05193)</td>
<td>(0.05202)</td>
<td>(0.05142)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of capital financed by bank</td>
<td>-0.20058***</td>
<td>-0.20074***</td>
<td>-0.18416***</td>
<td>-0.23011***</td>
<td>-0.23398***</td>
</tr>
</tbody>
</table>

In these and in other regressions, we are unable to control for any issues that might be raised owing to simultaneity and/or endogeneity between the dependent and the independent variables. As such, these results identify the relationships observed in the data, but do not always highlight the underlying mechanisms.
The results show that when capital is being financed by bank credit, then capacity utilization tends to be lower. This could be the case if the allocation of loans in Kenya is being made according to the productivity or performance of firms, or if firms are over-estimating their loan requirements. Stringent regulations also tend to lower capacity utilization, and there is also evidence that senior management time spent dealing with
government again reduces the likelihood to use productive capacity at its optimum level. Economies of scale imply that large firms enjoy the advantages that allow them to achieve high levels of capacity utilization than smaller firms. Firms that are able to acquire technological innovations tend to enjoy a higher level of capacity utilization. Since a significant number of firms in Kenya acquire new technology and given their lower levels of existing technology, this could significantly affect capacity utilization in the future. Insufficient power supply significantly affects capacity utilization – this result is borne out by a number of conversations had with players in the private sector. Movement of goods in Kenya has also been constrained by shortcomings in the transport infrastructure. For example, Omamo (1998) found that lack of adequate road infrastructure in rural Kenya has been a significant barrier for farmers to produce and sell high-yield crops. The results from the regression suggest that firms that ship goods using their own transportation facilities have higher levels of capacity utilization.

Although the coefficient on labor regulation is negative, it does not have a statistically significant effect on capacity utilization. Other studies (Boccardo 2004) have found that exporting firms have higher levels of capacity utilization. But, in the regression results presented, it seems that firms that are exposed to international markets via direct exports do not seem to enjoy statistically higher levels of utilization. This might be since changes in external demand may not have been adequately captured by industry-level fixed effects – implying that the model would need to account for these factors separately. Another explanation could be that exporting firms in the sample tended to belong to special economic zones, since such firms might have different capital utilization patterns over time. Firms that access international markets through indirect exports do in fact seem to enjoy higher levels of utilization. The difference could be explained if firms that export indirectly face lower or zero costs to entry to export markets and they are able to divert production towards the domestic market with lower costs of switching.

### 4.5.2. Productivity, jobs and growth

Cobb-Douglas production functions are commonly used models to decompose productivity-driven growth. WBES surveys record sales or output at the level of the firm in nominal values, and deflators are used to estimate inflation-adjusted, i.e. real, sales over time. In addition, in the absence of domestic firm-level data, expenditure details for capital and other inputs are also only available for 2006.

As a preliminary step to investigate the drivers of firms’ sales growth, a Probit model has been estimated. The WBES (2007) provides information on whether firms’ sales has increased in quantity or not – and this variable is taken as the dependent variable taking a value of 1 if sales increase and 0 otherwise. The results (see Table 9) indicate that firms that acquire technological innovation are more likely to grow over time. This indicates that productivity growth could have been driven by option of new technology leading to higher levels of competitiveness and sales. Exporting seems to have a negative effect on the propensity of firms to increase sales, which suggests that on average firms in Kenya might face difficulties surviving in tough and competitive international markets. Increasing competitive advantage in the global market might require changes in the business climate in the Kenyan economy. Large firms are more likely to grow faster than small firms. In addition,
firms that enjoy a higher share of skilled labor in production also grow faster. Corruption in tax administration is also negatively related to firms’ ability to grow – this is also borne out by results from focus group meetings and interviews wherein firms often identified corrupt practices as a major problem.

Table 9: Probit model result for firm determinant of sales growth

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size(Sales)</td>
<td>0.00031*</td>
<td>0.00035*</td>
<td>0.00028</td>
<td>0.00034*</td>
<td>0.00033*</td>
</tr>
<tr>
<td></td>
<td>(0.00018)</td>
<td>(0.00019)</td>
<td>(0.00017)</td>
<td>(0.00018)</td>
<td>(0.00018)</td>
</tr>
<tr>
<td>Dummy for if firm acquired technological innovations</td>
<td>1.04604***</td>
<td>1.29757***</td>
<td>1.11918***</td>
<td>0.97038***</td>
<td>0.95996***</td>
</tr>
<tr>
<td></td>
<td>(0.21817)</td>
<td>(0.18611)</td>
<td>(0.20977)</td>
<td>(0.19799)</td>
<td>(0.19699)</td>
</tr>
<tr>
<td>Share of production worker received formal training</td>
<td>0.01413***</td>
<td>0.01544***</td>
<td>0.01319***</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.00426)</td>
<td>(0.00380)</td>
<td>(0.00413)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of direct exports in total sales</td>
<td>-0.01073*</td>
<td>-0.00929**</td>
<td>-0.01075*</td>
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<td></td>
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<tr>
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<td>(0.00641)</td>
<td>(0.00424)</td>
<td>(0.00580)</td>
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<tr>
<td>% of sales reported for tax purposes</td>
<td>-0.00938**</td>
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<td>-0.00782*</td>
<td>-0.00760*</td>
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<td>(0.00465)</td>
<td></td>
<td>(0.00415)</td>
<td>(0.00414)</td>
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<tr>
<td>Loss due to power outages as a % of sales</td>
<td>-0.03752**</td>
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<td>-0.03974**</td>
<td>-0.02610*</td>
<td>-0.02614*</td>
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<tr>
<td></td>
<td>(0.01713)</td>
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<td>(0.01618)</td>
<td>(0.01503)</td>
<td>(0.01503)</td>
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<tr>
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<td>Dummy for if firm not hired due labor regulation</td>
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<td>-0.27467</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.35164)</td>
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<tr>
<td>Share of indirect exports in total sales</td>
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<td>-0.00365</td>
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<td>264</td>
<td>258</td>
<td>258</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10 presents the OLS results relating to the determinants of creation of jobs, i.e. hiring of labor. The results indicate that firms that have higher compliance rates with tax administration are less likely to create jobs – the underlying mechanism is not clear. It could be that higher tax compliance is correlated with technological
prowess, or with the level of formalization, which could be affecting the ability to create employment. Indeed, exporting also seems to lower the propensity to hire labor suggesting that firms competing in international markets might be biased towards more capital-intensive means of production. This could be because of global pressures on technological progress in production, or it could be a reaction to labor market regulation in the domestic economy or some combination of the two. Interestingly, access to bank financing is also associated with an increase in hiring. The results also suggest that technological innovations are likely to lead to higher levels of growth in employment.

Table 10: OLS estimation result for firm determinant of employment growth

<table>
<thead>
<tr>
<th>VARIABLES</th>
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<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
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<tr>
<td>Dummy for if firm acquired technological innovations</td>
<td>18.44989***</td>
<td>11.14298*</td>
<td>12.11311*</td>
<td>17.98498***</td>
<td>16.88302***</td>
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<tr>
<td>Share of production worker received formal training</td>
<td>0.02123</td>
<td>0.00859</td>
<td>0.00988</td>
<td>0.00644</td>
<td>0.01090</td>
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<tr>
<td>(0.09215)</td>
<td>(0.09043)</td>
<td>(0.09035)</td>
<td>(0.09366)</td>
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</tr>
<tr>
<td>Share of capital financed by bank</td>
<td>0.32401**</td>
<td>0.33439**</td>
<td>0.34673**</td>
<td>0.23172</td>
<td>0.33189**</td>
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<tr>
<td>(0.16114)</td>
<td>(0.16173)</td>
<td>(0.16189)</td>
<td>(0.16538)</td>
<td>(0.16192)</td>
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</tr>
<tr>
<td>Dummy for if firm not hired due labor regulation</td>
<td>-2.47794</td>
<td>-8.76630</td>
<td>-7.45028</td>
<td>-1.89090</td>
<td>-2.75316</td>
</tr>
<tr>
<td>Dummy for formal audit</td>
<td>-16.89550**</td>
<td>-31.64799***</td>
<td>-30.44352***</td>
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<td>-17.12020**</td>
</tr>
<tr>
<td>(8.23690)</td>
<td>(9.56585)</td>
<td>(9.60656)</td>
<td>(8.71388)</td>
<td>(8.26090)</td>
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<tr>
<td>(8.06113)</td>
<td>(7.80001)</td>
<td>(7.81554)</td>
<td>(8.09729)</td>
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<tr>
<td>Indirect exports</td>
<td>-0.28276**</td>
<td>-0.31091**</td>
<td>-0.31421**</td>
<td>-0.26564*</td>
<td>-0.24899*</td>
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<td>(0.14363)</td>
<td>(0.14391)</td>
<td>(0.14380)</td>
<td>(0.15281)</td>
<td>(0.14538)</td>
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<tr>
<td>Dummy for demand for technical labor</td>
<td>-8.38358</td>
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<tr>
<td>(6.77626)</td>
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<tr>
<td>Firm’s transport cost as a % of sales</td>
<td>-0.35955</td>
<td>-0.41035</td>
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<tr>
<td>(1.15249)</td>
<td>(1.15217)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of sales reported for tax purposes</td>
<td>-0.05933</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(0.13200)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time spent to handle government regulation</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>(0.42631)</td>
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<td></td>
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</tr>
</tbody>
</table>
4.5.3. **Investing in manufacturing improvements**

While production processes and technical innovations have improved over time, less than proportionate firms enter export sector signaling regulatory and compliance capacity issues. The 2007 WBES reveals that a large proportion of Kenyan firms improved their production processes, introduced new products and acquired new technological innovation in the last three years: 66% of firms improved their production processes; 69% of firms introduced new products; and 57% of firms acquired new technological innovations (see Figure 46a). This compares well to international peers, especially in Africa (Figure 47). However, only 7% of firms have become part of global production networks in the last three years of the survey. 14% and 17% of firms improved their production techniques and quality standards respectively.

**Figure 46:** a) Manufacturing improvements undertaken by firms; b) Introduction of new processes and products (% of firms)

**Figure 47:** a) Firms introducing new products (%); b) Firms introducing new production processes (%)

---

<table>
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<tr>
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<th>✓</th>
<th>✓</th>
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<td>371</td>
<td>371</td>
<td>391</td>
<td>412</td>
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<td>0.238</td>
<td>0.242</td>
<td>0.188</td>
<td>0.170</td>
</tr>
</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Moreover, investment tends to vary across subsectors, with many Kenyan firms underinvesting in the regular acquisition of new technologies and innovation. In response to the question about whether the firm had introduced new products or new production processes in the last 3 years, a significant proportion of firms, especially in the textiles and apparel and the wood and furniture sub-sectors, seem to under-invest in both new products and new production process. Focus group meetings highlighted that many firms were operating with production equipment and other technology that was outdated – in some cases equipment was 30 years old or more and had never been replaced since the firm initially started. Inadequate access to and the high cost of finance was cited as one of the major constraints that kept these firms from making regular investments in the technological processes. This not only contributed to lower productivity but has a significant secondary impact in that it consigns firms to operate with machinery that is highly inefficient in the use of energy – with concerns about high electricity costs (see section 4.6) this aggravates the competitiveness challenge of manufacturers.

How have some firms chosen to modernize and why? It is important to understand how some Kenyan firms have been able to make improvements to their manufacturing ability through upgrading of their production processes, introduction of new products, joining global supply chains and by acquiring new technologies. The 2007 WBES data does not have information on how much each firm spends on modernizing its production process and its investments to introduce new products. However, it does provide data on firms’ modernization patterns over the last 3 years. Firms have modernized in four different ways – by making changes in the production process, introducing new products, joining global production networks and acquiring new innovation technology. It is worthwhile understanding why firms choose one way over the next in their quest to modernize, especially since this could provide clues about how successful firms manage to survive and prosper while others do not. A probit model is used to estimate the impact of a variety of factors that could affect the propensity of the firm to choose each one of the four modernization options. The results are presented in Table 11 through to Table 14.

(i) Changing the production process:
The size of the firm matters with regards to their ability to change the production process (See Table 11). The result suggests that large firms are more likely to change their production processes than small firms. Similarly, firms that export are more likely to adapt production processes than firms that supply only the domestic market.
The dummy variable that measures whether firms demand technical labor positively affects the likelihood of changing production processes – indicating that technical changes and need for skilled labor goes hand-in-hand. Firms with formal audit accounts also have a higher likelihood, suggesting that the formal sector has the capacity to introduce changes, an option not enjoyed by the informal sector. Access to finance through banks increases the probability that firms bring about changes to the production process, indicating that bank finance could be cheaper and more cost-effective with regard to making such investments. Stringent labor regulations seem to adversely affect firms’ ability to change the production process. Firms which provide formal training to their workers also seem to have a better chance in making changes to the production process.

Table 11: Probit model results for firms’ determinant to change the production process

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
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<td>Size (Sales)</td>
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<td>0.00020</td>
<td>0.00020</td>
<td>0.00033**</td>
<td>0.00023*</td>
<td>0.00017</td>
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<td></td>
<td>(0.00015)</td>
<td>(0.00014)</td>
<td>(0.00013)</td>
<td>(0.00017)</td>
<td>(0.00012)</td>
<td>(0.00011)</td>
</tr>
<tr>
<td>Dummy for direct exporting</td>
<td>0.15529</td>
<td>0.20794</td>
<td>0.33109**</td>
<td>0.16942</td>
<td>0.31791**</td>
<td>0.28588*</td>
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<td>(0.17340)</td>
<td>(0.17253)</td>
<td>(0.15136)</td>
<td>(0.15862)</td>
<td>(0.15121)</td>
<td>(0.15531)</td>
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<td>% of sales reported for tax purposes</td>
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<td>-0.01136***</td>
<td>-0.00571**</td>
<td>-0.00570**</td>
<td>-0.00708**</td>
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</tr>
<tr>
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<td>(0.00360)</td>
<td>(0.00271)</td>
<td>(0.00267)</td>
<td>(0.00277)</td>
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</tr>
<tr>
<td>Dummy for demand for technical labor</td>
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<td>0.42914***</td>
<td>0.54871***</td>
<td>0.54154***</td>
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<tr>
<td></td>
<td>(0.17452)</td>
<td>(0.15993)</td>
<td>(0.15618)</td>
<td>(0.16061)</td>
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<td></td>
</tr>
<tr>
<td>Share of capital financed by bank</td>
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<td>0.01093***</td>
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</tr>
<tr>
<td></td>
<td>(0.00404)</td>
<td>(0.00346)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy for formal audit</td>
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<td>0.87903***</td>
<td>1.02980***</td>
<td>0.86352***</td>
<td>0.96196***</td>
<td>0.93357***</td>
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<tr>
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<td>(0.21680)</td>
<td>(0.21135)</td>
<td>(0.18305)</td>
<td>(0.18454)</td>
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<td>Loss due to power outages as a % of sales</td>
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<tr>
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<td>(0.01217)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time spent to handle government regulation</td>
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<td>(0.28631)</td>
</tr>
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<td>Share of production worker received formal training</td>
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<td>0.00825***</td>
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<td></td>
</tr>
<tr>
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<td>Power cuts per month</td>
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<tr>
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<td>(0.01710)</td>
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</tr>
</tbody>
</table>
(ii) **Introduction of new products**

The results in Table 12 show that large firms are more likely to introduce new products, perhaps owing to their ability to earn larger rents on new products via quasi-monopolistic competition (Zoltan 1988). In addition, firms that export are also more likely to introduce new products, since such firms need to innovate to be able to survive in global markets. The introduction of new products requires higher inputs of technical labor. New product development is also likely to take place in the formal sector than the informal. This could be explained by credit and other constraints faced by firms in the informal sector, especially in cases where capital requirements for new products are expected to be high. Without access to banking or other sources of credit, this severely limits the ability of informal and less credit-worthy firms to be innovative on the product development side.

<table>
<thead>
<tr>
<th>Table 12: Probit model results for firms’ determinant to produce new product</th>
<th>(1)</th>
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<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
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<td></td>
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<td></td>
<td></td>
</tr>
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<td>Size(Sales)</td>
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<td>0.00027*</td>
<td>0.00037*</td>
<td>0.00026*</td>
<td>0.00023*</td>
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<td>(0.00016)</td>
<td>(0.00019)</td>
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<td>Dummy for direct exporting</td>
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<td>0.35719**</td>
<td>0.05252</td>
<td>0.33516**</td>
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<td>(0.17828)</td>
<td>(0.15520)</td>
<td>(0.17041)</td>
<td>(0.15353)</td>
<td>(0.15685)</td>
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<td>% of sales reported for tax purposes</td>
<td>-0.00589*</td>
<td>-0.00717**</td>
<td>-0.00219</td>
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<td>-0.00272</td>
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<td>(0.00263)</td>
<td>(0.00262)</td>
<td>(0.00267)</td>
<td></td>
</tr>
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<td>Dummy for demand for technical labour</td>
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<td>0.54934***</td>
<td>0.53294***</td>
<td>0.50872***</td>
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<td></td>
</tr>
<tr>
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<td>(0.18385)</td>
<td>(0.17610)</td>
<td>(0.15927)</td>
<td>(0.16264)</td>
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</tr>
<tr>
<td>Share of capital financed by bank</td>
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<td>0.01030***</td>
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<td></td>
</tr>
<tr>
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<td>(0.00429)</td>
<td>(0.00348)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dummy for formal audit</td>
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<td>0.74914***</td>
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<td>0.83343***</td>
<td>0.76615***</td>
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<td>(0.19842)</td>
<td>(0.17927)</td>
<td>(0.18285)</td>
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<td>Loss due to power outages as a % of sales</td>
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<td>(0.01229)</td>
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<td>Time spent to handle government regulation</td>
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<td>0.01089</td>
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</table>
(iii) Entry into global supply chains

Ernst (2002) argues that global production networks are more likely to create international linkages for firms in developing countries, allowing them to access global markets and technologies. These international linkages reduce stickiness in innovation and help firms to learn and adapt existing technologies faster, while being exposed to the latest ideas. A study by the OECD (2011) found that the participation of firms in developing countries in global production networks could vastly improve the productive capacity of the country as a whole.

The results in Table 13 suggest that the larger the size of the firm, the higher the likelihood, since large firms most likely have the scale to deliver to multi-national clients and resources to meet global quality standards. In addition, firms that are able to find financing either through access to credit or own savings for investment opportunities also have the necessary conditions. Since banks in Kenya often tend not to finance firms’ investments, firms that enjoy their own finance are not vulnerable to mismatches in their cash flows and requirements, and global production networks tend to do business with firms with sound and less volatile capital. Entry in global production networks also often requires availability of an adequately trained labor force. Power infrastructure is also a must to entry in global production networks. Corruption in tax administration is negatively related to firm entry to global production networks – perhaps implying that bear a higher burden of corruption are less able to bear the sunk costs of entry into exporting.

Table 13: Probit model results for firms’ determinant to enter global production network

<table>
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<th>(5)</th>
<th>(6)</th>
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<td>0.00014*</td>
<td>0.00013*</td>
<td>0.00010</td>
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<td></td>
<td>(0.00008)</td>
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<td>(0.00007)</td>
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<td>(0.00008)</td>
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<td>Dummy for direct exporting</td>
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<td>1.05458***</td>
<td>0.91339***</td>
<td>0.91861***</td>
<td>0.93411***</td>
<td>1.15492***</td>
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</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
### Table

<table>
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<th>Variable</th>
<th>Coefficient 1</th>
<th>Coefficient 2</th>
<th>Coefficient 3</th>
<th>Coefficient 4</th>
<th>Coefficient 5</th>
<th>Coefficient 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of sales reported for tax purposes</td>
<td>-0.01263**</td>
<td>-0.01002**</td>
<td>-0.01140***</td>
<td>-0.00897**</td>
<td>-0.01233**</td>
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<td>Dummy for demand for technical labor</td>
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<td>-0.24313</td>
<td>-0.23188</td>
<td>-0.16504</td>
<td></td>
<td></td>
</tr>
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<td>Share of capital financed by own</td>
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<td></td>
<td></td>
<td></td>
<td>0.01195**</td>
</tr>
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<td>Share of capital financed by bank</td>
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<td>-0.01332*</td>
<td>-0.01196*</td>
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<td>Dummy for formal audit</td>
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<td>0.22885</td>
<td>0.14622</td>
<td>0.16005</td>
<td>0.11472</td>
<td>0.16884</td>
</tr>
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<td>Power cuts per month</td>
<td>-0.08242*</td>
<td>-0.05806</td>
<td>-0.06004</td>
<td>-0.06241</td>
<td>-0.08348*</td>
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<td>-0.01716</td>
<td>-0.02719</td>
<td></td>
<td></td>
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<td>Dummy for if firm not hired due labor regulation</td>
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<td>0.06504</td>
<td>-0.02203</td>
<td>0.19669</td>
<td>0.09290</td>
<td>0.04665</td>
</tr>
<tr>
<td>Share of production worker received formal training</td>
<td>0.00615**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.00699**</td>
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</tbody>
</table>

Observations: 366, 376, 422, 396, 376, 366

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

### (iv) Acquiring new technology

A firm’s absorptive capacity to acquire new technology depends on its prior experiences and its specific capabilities (Cohen and Levinthal 1990). International comparisons using World Bank Enterprise Data reveal that Kenya lags behind countries in Asia, Eastern Europe and in Africa with regards to access to foreign technology – see Figure 48. Since access to foreign and new technologies can be crucial in increasing innovation and productivity, this indicates that there is significant room for improvement, especially in the case of sub-sectors like agri-business and textiles and apparel.
Figure 48: Firms with access to technology (%)

The results in Table 14 suggest that size is correlated with the ability to acquire technological innovation – that large firms are more likely to do so. This is in line with research elsewhere – see Woolgar (1998) that finds that small firms face a number of constraints that limit their ability to acquire technology. The result also suggests that higher compliance with tax administration actually reduces the likelihood of acquiring new technological innovation. This variable could be a proxy for the costs of meeting tax requirements, which in turn could reduce the incentive to innovate. Introduction of new technologies also requires the availability of adequate power infrastructure. The results also suggest that acquiring new technological innovation creates higher demands for technical labor as well. Inadequate availability of technical skills could create constraints to the ability of firms to innovate. It seems that, on average, firms prefer that banking institutions finance the cost of acquiring new technological innovation. This is intuitive, since firms that acquire new technologies face an element of uncertainty, and banks and financial institutions are in a better position to internalize these risks.

What stands out in each of the manufacturing improvements discussed above is that firms that are larger (in terms of sales) are more likely to improve their production processes, introduce new products, acquire new technology and enter global supply chains. Firms that enjoy a higher likelihood of using better technology and innovations will continue to grow their operations, while increasing productivity and entry into new markets. On the other hand, small and medium-scale enterprises, which should in theory enjoy the largest marginal returns
on manufacturing improvements are also the least likely to be able to make these changes. The firm size
distribution in Kenya is skewed towards smaller firms, indicating that there remain significant barriers to firm
survival and growth over time.

Table 14: Probit model results for firms’ determinant to firm acquire new technological innovation

<table>
<thead>
<tr>
<th>LABELS</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
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<tr>
<td>Size(Sales)</td>
<td>0.00037**</td>
<td>0.00035**</td>
<td>0.00037**</td>
<td>0.00034**</td>
<td>0.00041***</td>
<td>0.00035**</td>
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<td>(0.00015)</td>
<td>(0.00015)</td>
<td>(0.00015)</td>
<td>(0.00015)</td>
<td>(0.00015)</td>
<td>(0.00015)</td>
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<tr>
<td>% of sales reported for tax purposes</td>
<td>-0.01307***</td>
<td>-0.01358***</td>
<td>-0.01296***</td>
<td>-0.01358***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00309)</td>
<td>(0.00310)</td>
<td></td>
<td></td>
<td>(0.00309)</td>
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<td>Dummy for demand for technical labor</td>
<td>0.33625**</td>
<td>0.29252*</td>
<td>0.34475**</td>
<td>0.31523**</td>
<td></td>
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<td></td>
<td>(0.15719)</td>
<td>(0.15324)</td>
<td>(0.15589)</td>
<td>(0.15907)</td>
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<td>Share of capital financed by bank</td>
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<td>0.00580*</td>
<td>0.00562</td>
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<td></td>
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<tr>
<td></td>
<td>(0.00355)</td>
<td>(0.00342)</td>
<td>(0.00342)</td>
<td></td>
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<tr>
<td>Dummy for formal audit</td>
<td>0.95836***</td>
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<td>1.02067***</td>
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<td>0.97970***</td>
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<td>(0.20717)</td>
<td>(0.20770)</td>
<td>(0.18894)</td>
<td>(0.19131)</td>
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<td>(0.01770)</td>
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<td>(0.01833)</td>
<td>(0.01866)</td>
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<td>Time spent to handle government regulation</td>
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<td>(0.00947)</td>
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<tr>
<td>Share of production worker received formal training</td>
<td>0.00475**</td>
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<td>0.00468**</td>
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<td></td>
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</tbody>
</table>

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
4.6. Infrastructure and factor markets

Although Kenya spends 9% of its GDP on infrastructure, a substantial amount comparable to other low income countries in Africa, it translates into just $22 per capita per year in infrastructure spending.33 This is compared to middle-income countries like South Africa that spend up to $550 per capita per year. The government needs to spend substantially more to meet its infrastructure needs - See Table 15. Financing these needs would require a mix of government spending, international donor funds and private sector investment.

Table 15: Indicative financial needs for Kenyan Infrastructure (2006-2015) (US$ million per year)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Capital Expenditure</th>
<th>Operations and Maintenance</th>
<th>Total Needs</th>
</tr>
</thead>
<tbody>
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<td>ICT</td>
<td>485</td>
<td>44</td>
<td>529</td>
</tr>
<tr>
<td>Irrigation</td>
<td>13</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Power</td>
<td>745</td>
<td>274</td>
<td>1,019</td>
</tr>
<tr>
<td>Transport</td>
<td>232</td>
<td>242</td>
<td>474</td>
</tr>
<tr>
<td>Water Supply and Sanitation</td>
<td>1,375</td>
<td>555</td>
<td>1,930</td>
</tr>
<tr>
<td>Total</td>
<td>2,850</td>
<td>1,118</td>
<td>3,968</td>
</tr>
</tbody>
</table>

Data Source: Briceno-Germendia and Shkaratan (2011)

4.6.1. Access to Electricity

The high cost of power in Kenya and frequent blackouts have hindered energy-heavy sectors and negatively impacted their competitiveness. Currently in Kenya, it costs $9,900 and 146 days34 to get an electricity connection for businesses, and only 12% of the country’s predominantly rural population has access to electricity, while 71% of urban dwellers enjoy access. Overall, the installed capacity is meager at only 33 megawatts per million of population – this is about one-tenth the average in Africa’s middle income countries.35 Growing demand, combined with recent droughts that have reduced the supply of hydropower, has led to frequent power interruptions, 53 per year.36 The private sector has suffered as a result, with 70 percent of firms feeling the need to install backstop generation and 3 percent of turnover lost to power outages. It is estimated that the burden of power outages on the economy is as high as 2 percent of GDP (Briceno-Garmendia and Shkaratan 2011) - see Box 11 for examples of the kind of costs borne by firms. Figure 49 shows that Kenyan firms experience more sales losses due to power outages than peer countries, with the exception of Tanzania and Uganda. To overcome the problem, some estimates have suggested that Kenya will need double its current installed capacity and install an additional 1,000 megawatts of generation capacity over the next decade.

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34 Doing Business 2012; World Bank Indicators data (energy)
35 Briceño-Garmendia and others 2009.
Scaling-up access to electricity and ensuring reliable power supply are key elements of Kenya Vision 2030 - the government has an ambitious goal to achieve 40 percent energy access by 2030 by increasing electricity generation capacity to 11,510 MW by then from the current installed capacity of 1,473MW. Increased public investment in energy generation, transmission, and distribution will increase connectivity. The government also needs to encourage increased private financing and investment in the energy sector while ensuring protection for most vulnerable consumers — today the private sector accounts for 12 percent of the power supply.

Figure 49: Average downtime and annual losses from downtime (as % of sales)

Data Source: World Bank Enterprise Surveys; average monthly downtime calculated as average # of outages per month multiplied by the average duration

Box 11: Electricity and firms in Kenya

Access to low-cost and reliable electricity is one of the most oft-repeated issues that Kenyan firms, in both formal and informal sectors, refer to as obstacles to competitiveness. The high cost of accessing electricity has a direct effect on competitiveness by driving up the cost of doing business. This is certainly the case for new firms trying to enter new markets that have limited capital, but this is especially so for existing firms that needs to compete in regional and international markets. As an example, the electricity bill for a large manufacturing company in Kenya was examined. The costs of electricity (combining the high and low rates) were exacerbated by the introduction of various levies – a fuel cost charge, a forex adjustment charge, an inflation adjustment charge, an ERC (Energy Regulatory Commission) levy and a REP (Rural Electrification Authority Projects) levy. These surcharges add up to more than the base rate itself.

The effect of the high costs is aggravated by the unreliable nature of the service. Fluctuations in the provision of power again have a direct impact on competitiveness, by raising the costs of production and by increasing uncertainty. For instance, an informal firm in the food sector noted that power accounted for almost 8 percent of the revenues earned from producing and selling peanut butter. However, grinding the nuts to make the butter is efficient when the nuts are hot – in case of power black outs, the nuts cool down and additional electricity is required for grinding, potentially doubling the cost of electricity.
4.6.2. Access to Finance

As in most countries, firms (particularly SMEs) in Kenya perceive access to affordable finance as a significant constraint to starting a business, expanding, improving productivity, and exporting. This comes despite the fact that the Kenyan financial sector is among the largest and most innovative in Sub-Saharan Africa. In fact for most firms the biggest constraint when it comes to investing for export-oriented projects is more the cost of finance rather than access per se. As shown in Figure 50a, Kenyan manufacturers compare well relative to peers on the share of firms that are making use of bank finance for investments (27 percent) and working capital (13.4 percent); although, as seen in almost all measures assessed in this note, Kenya fares less well in comparison to more established and dynamic markets like South Africa and Vietnam.

Figure 50: a) Use of bank finance for investment and working capital (% of manufacturing firms); b) Spread between deposit and lending rates

Data Sources: a) World Bank Enterprise Surveys; b) Central Bank of Kenya

Micro and small enterprises do face significant barriers to accessing loans. In particular, in line with similar results discussed elsewhere in this note, smaller firms not only face greater constraints compared to their larger Kenyan counterparts, but also compared to smaller firms elsewhere in Africa. 53.1 percent of SMEs in Kenya note that access to finance as a major constraint – this is compared to African average of 47.3 percent. This is in part due to genuine concerns on the part of banks about credit-worthiness – the portfolio of Kenyan banks continue to be beset by relatively high shares on nonperforming loans. An upcoming World Bank study on financing of small and medium-enterprises in Kenya investigates some of these issues in detail. While significant progress has been made in improving credit information and establishing an environment that frees up the flow of lending from banks to SMEs, many gaps remain, including the lack of a moveable collateral registry and the inability of banks to engage in leasing and factoring. Firms also complain of long waiting times and heavy administrative burdens in applying for loans (especially under subsidized schemes) and, perhaps most importantly, the large

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37 Kaume (2012)
difference between deposit rates and lending rates – see Box 12 for anecdotal examples gleaned from focus group interviews. Ultimately it is this last point – loan costs – which are probably the biggest deterrent to accessing finance. Lending interest rates have been in the range of 14 to 20 percent over recent years, with the spread between deposit and lending rates averaging between 8 and 9 percent – see Figure 50b. With such high interest rates, it is difficult for any export-oriented project, particularly in the manufacturing sector, to deliver sufficient returns.

Box 12: Access to finance and firms in Kenya

Problems of access to bank financing constantly came up as a significant constraint in focus group meetings and interviews held with firms across different sectors, whether formal or informal. The problems voiced across different focus group meetings resonated across all sectors, although the particular issues raised were idiosyncratic. One of the commonly cited concerns raised by formal sector firms, whether in the furniture or the agri-business sector, was that banks would not offer loans for investments in machinery and equipment. This is linked to the problem that there is no movable asset registry in Kenya, which makes it difficult for banks to accept machinery as collateral. In rare circumstances where these loans were offered, they did not cover the costs of the purchase. This is especially problematic for firms that are looking to expand production to regional markets, or that are looking to upgrade production processes or to introduce new technology and innovation. Since formal finance cannot be obtained in time, or at all, many firms have to rely entirely on their own savings. For firms in the informal sector, which have very little own savings or collateral, inadequate bank financing is a key factor keeping them from growing and formalizing their business.

In other cases, the high interest rates make servicing costs high, with the implication that firms (especially newer, smaller ones) with a limited cash buffer perceive significant risk in taking on the investment, leading many of them to forego growth opportunities. One example was a firm running a fruit juice business, looking to import new machinery from Italy to expand their scale of production. However, they faced a 24 percent rate on the loan they were seeking, and thus decided to forego the investment. Similarly, agri-business firms looking to expand into new regions and products required heavy investments at the start, which in turn necessitated large cash payments, and they noted that stringent up front loan repayment regulations made entry into new markets very risky. Many informal sector firms that participated in the focus groups attempted to access Government-run youth and women’s funds, but found that they had to jump through many administrative and regulatory hoops to be able to qualify for small amounts of finance.

4.6.3. Access to human capital

Labor requirements for potentially high rates of growth in the manufacturing sector would need to be met by the emerging demographic transition. In particular, to modernize its manufacturing sector and produce new products, Kenya will require skilled and trained labor in the future. The demand for high-quality labor is expected to come as the private sector grows, and necessary investments will be required to ensure adequate supply. Indeed, Kenya has made tremendous progress over the last few decades. Primary school completion rates reached 90% in 2005, compared to just 48% in 1970. Half of primary school graduates pursue secondary education, tertiary enrolment continues to grow rapidly, and the labor market provides reasonable returns to every stage of education.
Indeed, our focus group interviews reveal that firms in Kenya are relatively satisfied with regards to access to the right kinds of human capital, whether skilled or otherwise. While firms do have to engage in significant levels of on-the-job training, they generally saw this as part and parcel of the overall investment in their workforce. The statistics seem to support our qualitative evidence – see Figure 51. A small percentage of firms identify labor regulations as a major constraint compared to their African counterparts, and an even smaller proportion identify access to inadequately trained workforce as a major constraint. In fact a large proportion of workers (62.9 percent) are offered formal training while on the job. However while public spending in education has continued to grow it has not kept pace with the expansion of enrollment rates. Moreover, recent reports have identified significant gaps between the curriculum and labor market needs, both in the university and TVET sectors, suggesting that the education and training system is not delivering the practical skills required for a competitive, modern manufacturing sector.

**Figure 52: Human capital factors in Kenya and elsewhere**

![Graph showing human capital factors in Kenya and elsewhere](image)

*Data Source: World Bank Enterprise Surveys*

Kenya does reasonably well on the rigidity of employment index at 17, doing better than countries like Ethiopia (28), South Africa (35) and Tanzania (54), but far worse than Nigeria (7) and Rwanda (7). However, the country’s minimum wage policy covers all salaried workers and is revised annually. Wages are revised as per the cost of living, measured by the consumer price index, and are fixed based on occupation, sector of activity, and location.

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39 See the report from the taskforce for the re-alignment of the education sector to the 2010 Constitution and Onsomu et al (2009),

40 Rigidity of Employment Index (0=less rigid to 100=more rigid) is the average of the difficulty of hiring index, the rigidity of hours index and the difficulty of firing index. The numbers are for the year 2010 and taken from the World Bank Doing Business Project (link).
In a country with persistently high levels of unemployment, employers could have the power to fix low wages. Therefore minimum wages policies were instituted to protect the laborers’ welfare. One disadvantage of fixing minimum wages higher than the market wage would create more unemployment, or lead to rapid informalization of the existing workforce. The unaccountable nature of the informal sector leave an option open for noncompliance of minimum wages, while formal businesses have to pay higher wages than informal, even at the same level of productivity. High inflationary situation increase the labor cost in formal manufacturing sector, therefore the rational choice for formal sector forces them to steer away from labor-intensive activities. Andalón and Pagés 2008 find that minimum wage legislation in Kenya led to distortions in the labor market, finding it difficult to find formal wage employment and pushing labor into the informal sector. Since developing countries often have an advantage in labor-intensive production owing to the low cost of labor, wage distortions in Kenya could affect firms’ export competitiveness, eroding the country’s advantages over competitors in Asia with regards to the cost of labor.

**Box 13: Labor use in Kenya**

In comparison to countries in South Asia, Eastern Europe and neighboring countries in Africa, it is clear that Kenyan firms use less labor, or that they rank lower in terms of their use of labor. Countries’ average ratio of labor cost to sales is usually a proxy for labor-intensity of the production process. The comparison indicates that in sub-sectors such as wood, textiles and apparel and also food, Kenyan firms seem to utilize low levels of labor. This could be an indication of labor-market mismatches between supply and demand, or increasing use of capital-intensive means of production in these industries compared to other countries.

**Ratio of labor cost to sales**

4.6.4. **Transport and Trade Facilitation**

Last, and most certainly not least, transport and trade facilitation represents a significant barrier to the competitiveness of Kenyan products in international markets. Results from the World Bank Enterprise Surveys highlights that a large share firms across all main subsectors studied in this note identify transport as a major obstacle to their business, far more than in any peer countries surveyed in 2007 Figure 52a.

Kiringai (2011) argues than transport costs have been more detrimental to export competitiveness than tariff barriers, accounting for almost 6-7 percent of value of products (for instance in the coffee industry). The impact comes in several ways. First, in raising the cost for Kenyan products to reach external markets, any advantages Kenya has in terms of factory gate productivities become quickly eroded. Second, exports are impacted by long lead times and lack of reliability – this raises a particular barrier to Kenyan firms joining global value chains. Finally, whether or not firms are producing for international markets, high transport costs raise the price if inputs. The fact that Kenya’s manufacturing exports tend to compete only in regional markets (where transport costs are relatively lower and other regional competitors face similar barriers) and then mainly with products in which there are barriers to competition from distant suppliers (e.g. chemicals, some metals, some foods), is indicative of transport and trade facilitation being a binding constraint.

The World Bank’s Logistics Performance Index (World Bank, 2012c) rates the quality of trade and transport-related infrastructure in Kenya as 2.43 in 2012 (where 1=low and 5=high). This places Kenya only 122nd of 155 countries ranked in the index, and worst among all peer countries (Figure 52b). Looking at the two most important sub-indices that form the LPI, Figure 52 shows that Kenya’s trade and transport infrastructure is also rated among the lowest (rank 130th, higher only than Ghana among peers), while the efficiency of its customs procedures was also worst among peers (and ranked 136th overall).

**Figure 53:** a) Firms identifying transport as a major obstacle, by selected subsectors (%); b) Logistics Performance Index (LPI), 2012
Several bottlenecks exist in the transport and trade facilitation environment in Kenya. Perhaps foremost among them is the port of Mombasa, which is the by far the most important trade gateway in East Africa. Indeed, recent work by the World Bank\(^{41}\) identifies problems at the Port of Mombasa as one of the principal causes for poor performance of the manufacturing sector. One of the main problems at the port is lack of investment. Despite handling less than 800,000 TEUs in a year (which, is little more than the ports of Shanghai and Singapore do in a week), it is highly congested, resulting in massive bottlenecks and delays. This is partly because of underinvestment – the existing port was only designed for a maximum capacity of 450,000 TEUs/year. Beyond this, however, catalogues of inefficiencies have been documented at virtually every stage of the importing and exporting process at the port, including requirements to pay “facilitation fees” – a World Bank study found that drivers could wait five hours or more at the port and its licensed Container Freight Stations to load their trucks, unless they paid such fees\(^{42}\).

Beyond the port, bottlenecks in road transport further raise costs and reduce reliability. These again are a function of hard infrastructure, soft infrastructure and a weak competition environment. Specifically, delays result from insufficient road infrastructure and inefficient rail alternatives, regulatory and administrative barriers (e.g. long delays at weighbridges), and cartel-like activities in the transport sector.

Customs procedures are another source of delay, and one that seems to be particularly problematic for some of Kenya’s key manufacturing export sectors – see Box 14.

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\(^{41}\) World Bank (2010)

\(^{42}\) World Bank (2012a)
One result of these constraints is the high cost of shipping facing Kenyan exporters. The average cost of a 40-foot container for Kenyan exporter going to global markets is US$1,445, one of the highest among peers. This data also helps explain why Kenya can compete more effectively in regional than global markets: if competing with
Vietnam in selling apparel to the US, it faces a huge transport cost disadvantage; but selling to Uganda, Vietnamese (and other global exporters) will face similarly high transport costs once they reach the East African ports; and other EAC competitors (see Uganda in Figure 53) face even (much) higher transport costs than do Kenyan exporters. Perhaps more striking, Kenyan firms face dramatically higher costs of accessing imported inputs than do competitors in Asia and South Africa.

Figure 54: Costs of shipping a 40-foot container: a) export supply chain; b) import supply chain

-data source: Logistics Performance Index (World Bank, 2012c); land supply chain indicates shipment from typical location of producer to customer across regional land borders; port supply chain indicates shipment from typical location of producer to domestic port for export.

The lack of micro-firm-level data limits our ability to identify the extent to which each of these constraints contributes to the competitiveness of Kenyan manufacturing firms. Not only would the use of inputs vary across different sub-sectors, so would the impact of different infrastructure and policy constraints depending on the processes involved in producing and bringing the good to the final consumer. As a quantitative example to illustrate the potential mix of firms’ costs, Quantec data on firms in South Africa was analysed – see Figure 54. Raw materials and intermediate inputs account for the largest share of production costs, but there are significant variations with regard to other costs. Transport and electricity account for an important share of costs in the production of chemicals while labor costs are important for apparel and wood. Identification and in-depth analysis of production inputs and processes, and the associated costs, for Kenyan firms across different sub-sectors could provide useful insights into the value-chain of manufacturing production, allowing targeted interventions aimed at increasing competitiveness.

Figure 55: Average costs in Production
In the absence of data to directly quantify the effects of infrastructure shortcomings on firm-level productivity, we use maps on clustering of economic activity to proxy some of these effects. Productivity at the firm and the sector level could also be influenced by physical and economic geography, in other words the clustering of activity. Figure 55 displays economic activity, measured by total sales, across four districts – clearly, activity seems more concentrated in Nairobi. However, as soon as the costs of electricity are factored in, clustering shifts to Kisumu – indicating that electricity accounts for a much larger fraction of firms’ production in Nairobi than in other regions.

Once more, using a crude, yet simple, measure of labor productivity, relationships between productivity, infrastructure and connectivity can be explored – see Figure 56. Labor productivity dispersion is not very high across the four districts. But once transport costs are accounted for, it is clear that firms in Nairobi reap the returns of lower transport costs, while those in Mombasa lose some of their competitiveness owing to the larger share of transport costs by sales per worker.

Figure 56: a) Clustering of economic activity; b) Clustering controlling for electricity costs

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43 See the seminal work by Krugman (1991).
Figure 57: a) Productivity dispersion; b) Productivity and transport costs
4.7. Summary of Diagnostics

Summarizing the results of chapter 4, Table 16 outlines the findings from the diagnostics exercise, highlighting those issues that appear to be most binding to exporting firms in the manufacturing sector. Note that the emphasis here is on exporting firms, but for the most part the constraints identified are relevant also for firms participating only in the domestic market. Of course, like in any country, there are aspects of each of the areas below that should be improved in Kenya. However, the intention here is to focus on the most binding constraints, and avoid having too much of a “laundry list” of policy issues that need to be addressed.

Table 16: Summary of Diagnostic results

<table>
<thead>
<tr>
<th>Trade competitiveness challenges</th>
<th>Growth and share Survival</th>
</tr>
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<tbody>
<tr>
<td>Market Access</td>
<td>+</td>
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<tr>
<td>Trade, tax &amp; competition policy</td>
<td>X</td>
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<tr>
<td>Regulatory environment &amp; governance</td>
<td>XX</td>
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<td>Access to finance</td>
<td>XX</td>
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<tr>
<td>Intermediates &amp; backbone services</td>
<td>X</td>
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<tr>
<td>Labor markets, skills &amp; technical efficiency</td>
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<td>Transport &amp; trade facilitation</td>
<td>XX</td>
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<td>Innovation</td>
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<tr>
<td>Standards &amp; certification</td>
<td>X</td>
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<tr>
<td>Export &amp; investment promotion</td>
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<tr>
<td>Special customs regimes and SEZs</td>
<td>--/+</td>
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<tr>
<td>Industry coordination</td>
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</table>
5 Conclusions and policy implications

5.1 Summary of main findings

5.2.1 (Trade) competitiveness in Kenya’s manufacturing sector

1 Kenya’s export sector has been in long term decline – but it is not a problem of manufacturing per se

- Among nine peer countries, Kenya had the highest export share of GDP in the 1960s, but this declined steadily in the intervening decades today it has the second lowest share.
- Beyond their output contribution, Kenya’s exports have performed poorly in recent decades by virtually any measure: market share of its global merchandise exports declined from a peak of 0.12 percent in 1970 to around 0.03 percent in 2010; terms of trade competitiveness has deteriorated; and export volatility is high.
- Kenya’s global competitiveness actually weakened further in recent years. Between 2006 and 2011 Kenya’s global export market share fell by 2.5 percent, the worst performance among all peer countries. During this same period, Kenya’s positive trade performance was almost always a function of fortunate geography and product markets, while competitiveness effects were almost always negative.

2 Manufacturing is still a very small player with few champions in export markets

- The share of Kenya’s manufacturing sector in the export basket remains below 30 percent and has not grown in 15 years.
- With manufacturing exports of just US$37 per capita, Kenya stands ahead of East African peers, but its per capita exports are less than one-tenth that of Nicaragua and Cambodia, one-twentieth of Vietnam’s, and one-thirtieth of South Africa’s. Global market share of Kenya’s manufacturing exports is just 0.014 percent, less than one quarter the level of non-manufacturing goods exports and almost 45 times less than would be expected for a country with Kenya’s population.
- Among manufacturing sectors only textiles & clothing and hides & skins show revealed comparative advantage – no other manufacturing comes close.

3 But the manufacturing exports are growing with leading subsectors performing well

- Kenya’s manufacturing sector expanded exports in the 2000s at almost twice the rate of the previous decade, with market share of manufacturing exports grew by almost 30 percent between 1998 and 2011.
- Between 2000 and 2011 Kenya grew its global market share in eight of its ten leading manufacturing export sectors, experiencing declining share only in pharmaceuticals and non-metallic minerals manufactures.
- One caveat to this picture, however, is that Kenya’s global performance appears to be driven by strong share growth in regional markets offset somewhat by weaker performance in global markets – analysis of specific product performance in third country markets shows Kenya struggling to compete against exporters from Asia.

4 Kenya’s exporters are extending their presence in export markets, but manufacturers are highly focused on the EAC market
Kenya has become marginally better at accessing markets for its export products over the last decade. However, Kenya still reached far fewer export markets based on its export basket compared to South Africa, Vietnam, and Cambodia; it also experienced far slower growth in export market penetration than did these countries. This suggests there may unexploited potential for growth through further market expansion.

Manufacturing exports remain highly concentrated on regional markets, with 43 percent going to EAC markets.

5 **Substantial product experimentation and churning at the firm level, with moderate growth contribution**

- Experimentation appears to be fairly widespread. Of 830 HS 4-digit manufacturing sectors in which Kenya was exporting in 2008, new HS-6 digit products contributed at least 10 percent to aggregate growth in 307 of them (or 37 percent) – this was far ahead of peers with the exception of South Africa.
- Overall, new (HS 6-digit) products make a moderate contribution to growth, accounting for just over 17 percent of the export value of incumbent exports.

6 **Higher than expected technology content and ‘sophistication’ but weak quality performance**

- While Kenya’s exports overall are highly concentrated in commodity, low value added segments, Kenya’s manufacturing exports actually compare well to most peers in terms of sophistication (EXPY) and the technology content of exports, with significant growth in medium and high technology sectors in recent years.
- However, Kenyan exports have declined in terms of their quality positioning both in agri-foods and textiles & apparel, while performance is more mixed (although volumes are very small) in chemicals. These findings raise concerns about the sustainability of Kenya’s competitiveness outside of regional markets. They also lend support to previous findings, suggesting that innovation may be an issue constraining competitiveness in the manufacturing sector.

7 **Kenya has a large number of very small exporters**

- Kenya has around 5,000 exporters, the second highest among the peer countries (third on a per capita basis) and is several times larger than the exporter base in EAC regional comparators.
- But exporters are very small – Kenya’s average export value per exporter is the lowest among all peers; and the median exporter over this period had an export value of only US$19,000. This may be because the structure of the export sector in Kenya is biased toward sectors with smaller firms, but more likely it reflects that Kenyan firms tend to focus first on the domestic market, and only export on an irregular basis.

8 **Low export survival and inefficient churning**

- Kenyan exporters have the second lowest survival rate among peers, at 35 percent (i.e. of all firms that start exporting in year 0, 65 percent do not export again in year 1). It also has the second lowest level of average exports for new entrants, at only around US$5,000, far below countries like Nicaragua and South Africa.
- Failure of exporters is not a problem per se; in fact churning is critical to replace less productive with more productive exporters. However, in Kenya’s case the churning process is having the opposite effect,
with churning of export relationships contributing to a 20 percent decline in net export growth in the period 2006-08 (this compares to South Africa, where the process contributed to a 40 percent gain in export growth.

5.2.2 Diagnostics – determinants of manufacturing trade performance

1 Kenya’s manufacturing sector appears to be building a solid base of young, dynamic firms, yet they face significant constraints to growth and competitiveness

- Kenya’s manufacturing sector appears to be strongly bifurcated: its small firms are younger than average (8.5 years versus 13.1 years for Sub-Saharan Africa as a whole44) while its large firms are older than average (25.8 years v 21.6 years for Sub-Saharan Africa as a whole); moreover its small firms are growing faster than average (11.3 percent annually versus 7.4 percent annually for Sub-Saharan Africa as a whole) while their largest firms are growing slower than average (8.0 percent versus 12.2 percent for Sub-Saharan Africa as a whole)45.
- Firms that were established in the post-liberalization period depend less on the sale of primary or intermediate goods and sell more to end customers, which indicates they may be moving toward higher value added production.
- Kenyan firms also show increasingly strong management skills; top management in Kenya usually tends to be skilled and highly educated, with university training and some degree of vocational and post-graduate training.
- Despite the positive dynamics, there appear to be significant constraints impacting the potential for young (most likely small) Kenyan firms to participate and survive in export markets.
- Kenyan manufacturers perceive a substantially worse business environment than their counterparts in the services sector, with particular large gaps perceived in infrastructure (electricity and transport) and governance (corruption and the courts).

2 While barriers to entering export markets are limited, the share of manufacturing output that is exported remains low and few firms participate in international supply chains

- Kenyan exporters face few market access barriers to entering export markets, and in fact face a highly preferential tariff situation in virtually all important markets.
- Non-tariff measures, particularly around standards and certification remain a problem, not least in the EAC market.
- Comparisons with other countries reveal that the ratio of export to sales is low in particular sub-sectors, such as textiles and apparel and wood. This may reflect weak export performance but may also be explained by firm’s having access to Kenya’s large and growing domestic economy.
- Even firms that are exporting tend not to be integrated into regional and global value chains (with obvious exceptions like apparel, limited both in scope and scale)

44 Source for data in this bullet point: World Bank Enterprise Surveys
45 Note that we assume there is a strong correlation between firm age and firm size. Unfortunately, we do not have access to the data to allow us to check this explicitly.
3 The incentive framework is not conducive to competitive exporting in Kenya

- The macroeconomic environment has been broadly stable, but continues to negatively impact manufacturing in Kenya. The most important factor is the sustained inflation and the appreciating real effective exchange rate, which has eroded the manufacturing sector’s competitiveness and likely creates an anti-export bias.

- Kenyan producers and exporters face significant barriers in accessing quality inputs due to relatively high levels of applied tariffs on imported inputs and in some cases weak domestic supply chains and anti-competitive domestic markets (the latter of which also creates an anti-export bias for some of the larger and potentially most competitive Kenyan firms). This in turn lowers their ability to maintain their competitiveness in the face of better-equipped firms, in both domestic and foreign markets. All of these causal factors are most acute precisely in the sector (agri-food) in which Kenyan producers should be in a strong position to compete in international markets.

- Levels of FDI into Kenya remain low, especially in services sectors where they face restrictions, which in turn affect the quality of inputs into the manufacturing production process.

- The business regulatory environment remains problematic and plagued with corruption, with 25 percent of all firms having admitted to making illegal payments to obtain permits and licenses. Focus group meetings also indicate that firms are resigned to low, but persistent levels of corruption and have had to factor these into the cost of doing business.

- Both regulatory burdens and corruption appear to have an unduly strong impact on SMEs in Kenya. SMEs not only face substantially greater obstacles relative to large firms, but they appear to face much greater obstacles from red tape and corruption than do SMEs in peer countries. In fact, the gap between the experience of SMEs and large firms in Kenya in terms of the obstacles created by regulation and corruption is dramatically greater than is the case in peer countries.

4 Changes in firm productivity in Kenya can be driven by different factor conditions

- Firms under-utilize their productive capacity in Kenya, those supplying to local and domestic markets more so than those serving international markets. In fact, only 10 percent of firms utilize more than 90 percent of installed capacity, indicating large scope for improvements in firm efficiency.

- Factors like corruption in tax administration, stringent regulations negatively impact the probability of efficient use of installed capacity.

- Firms that use new innovations and technology tend to see higher increases in sales. However, the average Kenyan firm faces difficulties surviving in international competitive markets and sales seem to be inversely related to exporting.

- Firms that face higher taxes are less likely to create jobs. Firms that export seem more likely to use capital-intensive means of production. And access to bank financing seems to raise the likelihood of hiring labor.

5 Improvements in manufacturing are a function of factors internal and external to the firm

- Firms with access to bank financing, larger firms and exporters are more likely to introduce improvements in their production processes.

- Larger firms, exporters and firms requiring more technical labor inputs are more likely to
introduce new products. Firms in the informal sector and those without access to credit are less likely to do so.

- Introduction of new technology is hindered by corruption, helped by access to technical labor and by bank financing.
- And again, size, availability of credit and regular audits are associated with entry into global supply chains.

6 Infrastructure is a key constraint to firms’ competitiveness

- The cost and the reliability of electricity have a significant negative impact on firm productivity, estimated at 3 percent of total turnover. Up to 70 percent of firms are forced to rely on generators.
- Inadequate access to finance continues to be identified as one of the top constraints to firm competitiveness. This comes despite Kenya having a well performing banking sector, which is among the most innovative in Sub-Saharan Africa when it comes to providing access to finance to the business sector. As with regulatory administration and corruption, SMEs in Kenya are inordinately impacted by constraints in access to finance.
- At the moment labor force skills do not appear to be a binding constraint to competitiveness. Rather the opposite – survey data and focus groups confirm human capital as a relative strength for Kenyan producers. On the other hand, strong labor regulation and a minimum wage tied to inflation creates an incentive for firms to turn to capital-intensive production or to hiring of casual labor – this has contributed to a significant shift toward casualization and informalization of the manufacturing labor force. One risk is that this creates a disincentive to firms investing in training, which (along with declining public investment in education in recent years) could undermine this critical source of competitive advantage for Kenyan producers.
- Transport and trade facilitation remains one of the most fundamental barriers to competitiveness of the manufacturing sector. This appears to be a deep-seated problem, starting with major deficiencies at the port of Mombasa, but extending to significant problems in hard and soft infrastructure, regulatory procedures, and market competition in the transport sector.

5.2 What does this say about the competitiveness of Kenya’s manufacturing sector?

Pulling together the summaries outlined above, we can draw the following conclusions:

Kenya’s manufacturing sector shows several important strengths:

- Dynamic young / small firms: Although the manufacturing sector is very small, there appears to be some growth momentum in recent years. Much of this seems to be coming from younger, dynamic firms that are also moving toward higher value added production. Thus there seems to be evidence of entrepreneurialism in the sector.
- Skilled and productive human capital: Kenya’s labor force appears to have relatively high skills and productivity. Unlike most countries in Sub-Saharan Africa, Kenya far less severe gaps in
skills, particularly at the management and technical levels. Combined with a large available labor force, this offers a potentially significant source of competitive advantage for Kenya.

- **Position in the regional market**: Kenya’s manufacturing sector has benefited substantially from deepening regional integration, particularly through the EAC. It has helped solidify Kenya’s position as the manufacturing hub of the region and offers significant further scope to expand manufacturing, as well as agricultural and services, exports.

- **Increasing capability to innovate**: A significant number of Kenyan firms invest in new products and innovation, resulting in a modest, but significant share of growth coming through new products.

At the same time, exports, growth, and job creation from the manufacturing sector remain disappointing:

- **Manufacturing exports still extremely limited in scale**: Kenya’s manufacturing exports are far below – by a factor of 10 or more – what would be expected for a country of its size and level of development.

- **Exports struggle to compete outside the region and have failed to integrate into global value chains**: Kenya’s manufacturing exports remain, for the most part, competitive only in EAC markets and only in products that are not commonly traded over long distances. With a very limited exception in apparel, Kenya has missed the opportunity to participate in global value chains, and despite preferential access to the US and EU markets it has failed to exploit this advantage.

- **Exports have low quality performance**: With some exceptions, most exports continue to be concentrated in activities with limited scope for value addition. Moreover, Kenya’s exports in global markets appear to be declining in relative quality (without corresponding increases in market share)

- **Exporter are very small**: Individual exporters are also, for the most part, very small, with few champions emerging in the manufacturing sector.

- **Exporters face very high mortality rates**: A relatively low share of firms that enter into export markets are able to survive past the first couple of years.

- **Limited foreign investment**: Finally, while FDI inflows in the manufacturing sector are performing relatively well in the Kenyan context, overall FDI is far below what would be expected in an economy like Kenya’s. This may have a further negative impact on the sector by limited investment and the potential for spillovers of knowledge and technology. It also suggests that the reasons for poor competitive performance discussed here are not inherent to Kenyan firms but rather the environment in which they operate.

The results from the trade competitiveness assessment indicate that the manufacturing sector has a problem with its core competitiveness – on the whole, it is unable to produce at the cost and quality to compete sustainably in international markets. The failure of the manufacturing sector to deliver on
its potential is a function of a number of interlinked constraints. Some, however, appear to be more binding than others:

Primary constraints

1. **Infrastructure – electricity and transport & trade facilitation**: Impacts both SMEs and large firms by impacting the potential to produce competitively and profitably. The lack of cost effective and reliable transport also undermines the potential of Kenyan firms to participate in global value chains. It is worth noting that the situation with both electricity and transport infrastructure is equally problematic in other parts of the EAC, so in practice these constraints have only a limited impact on relative competitiveness in Kenya’s main manufacturing markets today. The impact, however, is on severely limiting growth potential.

2. **Access to affordable finance**: This appears to be a significant contributor to lack of investment in growth and innovation. It prevents both large and small firms from investing in more productive technologies, and thus impacts their ability to produce competitively. It also acts as a serious barrier to growth more generally, particularly impacting SMEs. Finally, given the fixed cost involved in entering into export markets and the increased working capital requirements that tend to result, Kenya’s high cost of finance acts as a significant barrier to export entry and early stage survival. Achieving wider access to affordable financing is a significant challenge. Kenya has already made significant progress in this area and has one of the most innovative banking sectors in Africa. Constraints remain, however, in terms of credit information and the regulatory environment to support more innovative financing tools. Moreover, until Kenya shifts to a macro environment of sustained, lower inflation, bringing finance costs down to a level that would stimulate investments in export oriented manufacturing will be hard to achieve.

3. **Corruption and regulatory constraints**: The results in this note show that these constraints clearly have bigger impact on SMEs, and are likely to be a significant contributor (directly and indirectly) to the observed low survival rates of exporters and growth problems in general.

Secondary constraints

4. **Access to quality, competitively priced inputs**: This is a function both of high external tariffs and weak internal supply chains, as well as anti-competitive issues in domestic market. As noted in the summary, these barriers have a particularly negative impact on the agri-food sector, precisely where Kenya should be most competitive in international markets. This constraint impacts SMEs and large firms in terms of being able to produce cost effective, quality end products. It may also contribute to an anti-export bias.

5. **Quality, standards, and certification**: Again, a range of interlinked constraints combine to create barriers for exporters to access both global and regional markets, contributing to high export death rates. One part of the problem, particularly in regional markets, is the continued existence of unnecessary non-tariff barriers. A second issue is lack of information available to exporters on on quality standards and certifications required in export markets, and the procedures that go along with them. Finally, an aggravating factor is the cost of finance, which acts as a barrier to investing in certification and technology.
5.3 Policy priorities

Based on the discussion above, a number of priority policy issues are proposed to address the key constraints in the manufacturing sector. Most of these have long been part of the discourse in analysis of the Kenyan economy, while others have perhaps had somewhat less attention. Some of these policy recommendations are discussed in some detail below, and a matrix outlining the key details is provided in the Annex. In addition, examples of how other countries facing similar constraints have managed to successfully introduce measures aimed at increasing manufacturing competitiveness have also been highlighted.

Some of the recommendations are economy-wide (such as those pertaining to corruption and the general regulatory environment), while others could be targeted at particular sectors (such as facilitating preferential access to finance for investments in innovation or for SMEs), and some others could be specific to geographical regions (such as investments in industrial zones). The range of interventions varies from those that are related to infrastructure (transport, energy and zones etc) to those that affect the function of regulatory structures (e-governance initiatives, portals for access to information etc). Some of these interventions could be carried out in tandem, for instance industrial zones that coordinate soft (business environment regulations) and hard (energy, roads) infrastructure, while others might require separate focus, such as access to finance and issues related to corruption. The report identifies some of the main policy recommendations, provides information on progress made in different areas, and aims to use these recommendations to build upon the policy dialogue and on-going discussions.

1. Make a renewed push on improving the regulatory environment

One of our most important findings in this policy note is the negative impact of corrupt and regulatory practices on firms, and especially on small firms that are least able to internalize the associated costs. This is related to opportunities for rent-seeking at different points of the production process – tax administration, visits from officials, licensing – and to anti-competitive practices that drive up the costs of inputs. In our focus group interviews and meetings, some firms were particularly concerned about the predictability and transparency in regulation relating to the new two-level devolved government.

a. Vigorously enforce competition laws to curb anti-competitive practices in input markets: Anti-competitive practices impact firms at every level of the production process, from trading across borders (truck cartels raise transport costs) to availability of quality factor inputs (agriculture cartels increase input costs). The Competition Act of 2010 which created the Competition Authority is a laudable achievement. But, without proper enforcement of the law, the Kenyan government’s efforts towards effective antitrust and competition rules will be for naught. For
example, cartels are keeping price of inputs such as flour and sugar artificially high. The World Bank Group’s Competition Policy team has been working with the Kenyan government to pass sector-specific competition regulations (especially in agribusiness) where key markets are still closed to private investment by laws that create statutory state monopolies.

b. **Widen e-governance initiatives in licensing, tax administration to improve transparency in the regulatory environment:** Kenya’s e-government program in 2004 aimed for participatory governance, efficient delivery of information and services to the citizens, and to promote productivity among public servants. The new constitution in 2013 aims to devolve governance to the county level, changing from centralized governance with eight administrative provinces to 47 counties. E-government services already available to Kenyans include applying for public service jobs online, tracking the status of identity cards and passports, checking examination results, submitting tax returns, and report corruption but the use of e-government services has not reached mass proportions, and neither has there been a cultural shift towards transparency and openness.

Pro-poor and inclusive e-governance models are participatory, simple, easily accessible and citizen-centric, with a reach beyond the capital city. Feedback loops and sample surveys on effectiveness of current modes of delivery, government-academia partnership models, increased e-procurement in selected departments, and private sector solutions to create open data repositories are some ideas that have most impact to improve transparency, and in increasing trust in public service delivery.

c. **Improve policy predictability through improved coordination between local and national government:** Perhaps one big concern for investors relates to the impact of decentralization on the policy environment, and devolution of decision-making as a result of the new constitution. While there are no simple policy solutions to this, efforts can be made to improve coordination between national and local agencies and to promote positive competition with respect to the business regulatory environment across provinces.

2. **Invest heavily in improving connectivity**

Constraints in the transport and trade facilitation sector are consistently highlighted as factors bringing down the competitiveness of Kenyan products in regional and international markets. The concerns span a number of dimensions – congestion at the port of Mombasa, regulatory burden of customs and procedures, delays at border posts and inadequate information on tariff, standards and quality certification. In particular, unpredictability in non-tariff measures applied within the EAC were a huge concern to exporters, and identified in some interviews as one of the main reasons underlying the inability of exporters to survive and grow. We suggest a variety of instruments to tackle these constraints, all of which help to bring down the cost of moving intermediate goods to the factory gate and final goods to the final consumer.

a. **Upgrade the Port of Mombasa by investing in port infrastructure and facilities:**

Significant attention is already being focused on trade infrastructure, including an
electronic cargo tracking system and linking this system to the Kenya Revenue Authority’s electronic data interchange system for customs clearance; extended opening hours of customs and port authorities; reduced inspection points between Nairobi and Mombasa and an electronic system allowing traders to submit their documents online. However, the port of Mombasa is still highly congested resulting in massive bottlenecks and delays. This is due to a combination of underinvestment in port facilities, and increased traffic. The recent announcement of a new terminal which is to be constructed at an estimated cost of Sh28 billion, which will double the port’s cargo handling capacity would help ameliorate some of the congestion.

b. **Improve customs and border processes, including adopting fully automated risk management, post-clearance audits for large traders, and a single window for trade:** Delays related to customs procedures were identified as one of the biggest obstacles to doing business in Kenya. A number of reforms are currently in the process of implementation, for instance the introduction of pilot one-stop customs activity at border posts, streamlining of port operations through introduction of scanners, and one-stop for handling import-export documentation. We believe that additional reforms would help to improve even further customs and border procedures.

i. Fully automate risk management systems to ensure smooth flow of risk-free cargo through customs. Armenia, Austria, Jordan and Mauritius are a few of the countries that have recently established automated risk management systems, bringing down the percentage of imports being physically inspected.

ii. Shift from manual front-end to post-clearance audits for large importers and exporters. This measure would need to be introduced after the implementation of a comprehensive risk-based inspections regime. Post-clearance audits should cover a majority of traders to free up resources for high-risk goods. This allows large importers to clear the majority of their cargo with minimal checks. For example, the East African Community’s AEO project authorizes certain importers, clearing agents or transportation companies to import and move cargo within the EAC region with minimal cargo inspections and other customs interventions that can cause delays at customs checkpoints.

iii. Single window for trade. This can be done after the electronic processing of documents, and legislative changes that need to take place to make e-signatures valid. A single window brings together several government agencies and private sector representatives.

c. **Eliminate cartels and improve competition in the trucking sector:** Cartels in the trucking industry have been identified as one of the main reasons behind the high costs of transporting goods. Cartels create a large gap between costs and prices and provide low quality. Decrease in fuel prices, better road infrastructure reduction in cross-border delays and getting rid of corrupt border practices may amount to

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46 Those in the trucking industry would argue, however, that prices are high precisely because of factors such as cross-border delays and corrupt practices, and that the industry is simply passing along the higher costs to firms.
substantial reductions in transport costs, but not transport prices, if the cartels are allowed to operate at will. In such a case in Romania, the World Bank Group is helping the government to create a Cartel Division to strengthen cartel prosecution. Eliminating anticompetitive agreements among professional accountants, for example, is expected to save consumers $24 - $60 million because users will no longer need to pay fees above market prices.

d. **Establish and maintain one stop border posts to significantly reduce wait times at the borders:** Shipping a container from Tokyo to Mombasa costs less than transporting it to neighboring Uganda from the Kenyan coast. Poor road conditions along highways and heavy bureaucracies place heavy toll on export competitiveness—ill weather conditions disrupt access to markets, multiple border stops and duplicative inspections encourage rent seeking behavior, varying and excessive documents and lack of coordination between customs in different countries add time and cost to trade, and they disproportionately affect women traders. One stop border posts significantly reduce waiting times and costs and help comply with the regulatory requirements of the two neighboring countries, reducing waiting times for commercial vehicles, thereby saving costs. The EAC’s One Stop Border Posts bill envisages 15 common border posts, among which the Taveta-Holili border and the Namanga border (Kenya-Tanzania), Busia and Malaba borders (Kenya-Uganda), Mutukula border (Tanzania-Uganda), and Lungalungahorohoro border (Kenya-Tanzania). The proposed One-Stop Border Post Bill would give border control agents the power to enforce the laws of their country in a designated control zone beyond the state’s physical borders. Cooperation to ensure that this bill is passed and implemented will benefit traders and improve exporter competitiveness. At Katuna/Gatuna between Rwanda and Uganda for example, a 24-hour one-stop border post and simplified trade regime have been in force since 2010 (with support from a World Bank Group project).

e. **Establish a trade information portal, improve national standards and certification and strengthen capacity at KEBS:** A well-designed portal would help give traders easy access to an online database of general tariff rates for different products, preferential rates for specific destinations and details about regional or bilateral trade agreements signed by the Government of Kenya. Special focus should be given to the East Asian Community, and other important trading partners. Technical standards and quality certification measures have been identified often as non-tariff measures or technical barriers to trade, especially in regional markets (see Box 15 on Mexico’s experience). Programs to build capacity at KEBS (Kenya Bureau of Standards) would help in harmonizing domestic standards with international, thereby easing access to international markets for Kenyan exporters.

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**Box 15: Mexico – Streamlining NTMs**

The Mexican government embarked on an ambitious reform agenda to streamline its Non-Tariff measures (NTMs) as part of a broader competitiveness agenda in the aftermath of the financial crises that hit Mexico in the 1980s and 1990s. Then NAFTA provided a strong political
anchor to a reform process by making reversion to protectionism politically impossible. The process was institutionalized through the creation of a regulatory-improvement agency. The Economic Deregulation Unit (UDE), created as early as 1989, was placed under the Secretariat of Trade’s authority, but given, by presidential decree, a broader authority than the Secretariat. It was then transformed into a formal federal agency, COFEMER, in 2000. The regulatory reform process was top-down and driven by a small group of 15 to 20 technocrats. These were a mixture of economists and lawyers, many of them trained abroad. The number of licenses, permits, and other information requirements in the commerce and transport sector, for instance, was cut from about a thousand in 1995 to fewer than 400 in 2000, and UDE reviewed more than 500 regulatory proposals between 1995 and 2000. In total, about 90 percent of Mexico’s regulatory framework was affected by the process.

**Data Source:** Salas 2005, IFC 2008

3. **Support ongoing investments in energy with policies to ensure improved distribution and more affordable and predictable tariffs**

Manufacturing firms in Kenya lose nearly 5 percent of annual sales due to electricity downtime, and 70 percent of firms use generator back-ups. The high cost of accessing electricity also has a direct effect on competitiveness by driving up the cost of doing business. One of the reasons why firms are unable to use their existing capacity productively is owing to the unreliability in the availability of power. Therefore, scaling-up the supply of electricity and ensuring reliable power supply are urgent priorities. To maintain and increase the competitiveness of manufacturing firms in Kenya, increased financing and investment in the energy sector will be imperative, while ensuring protection for most vulnerable consumer. Such an increase in financing in electricity generation and distribution could come from the public sector, the private sector, or some combination of the two.

The Kenyan Government has shown some interest in private sector participation in the power sector, including passing the Energy Act of 2006 and the Public Private Partnerships (PPP) Policy in 2011. The passage of the PPP Act of 2013 provides the legal basis for government to partner with the private sector, established a committee to monitor projects and prepare guidelines, and laid out steps to be followed for each project (feasibility studies; pre-qualification; call for tenders and disclosure of the benefits of the project through electronic media). The World Bank is providing financial support to the Government by signing partial risk guarantees for third party power producers in order to increase the quality and availability of power infrastructure in Kenya.

4. **Leverage investments in SEZs/EPZs as a way to deliver improved infrastructure reliability to the export sector in the medium term**

Kenya’s Export Processing Zones have played an important role in supporting export-oriented investors, particularly in the apparel sector. Kenya’s AGOA-oriented apparel sector is based almost exclusively in the Athi River EPZ, along with some additional individually-licensed SEZ factories. While the EPZs have had limited success outside of apparel, they have shown clearly how spatially targeted investment can help overcome many of the challenges facing exporters in the Kenya. Table 17 shows that across key constraints like electricity, licensing and regulatory procedures, and trade
facilitation, firms based in EPZs face a substantially more attractive business environment. Overall, the surveys conducted indicated that firms based in the EPZs rated the overall investment climate in the zones 13 percent higher on average than the investment climate in Kenya as a whole – this difference was third highest among ten countries studied.

Table 17: Business environment comparisons

<table>
<thead>
<tr>
<th></th>
<th>Kenyan Exporters (overall)</th>
<th>Investors in Athi River EPZ</th>
<th>Investors Sameer Industrial Park EPZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity outages per month</td>
<td>5.9</td>
<td>1.2</td>
<td>2.7</td>
</tr>
<tr>
<td>Total electricity downtime per month (hours)</td>
<td>26</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Days to get an electricity connection</td>
<td>41</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Days to clear imports</td>
<td>10.5</td>
<td>8.4</td>
<td>4.0</td>
</tr>
<tr>
<td>Days to clear exports</td>
<td>5.9</td>
<td>1.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: Farole (2011)

Yet the EPZs have had significant limitations. One is that outside of Athi River (Nairobi), they have failed to take off, notably in Mombasa. Second, given the key finding of this note that most exporting firms also rely heavily on the domestic market, the requirement that EPZ firms export 80 percent of their output restricts the investors who can benefit from the EPZs only to those that are almost wholly export-market dependent. In fact, under the new EAC single market, even sales to EAC neighbors no longer count as exports. So the large majority of the domestic manufacturing sector fails to benefit from this program.

In this context, the recent effort by government to establish new Special Economic Zones (SEZ) – which will accommodate export and domestically oriented firms, as well as open up access to a wider range of activities, including services – represents an important initiative to extend the preferential investment climate advantages offered by the existing EPZ program. Indeed, SEZ programs that are held up as the most remarkable success stories — most notably China but also in Mauritius — used their economic zones expressly as a vehicle for broader economic reform, rather than simply as tools to attract investment or grow exports. Industrial zones could help facilitate firms to achieve economies of scale, production efficiencies and to improve export survival rates in a variety of targeted ways.

a. **Promote linkages between SMEs and foreign investors/ large exporters to ensure their participation in global value chains**: There are several reasons for multinationals or large exporters to engage in local procurement from a strategic business perspective –
basic inputs could be more economically sourced locally or local procurement reduces the risks arising from the reliance of foreign inputs in countries with expensive and complicated logistical supply chain could be complicated and expensive. Despite these advantages, local sourcing remains problematic for reasons such as lack of quality standards and local infrastructure, low levels of reliability in terms of quantity and regularity of goods and services, lack of know-how/technology etc. The Kenyan government could provide services to help link local SMEs with foreign investors (see Box 16 on Costa Rica’s experience) and with large exporting firms, for instance through supplier development programs and working with large firms to develop vocational training to build skills, developing capacity building programs for firms to get accredited to service manufacturing facilities abroad, providing incentives for foreign firms to transfer technology to domestic firms, and subsidies for equipment purchases. This would help overcome a number of constraints faced by Kenyan firms in linking to global value supply chains and would also help them to move up the value chain.

**Box 16: Costa Rica – Linking local firms to FDI**

Until the mid-1990s, Costa Rica’s economy was highly concentrated in the natural resources sector (mainly traditional agriculture). With the attraction of FDI, and of Intel in particular, in the 1990s, its export and economic structure changed dramatically. Recognizing that sustainability of growth would require the development of more innovative and value adding domestic firms, the country’s government embarked on a program designed to develop enhanced linkages between local SMEs and MNC foreign investors. The aim was to support the growth of local SMEs and promote technology transfer to facilitate upgrading.

The Supplier Development Project for High-Technology Multinational Companies, a program inspired by Singapore’s Local Industry Upgrading Program was established in late 1999. Its aim was to enhance domestic value added in high-technology MNC production and improve domestic SME competitiveness. This project had three key components: a Pilot Procurement Program, a Comprehensive Information System, and Costa Rica Provee (a domestic supplier development office). Costa Rica Provee engages in detecting the needs of MNCs, identifying business opportunities, and recommending registered suppliers who meet the production, technical, and quality specifications and characteristics required by the business at hand. The work of Provee with domestic suppliers focuses on ensuring their strategic role as MNCs suppliers. For local suppliers, benefits include the following:

- Participation in a supplier network highly qualified by these foreign companies
- Reliance on a team made up of professionals from different fields including chemistry, electronics, materials, marketing, and business management
- No investment requirement
- Permanent project follow-up by Costa Rica Provee’s staff that ensures fulfillment of transnational’s requirements

Specific support provided by Provee includes technical support and diagnosis. Technical support focuses on analyzing goods to be offered to MNCs. This task is undertaken by Provee’s staff, made up of professionals with relevant experience in business development and majoring in engineering, industrial chemistry, and business management. Diagnosis applies evaluation tools aimed at ensuring long-term business relationships, including comprehensive diagnosis in finance,
production, marketing, business management, and environmental and quality systems, among others. The mission consists of facilitating business deals between MNCs and domestic suppliers, thus contributing to enhance value added from Costa Rican industries as well as the country’s global competitiveness. More than 258 domestic suppliers have profited from the direct operation of Costa Rica Provee as well as from access to transnational companies. This has led to improved supply of goods and services, technological specialization of suppliers’ production processes, and increased social benefit resulting from additional daily business.

Source: Spar (1998)

b. **Develop strategies to motivate high performing firms to ensure their sustained growth**: Our findings show that Kenya’s young and dynamic manufacturing firms are growing faster than average and more likely involved in higher value-added production. The data analysis also points to the fact that while Kenya has a large number of exporters, the top 1 percent of exporting firms account for just under half of exports and the top 5 percent account for over 80 percent of exports. This suggests the presence of few large, high productivity firms in the manufacturing for export sector. We hope to use data from the Census of Industrial Census to further substantiate these findings. Research (see Ferrantino, Mukim et al 2012) shows that fast-growing firms, both small and large, can be at the forefront of technological change and can define a country’s competitive advantage. One of the ways in which Governments could help high-performing domestic firms could be through the use of public procurement of domestic content, although this policy comes with its advantages and drawbacks – see Box 17 for more information. SEZs would allow piloting incentive systems with a focus on non-financial support aimed at pushing high-growth firms into new markets and products, and helping them link to firms that show potential. This could include public provision of mechanisms for accessing international markets, providing them with opportunities for upgrading of management capabilities, contacts, networks, and support their activities with business angels.
Box 17: Public procurement preferences to stimulate local industry – legislation, restrictions, key principles

With Kenya’s manufacturing firms facing challenges to grow and to reach the scale at which they can operate efficiently, it is natural to consider the potential role of public procurement in stimulating local industry. After all, government is by far the largest single buyer of goods and services, among them furniture, food, clothing, equipment, and most professional services.

Kenya’s Public Procurement and Disposal Act (2005, revised 2010) allows for exclusive preferences for Kenyan citizens if the funding is 100 percent from the Government of Kenya or a state-related entity, and if the amounts are below Ksh 50 for goods or services and Ksh 200 million for public works. It also sets margins of preference: 15 percent in evaluation of bids for goods manufactured, mined, extracted, or grown in Kenya; 10 percent in cases where locals have over 51 percent of shareholdings; 8 percent in cases where locals have shareholdings below 51 percent but above 30 percent; and 6 percent in cases where locals have below 20 percent of shareholdings. A Presidential Decree in 2012 also set aside 10 percent of government procurement (within certain reserved activities) exclusively for youth businesses. Specific initiatives to deepen the public procurement commitment have also been developed within some sectors, notably furniture.

While local content preferences in general are prohibited by the WTO, government procurement is an exception governed by the plurilateral WTP Government Procurement Agreement. To date, Kenya is not a signatory to that agreement and is therefore not bound to its provisions, which would prohibit such local preferences.

There are of course, drawbacks to local preference programs in government procurement – they are likely to end up costing the government (and therefore the taxpayer) money, they may compromise quality, and they open up the risks of corruption or perceptions of favoritism. The latter point can be addressed through increasing transparency – for example through initiatives like the Market Price Index that has been implemented by the PPOA. The other challenge is to ensure that the de jure legislation on public procurement preference actually translates to higher local procurement, and more importantly that this procurement is directed in such a way that it contributes to achieving the aims of improving SME stability and scaling up and (presumably) local value addition and job creation. Some key principles toward achieving this are the following:

- **Defining clearly what is “local content”:** Local can meet many things, particularly when government procurement is taking place at the subnational level – trying to define local more narrowly than at the national level may raise significant problems with quality of goods and services; Even more importantly, “content” needs to be considered carefully – what is more local, a foreign investor manufacturing locally and employing Kenyans or a local firm that imports virtually everything and sells on to the government?
- **Investing in awareness raising:** Many programs have failed because local firms are not aware of the procurement opportunities that exist, and not aware of the requirements in terms of standards, delivery times, etc. Putting in place effective information dissemination is a critical component to any local procurement program. Databases and other outreach should also be supported by networking (e.g. “meet the buyer” events)
- **Incentives need to be aligned for local procurement agents and they also need to be aware and trained:** Procurement agents tend to be risk averse and are unlikely to use local SMEs if there is a risk on non-delivery. Therefore it is critical that local procurement agents have the incentive to deliver on the program, are aware of the
existence of SME suppliers, and understand their specific needs.

- **Support to SMEs to deliver against needs**: SMEs are also likely to require specific support in terms of meeting quality standards as well as training on procurement processes, financial management, etc.

- **Unbundling procurement into smaller lots**: As a large buyer, government tends to purchase at a scale that few SMEs are able to handle, at least in initial stages. Therefore, specific effort needs to be made to establish procurement at a reasonable scale to enable SMEs to participate (while acknowledging also the intention to use the program to help existing firms to scale up).

- **More accommodating payment terms**: SMEs also tend to struggle with long payment terms and (especially) payment delays that often come from government. Successful programs usually include some flexible payment terms including partial upfront payments, quick repayment (10-15 days in some cases) or access to working capital finance.

- **Graduation policies**: The point of preference programs is to catalyze local firms not to make them dependent on government as a customer. Therefore, firms who have been successful should eventually stop receiving preferences and ‘graduate’ from the program. This needs to be considered from the start and specific criteria established.

- **Monitoring and evaluation**: Linked to the above issue, the overall procurement should have a strong monitoring and evaluation effort built it, to ensure it is meeting its objectives and maintaining fiscal discipline.

5. **Improving access to credit to enable firms to invest in growth, innovation, and export participation**

Small firm size, low levels of investment in upgrading production capacity and technology, lack of investment in quality, lack of creation of formal employment, and limited capacity for export survival are all linked closely with the challenges of obtaining affordable credit. Some policy options to improve the access to finance for Kenyan manufacturing exporters are enumerated below.

a. **Target stable inflation rates and ensure competitive, relatively stable exchange rates**: Kenya entered 2013 with inflation levels of 4.5 percent which allowed interest rates to drop to 9.5 percent compared to mid-2012’s peak of 20 percent. Inflation is likely to remain a risk in the future, as exogenous factors such as global energy and food prices have been important determinants in the past. Furthermore, the real exchange rate is 34 percent stronger than a decade ago. The Central Bank of Kenya (CBK) has responded proactively, by tightening monetary policy (by raising interest rates and higher cash-reserve ratios for banks), but the threat still posed by rising food and energy costs make monetary policy less potent. Adhering to the medium term target of 5 percent, with continued vigilance in monitoring inflation and lowering the public debt-to-GDP ratio will remain critical to keep inflation in check.

b. **Facilitate innovations to help increase access to credit, including initiatives to promote the use of movable assets as collateral**: As in most countries, the problem of access to finance is one for SMEs: 53.1 percent of SMEs in Kenya note that access to finance as a major constraint, compared to 13 percent of large firms. High interest rates also make loan servicing a significant burden on firms and, most importantly, raises the perception of investment risk, particularly for firms with limited cash buffers. Our findings suggest
that small firms in Kenya have the potential to be dynamic and relaxing finance constraints could help them transform into larger, more competitive firms. At the same time, we find that firms have trouble entering global supply chains and making new investments in technology. Having in place systems that allow firms to make longer term investments would help them realize some of their potential - see Box 19 on Singapore’s experience. More broadly, Kenya can continue to improve its credit information systems, which could ultimately narrow the current lending spread. Moreover addressing regulatory barriers that prevent banks from engaging in leasing and in factoring would open up substantial additional potential for financing firms’ working capital, which is particularly critical for exporting firms that tend to face longer payment terms.

In focus group discussions, formal firms, whether in the furniture or the agri-business sector, complained that banks would not offer loans for investments in machinery and equipment. This is problematic for firms looking to expand production, or that are looking to upgrade production processes or to introduce new technology and innovation. Establishing a moveable collateral registry would allow firms to use machinery and other capital stock as collateral, promoting investments in new technologies. Ghana set up a centralized collateral registry in 2010, with aim to ensure more loans from banks against movable assets. Most recently, Croatia, and China have set up centralized and electronic collateral registries, allowing creditors to check for existing liens.

**Box 18: Singapore – Financing SME growth and internationalization**

The Government of Singapore has made strong efforts to facilitate the expansion of domestic SMEs into international markets, including through overseas investment. These efforts include, among others, financing, tax incentives, and grants. Among the key programs are the Growth Financing Programme and the Internationalization Finance Scheme.

The Growth Financing Programme, run by the Singapore Economic Development Board (EDB) makes long-term equity investments in early stage SMEs that are seen to have the potential to become globally competitive. Companies that have successfully completed product development and can show some initial “customer traction” can apply for equity financing for overseas market expansion through the program, with the potential that every S$2 raised by the growth company from third-party investors will be matched by S$1 from EDB, subject to a maximum of S$1,000,000 (and with a minimum third-party investment of S$500,000).

The Internationalization Finance Scheme, run by International Enterprise Singapore, facilitates financing for fixed investments abroad or confirmed overseas projects, including loans, guarantees, and asset-based financing (e.g., leasing). The amount of financing available under the scheme recently was raised from S$15 million to S$50 million. To attract private financing, the government of Singapore assumes 80 percent of the risk of financing. The program is open to Singapore-based firms with less than S$300 million in turnover.

The program has been effective in facilitating outward expansion by Singaporean SMEs. According
to a government survey of SMEs in 2009, 69 percent had established overseas ventures. Data from
the 2010 Start-up Enterprise Survey shows that 25 percent of Singaporean start-ups now have
overseas revenue.

November 9, 2011).
Note: $S1 = US$0.784 as of September 21, 2011.

These recommendations are also related to two supplementary pieces of analysis on the Kenyan
economy – an assessment of the needs of the micro- and small-scale enterprises in Kenya, and an
innovation survey of a sample of manufacturing and services firms in Kenya. These studies find that
constraints related to access to finance and the burden of regulation affect the ability of firms to grow
and to innovate. This is in line with the findings in this study where significant product churn has not
converted into sustainable new product driven growth, suggesting relatively narrow product switches
and shifts rather than through more substantial innovations. Since Kenyan firms are further away from
the technological frontier than firms in developed countries, they have a much greater scope to imitate
and adapt to existing innovations.

5.4 Further Analysis

This note provides a broad overview of the performance of the Kenyan manufacturing sector, identifies
the main constraints facing firms, and provides policy recommendations that would help unshackle firm
competitiveness in domestic, regional and global markets. The findings from this study also raise several
interesting new questions, which require further, focused analytical work. Some of these questions
could be addressed using three new sources of data that will be forthcoming in the next few weeks and
months – this includes the WB 2013 Enterprise Survey for Kenya, the 2011 Census of Industrial
Production, and the 2011 Integrated Survey of Services. Others would require in-depth qualitative data
collection and focused sectoral and feasibility studies.

1. To what extent do different constraints impede competitiveness within different sectors?
Our analysis helps identify key constraints common to the Kenyan manufacturing sector, using four
sub-sectors as a lens. However, the degree to which individual constraints will affect particular sub-
sectors will vary enormously. More in-depth value-chain work on specific, high-priority sub-sectors
would provide quantitative evidence to isolate the factors negatively impacting firm’s productivity,
and reveal opportunities to move up the value chain. A sector prioritization exercise could utilize
available data to identify those sectors that could be considered for prioritization, especially in
labor-intensive sub sectors such as tourism, light manufacturing, business process outsourcing and
horticulture.

2. Will industrial cluster and/or region or county-specific interventions such as growth poles lead to
transformative outcomes?
In the short-to-medium term, more focused investments aimed at ameliorating the constraints to
priority sub-sectors and/or sub-regions/counties could catalyze firm growth, leading to
demonstration and spillover effects for the rest. Identifying and targeting existing clusters of industrial activity could provide high returns, but dedicated work on possible measures and effects would need to be undertaken.

3. **Impact evaluation of current policies, programs and institutions to support manufacturing and export sectors?**

Our research shows clearly that the Kenyan economy enjoys many strengths – in particular, its skilled and well-trained labor force and its access to export markets. Measures aimed at preserving and solidifying its competitive advantage should also be given due attention. Research on programs that help new firms and new entrants to the market learn from existing leaders and first-movers might yield significant knowledge.

4. **Lessons from international experience on manufacturing and export promotion strategies that were successful?**

A number of countries have attempted to spur competitiveness in their manufacturing sectors, through a combination of policies - macro-economic, sector and/or location-specific, technology and/or investment-related, targeted at regulations etc. Some of these polices have been very successful - such as EPZs in China and Mauritius, investment reforms and regulations in Costa Rica, technology-targeted investments in South Korea etc – and it would be worthwhile investigating if some of these experiences could be implemented in the Kenyan context.
References


Andalon, Mabel and Pages, Carmen, Minimum Wages in Kenya. IZA Discussion Paper No. 3390


## Annex 1: Matrix of policy recommendations

<table>
<thead>
<tr>
<th>Required Reforms</th>
<th>Aligned with MTPII</th>
<th>Relevant Kenyan Government Agency</th>
<th>Current steps towards goal</th>
<th>Required steps towards goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expand improvements in the governance environment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigorously enforce competition laws to curb anti-competitive practices in input markets</td>
<td>✓</td>
<td>Competition Authority of Kenya</td>
<td>WBG Competition Policy team working to pass sector-specific competition regulations</td>
<td>- Pass sector-specific competition regulations.</td>
</tr>
<tr>
<td>Widen e-governance initiatives in licensing, tax administration to improve transparency in regulatory environment</td>
<td></td>
<td>Directorate of e-Government</td>
<td>Services already available: status of identity cards and passports, submitting tax returns, and report corruption</td>
<td>- Conduct surveys on effectiveness of current modes of delivery</td>
</tr>
<tr>
<td>Improve policy predictability through improved coordination between local and national government</td>
<td></td>
<td>President’s Office</td>
<td>A new public financial management Act to be enacted to reflect the devolved structures.</td>
<td>- Address investor concerns on the impact of the decentralization on the policy environment, and devolution of decision-making as a result of the new constitution.</td>
</tr>
<tr>
<td><strong>Invest heavily in improving connectivity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrade the Port of Mombasa by investing in port infrastructure and facilities</td>
<td>✓</td>
<td>KRA, KFS, KPA</td>
<td>MoF spearheading the National Single Window Systems Project Plans to increase container handling capacity</td>
<td>- New terminal which will double the port’s cargo handling capacity is a step in the right direction.</td>
</tr>
<tr>
<td>Phase out import/export declaration forms</td>
<td>✓</td>
<td>KRA, KEBS, EAC</td>
<td>Electronic form exists.</td>
<td>- Expedite the adoption of electronic forms.</td>
</tr>
<tr>
<td>Improve cargo clearance at border posts through introduction of a dynamic risk management system.</td>
<td>✓</td>
<td>KPA, KRA, KMA, Transport, EAC</td>
<td>GoK has 5 years plan to strengthen the capacity of border management at Liboi, Huluguo, Moyale, Mandera, El Wak, Kotulo, Wajir Bor &amp; Lokichoggio.</td>
<td>- Fully automate risk management systems</td>
</tr>
<tr>
<td>Enhance the operations of the Container Freight Stations by enforcing time limits</td>
<td></td>
<td>KMA/CFS</td>
<td>To develop institutional capacity of the KMA.</td>
<td>- Fully automate risk management systems to ensure smooth flow of risk-free cargo through customs.</td>
</tr>
<tr>
<td>Streamline Ports and Terminal operations to reduce clearance time for cargo/set time limits</td>
<td></td>
<td>KRA</td>
<td>Joint inspections currently done at ports of entry but not risk based.</td>
<td>- Enforce time limits, increase personnel efficiency and reduce rent seeking.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Task</th>
<th>Stakeholder</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish and maintain one stop border posts to significantly reduce wait times at the borders</td>
<td>KeNHA, KeRRA, KURRA</td>
<td>-One-Stop Border Post Bill proposed. -Cooperate to ensure that this bill is passed and implemented.</td>
<td></td>
</tr>
<tr>
<td>Establish a trade information portal to improve traders’ access to tariff information, as standards and procedures to trade in certain sectors and countries</td>
<td>Ministry of Trade, KEBS</td>
<td>The MoF is spearheading the National Single Window Systems Project that will upgrade the Port and KRA processing platforms to international standards.</td>
<td>-Give traders easy access to online database. -Special focus on EAC and other top trading partners. -Include rules and policies such as sanitary measures and technical requirements.</td>
</tr>
<tr>
<td>Improve the national standards and certification regime and strengthen the capacity at KEBS</td>
<td>MOI, MOF, UNDP, KRA, KEBS, MOE</td>
<td>Standards and Labeling Program Studies done on harmonization of standards and trade facilitation</td>
<td>-Undertake capacity building program at KEBS to harmonize domestic standards and certification with international systems.</td>
</tr>
<tr>
<td>Strengthening KEBS</td>
<td>KEBS</td>
<td>Data centers to ensure strategic public data is stored in a secure location.</td>
<td>-Formulate a comprehensive capacity building plan at KEBS.</td>
</tr>
</tbody>
</table>

**Support ongoing investments in energy with policies to ensure improved distribution and more affordable and predictable tariffs**

<table>
<thead>
<tr>
<th>Task</th>
<th>Stakeholder</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPPs- not just generation but distribution</td>
<td>PPP Act of 2013 provides the legal basis for government to partner with the private sector. Geothermal Development Company has started operating, aiming at developing new sources of energy in the country.</td>
<td>-World Bank is providing financial support to the Government by signing partial risk guarantees for third party power producers.</td>
<td></td>
</tr>
<tr>
<td>Enforcement of regulations on service delivery and quality</td>
<td>PPOA is in place and is fully operational.</td>
<td>Goals to reduce system losses, increase grid coverage. PPOA is in place and is fully operational.</td>
<td>-World Bank’s Infrastructure finance and PPP project is assisting GoK to improve service delivery by evaluating optimal value for money methods of service delivery. More information on the recommendations from this project can be found on the World Bank’s Kenya country page.</td>
</tr>
</tbody>
</table>

**Renewed SEZ/EPZ Strategy**

<table>
<thead>
<tr>
<th>Task</th>
<th>Stakeholder</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leverage investments in EPZs as a way to deliver improved infrastructure reliability to the export sector in the medium term</td>
<td>Various Ministries, Vision 2030, Private Sector</td>
<td>Construction of 3 special economic zones in Mombasa, Lamu and Kisumu.</td>
<td>-Recent effort by government to establish SEZs is an important initiative to extend the preferential investment climate advantages offered by the existing EPZ program.</td>
</tr>
<tr>
<td>Action</td>
<td>Responsible Parties</td>
<td>Details</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Fast track and enact Special Economic Zones law</td>
<td>Various Ministries, Vision 2030, Private Sector</td>
<td>Construction of 3 special economic zones in Mombasa, Lamu and Kisumu SEZ bill at Attorney General’s office. The SEZ law is currently at the Attorney General’s desk for clearance.</td>
<td></td>
</tr>
<tr>
<td>Promote linkages between SMEs and foreign investors/ large exporters to ensure their participation in global value chains</td>
<td>MOT, EPC</td>
<td>Fast track capacity building for business associations to strengthen institutional and human capacity. - Link SMEs with foreign investors. - Conduct industry-specific gap analysis. - Work with foreign firms to develop vocational training, transfer technology to domestic firms etc.</td>
<td></td>
</tr>
<tr>
<td>Strengthen linkages within clusters to enable synergies and information sharing</td>
<td>KIBT</td>
<td>Finalization of incubation policy and strategy, including synergy potential of “jua kali” clusters. KIBT carried a training needs assessment and is currently implementing review of curriculum for two clusters. - Existing clusters in Kenya (in cut flowers or dairy) need to be strengthened and possibly replicated. - Dynamic public-private dialogue to strengthen the linkages within this cluster should be undertaken.</td>
<td></td>
</tr>
<tr>
<td>Develop strategies to motivate high performing firms to ensure their sustained growth</td>
<td>MoA, EAC, KIRDI</td>
<td>- Incentives that reward gazelles for their superior performances. - Mechanisms for accessing international markets. - Providing them with opportunities for upgrading of management capabilities.</td>
<td></td>
</tr>
<tr>
<td>Explore industry specific strategies that will enable those with a revealed comparative advantage with opportunities to move up the value chain</td>
<td>MOI</td>
<td>Project to enhance agricultural product development &amp; marketing systems R &amp; D, extension and support services along agricultural value chain project. Integration of MSMEs into market value chains through trade exhibitions. - Product space analysis can be conducted in order to identify high potential sub-sectors. - Sector prioritization exercise could utilize available data to identify those sectors that could be considered for prioritization.</td>
<td></td>
</tr>
<tr>
<td>Improving access to credit to enable firms to invest in growth, innovation, and export participation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target stable inflation rates and ensure competitive, relatively stable exchange rate</td>
<td>CBK</td>
<td>Tight monetary policy Raising interest rates and higher cash-reserve ratios for banks. - CBK to adhere to its medium term target of 5%, with continued vigilance by closely monitoring inflation.</td>
<td></td>
</tr>
<tr>
<td>Facilitate access to finance for SMEs and first time exporters</td>
<td>MOT, MENR</td>
<td>To provide incubation facilities for MSMEs. - Promoting the use of moveable assets (such as capital stock, crops) as collateral. - Putting in place legislation to enable banks to offer leasing and factoring.</td>
<td></td>
</tr>
<tr>
<td>Set up an information portal with information on standards, certification requirements and procedures</td>
<td>☑</td>
<td>MOI, MOF, UNDP, KRA, KEBS, MOE</td>
<td>Standards and Labeling Program</td>
</tr>
</tbody>
</table>
Annex 2: Export sophistication – concept, methodology, and caveats

What countries produce, and how they produce them, matters for export growth. Hausmann, Hwang and Rodrik (2007) argue that exporting more sophisticated products leads to faster growth, due to the prospect of benefitting from higher spillovers of knowledge and technology in these products. The sophistication of a country’s export basket – denoted as ‘EXPY’ – derives from the sophistication of the individual products (denoted as ‘PRODY’) it exports. Hausmann, Hwang and Rodrik (2007) show that countries with high EXPY tend to have higher growth rates in the future, supporting the idea that countries ‘become’ what they export by converging to the income level implied by their export baskets.

Calculating export sophistication (EXPY) is a two-stage process. The first stage is to measure the income level associated with each product in the world (PRODY). The PRODY of a particular product is the GDP per capita of the typical country that exports that good. Typical GDP is calculated by weighting the GDP per capita of all countries exporting the good. The weight given to each country is based on revealed comparative advantage. The PRODY for a single product is calculated by weighting the GDP per capita of all countries exporting that product. Therefore, a product that typically makes up a large percentage of a poor country’s export basket will have stronger weights towards poor countries’ GDP per capita. This will be less the case for a product that makes up a small percentage of a poor country’s exports but is a significant component of many rich countries’ export baskets.

The second stage is to measure the income associated with a country’s export basket (EXPY). The EXPY is calculated by weighting these PRODY of each product by the share that each good contributes to total exports. For example, if butter makes up 15 per cent of a country’s exports, its PRODY will be given a weight of 0.15. Countries whose export baskets are made up of “rich-country goods” will have a higher EXPY, while export baskets made up of “poor-country goods” will have a lower EXPY.

\[
PRODY_k = \sum_j \left( \frac{x_{jk}}{X_j} \right) Y_j \quad \text{and} \quad EXPY_i = \sum_k \left( \frac{x_{ik}}{X_i} \right) PRODY_k
\]

The concepts of PRODY and EXPY are, however, not free of criticism. PRODY of some products are counter-intuitively high suggesting sophistication in products merely because rich countries produce them: bacon and ham, for example, have a higher PRODY than internal combustion engines. Further, the quality of products varies (even if they all have an identical code at the HS 6-digit level) – cars from Country X may not be the same quality as cars from Country Y. When product quality is not taken into account, EXPY overestimates the importance of sophisticated products from low-income countries. Xu (2006) shows that once products at the HS 6-digit level are further divided by relative unit values, the structure of China’s exports is consistent with its level of development. Seemingly high-tech products like computers can be produced in low-tech ways, and vice-versa. Because of fragmentation of production, while the final export of a sophisticated product might be from a low-income country, its contribution might have just been in the final assembly of high-value intermediate inputs made elsewhere. Even if computers are deemed not to be sophisticated because the final assembled package
is exported from a low-income country, the innards could be highly skill-intensive possibly imported from richer countries. In the well-known example of the iPod, an overwhelming share of the final assembled value of an iPod exported from China is captured by the creators of intellectual property, and not in the form of wages earned by the assemblers.