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MANUFACTURING IN MOZAMBIQUE

What are the Potential Impacts of the
Resource Boom on the Competitiveness of the
Manufacturing Sector?

OCTOBER 2014

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Authors: *Lynn Salinger and Caroline Ennis*

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Acronyms

ACET	African Center for Economic Transformation
BM	<i>Banco de Moçambique</i> (Bank of Mozambique)
CDM	<i>Cervejas de Moçambique</i>
CIM	<i>Companhia Industrial de Matola</i>
CMT	“Cut-make-trim” (clothing companies)
CPI	Center for Investment Promotion
CTA	<i>Confederação das Associações Económicas de Moçambique</i> (Confederation of Business Associations in Mozambique)
DD	Dutch disease
DNEAP	National Directorate of Studies and Policy Analysis (Ministry of Planning and Development)
EDM	<i>Electricidade de Moçambique</i>
EMAN	Strategy for the Improvement of the Business Climate
ENDE	<i>Estratégia Nacional de Desenvolvimento</i> (National Development Strategy)
GAZEDA	<i>Gabinete das Zonas Económicas de Desenvolvimento Acelerado</i>
IESE	<i>Instituto de Estudos Sociais e Económicos</i> (Institute for Economic and Social Research)
IIM	<i>Inquérito as Indústrias Manufactureiras</i> (Manufacturing Industries Survey)
IMF	International Monetary Fund
INE	<i>Instituto Nacional de Estatística</i> (National Institute of Statistics)
IPEME	Institute for the Promotion of Small and Medium Enterprises
ISIC	International Standard Industrial Classification
MIC	Ministry for Industry and Commerce
MPD	Ministry of Planning and Development
MT	Metical
REER	Real effective exchange rate
ROM	Republic of Mozambique
SEZ	Special economic zone
SPEED	Support Program for Economic and Enterprise Development
TIPMOZ	Trade and Investment Program in Mozambique
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development

Executive Summary

Mozambique's non-extractives, non-megaprojects manufacturing sector is still small and can be characterized as "low tech." Moreover, signs of structural transformation of Mozambique's economy are few. Shares of total GDP contributed by agriculture, industry, and services have not changed significantly in the last ten to twelve years, nor has there been any significant increase in the share of total employment contributed by manufacturing. Within industry, however, the share of manufacturing's non-extractives sectors has grown from 19 (2008) to 35 percent (2013).

This study of the factors driving (or inhibiting) the competitiveness of Mozambique's manufacturing sector and thus the sector's potential vulnerability under natural resource boom conditions focuses on the part of manufacturing that is *not* expected to expand as a direct result of the boom. Specifically, firms in the agriculture/beverages and "other" manufacturing sectors, outside of mining and manufacture of mineral and metal goods, were interviewed.

In other countries, natural resource booms have created strong increases in demand for the local currency and, through increased spending, upward pressure on domestic prices. This in turn has led to appreciation of the currency and an upward shift in relative prices of non-tradables (i.e., labor, real estate, construction, transportation, logistics), making them more expensive, in local currency, to the detriment of tradables (i.e., agriculture, tourism, and manufacturing). The result of this set of impacts, known as Dutch disease, unless countered by specific monetary or structural measures, can sharply reduce incentives to produce for export or substitute for imports competitively. Virtual elimination of export agriculture and/or manufacturing can ensue. What will happen in Mozambique?

The question is of particular importance because revival or promotion of export-oriented, labor-intensive manufacturing has been an objective of numerous government policy statements over the last twenty years. The most recent of these is the National Development Strategy (*Estratégia Nacional de Desenvolvimento*, or ENDE), approved by the Council of Ministers in 2014. Manufacturing is valued for its potential contributions to structural change, diversification, employment generation, attraction of foreign investment, technology transfer, and productivity enhancement.

This study interviewed firm managers from small- and medium-sized enterprises and a few large companies. Firms also differed by input sourcing strategies, processing, products, ownership, capital versus labor intensity, product standardization versus differentiation, and market orientation. These characteristics allow us to probe how vulnerable different categories of firms believe themselves to be – and how vulnerable the authors' analysis suggests them to be – if the metical were to strengthen significantly as a result of the boom. Moreover, the metical's current appreciation vis-à-vis the currency of one of Mozambique's major trading partners, the South African rand, provides an "experimental" perspective on firms' commercial prospects in the face of a stronger metical.

Confirming the findings of the Ministry of Development and Planning's 2012 survey of manufacturing, firms in our sample face a range of constraints in trying to do business in Mozambique. Few attempt to export. Those that do export minimally processed goods, such as wood pavers for more refined value-added processing elsewhere, or sell value-added processing labor for to assemble goods for sale into South Africa, such as basic garments, for which product

design, input sourcing, and merchandising planning are all performed outside of Mozambique. Even those in the agro-processing sector are, by and large, producing goods for the domestic market. A companion to this study analyzed several agricultural commodities, including one agro-processed good, cotton lint (Calima et al. 2014). Uncertainties regarding the availability of electricity, the stability of licensing fees, port fees and processes, and other laws and regulations affecting their businesses are common concerns across many firms. Concerns were expressed about local firms' inability to face competition from foreign suppliers. Complaints were also heard about minimum wages being out of line with labor productivity, especially when referenced against other countries. Boom pressures on road transport are already being felt, with road haulage capacity constraints and rising costs exacerbated in recent months by insecurities along the north-south road axis. With an extensive coastline, inter-port cabotage could be an alternative, but port management inefficiencies are said to take this option out of consideration.

The aggregate effect of these (and other) constraints to doing business in Mozambique already renders the non-extractives manufacturing sector fragile from a competitiveness point of view. Were the metical to appreciate significantly, imported raw materials and intermediate and final goods would be able to compete successfully, perhaps replacing Mozambican goods altogether. At the same time, efforts to foster exports would be frustrated, and those few firms already exporting would see their competitiveness eroded. A summary of potential impacts, by firm category, is presented in the matrix below and explained in the text that follows. Firm categories are distinguished primarily by the type/degree of differentiation of good produced and primary destination markets (domestic or foreign).

Summary of Potential Dutch Disease Impacts by Firm Type

Manufacturing Firm Category			Overall Outlook in the Face of Dutch Disease		
Product Category	Destination Markets	Examples	Favorable	Ambiguous	Difficult
Aspirational Consumer Goods	Domestic	Brand-name foods, beverages	√		
Weakly Differentiated Goods + Strong Value-Added Services	Domestic	Intermediate goods, e.g., agricultural inputs, construction materials		√	
High Quality Consumer Goods	Domestic	Specialty consumer goods, e.g., foods, beverages, home goods		√	
Weakly Differentiated	Domestic	Basic foods, beverages			√
Local Value-Added Processing	Export	Clothing			√
Standardized	Export	Intermediate goods, e.g., threads, textiles			√

Source: Team analysis

Some manufacturing companies operate in market segments that could potentially provide them some qualitative dimension of resilience against Dutch disease-induced pressures. The outlook is favorable for some capital-intensive firms that source most of their inputs internationally and

produce “**aspirational**” **consumer goods** for the domestic market, i.e., goods that enjoy strong consumer brand loyalty. They will likely see their costs decrease, allowing them to maintain or grow market share even in the face of cheaper imports.

On the other hand, the Dutch disease outlook is ambiguous for other firms. To the extent that firms produce **weakly differentiated products** for the domestic market, cheaper imports could certainly undercut them in the Mozambican market. However, some of these firms strengthen their competitiveness in the local market by offering consumers additional **value-added services** – e.g., custom blending, cutting, shaping, etc. – that strengthen their competitive positions. New market entrants from abroad could mirror these good business practices, of course, but existing firms would already have an advantage in the market.

Another category of firms sources raw materials domestically for processing into **high-quality consumer goods** that are sold in the domestic market with little or no competition (at present) from foreign suppliers, due to the relatively small overall market size. Whether these firms will be faced with significant competition from foreign suppliers seeking to take advantage of lower costs to grow space in the local market is unclear.

The outlook under a Dutch disease scenario is likely to be difficult for several other firm categories. For firms that produce **weakly differentiated and readily substitutable goods** for the domestic market, or firms that export labor through value-added processing of imported inputs, or firms that export fairly standardized products into overseas markets, the market prospects under a natural resource boom scenario looks difficult, or challenging. Imported substitute products will easily undercut the locally produced goods. Producers of **labor-intensive, value-added processed, standardized goods** will find that a stronger metical will make their products more expensive, expressed in rand or euro or U.S. dollar terms. These firms are already under pressure. Examples of labor-intensive, export-oriented manufacturing in Mozambique are rare. A few are found in the garment sector, supplying into the South African market. As described in the body of the report, this is *not* the same story of garment industry success found in lower cost, more highly productive South and Southeast Asian manufacturing platforms, who supply clothing competitively into European and North American markets.

In summary, Dutch disease – should it emerge as a consequence of the natural resource boom – will make things even harder for most manufacturing companies in Mozambique.

Appreciation of the metical and upward shifts in relative prices of non-tradables will likely frustrate or negate government's efforts (or intended policy objectives) to industrialize. Without careful macroeconomic management and strategic investments to improve productivity and the business environment, Mozambique could end up with just a few non-extractives industry manufacturing firms, not the full-blown industrialization targeted in the newly adopted development plan, the ENDE.

Appreciation of the metical and the real exchange rate has both geographic and temporal distributional effects. While in the short run, a metical appreciation favors predominantly urban, middle-class consumers who will be able to purchase imported food and consumer goods at lower prices, this makes it more difficult for rural producers of agricultural products to sell their produce. And over time, the availability of cheaper imports frustrates efforts to industrialize, i.e., to manufacture goods in whose production Mozambique would have a comparative advantage at a less strongly appreciated exchange rate. This in turn frustrates the economy's ability to create manufacturing jobs and achieve expected “learning by exporting” gains.

In light of Mozambique's broad welfare and development goals, this study's findings are sobering. Firms with the most favorable outlook under a possible Dutch disease scenario are those that create the fewest jobs, being capital-intensive in nature and sourcing raw materials internationally rather than from local suppliers. On the other hand, companies that are labor-intensive, source locally, and export likely face the most difficult outlook under a Dutch disease scenario.

In order to keep such outcomes at a distance and give Mozambique's manufacturing sector and industrialization plans a better chance of success, it is important both 1) to mitigate the severity of Dutch disease and 2) to help firms overcome its impact through a focus on productivity and international competitiveness. The severity of an exchange rate appreciation can be mitigated through measures such as managing real exchange rates to minimize currency appreciation and resource re-allocation, using fiscal and monetary tools described elsewhere (Biggs 2012; Ross 2014). Efforts to boost productivity and international competitiveness include measures to improve the overall business environment, attention to international competitiveness of minimum wage levels, addressing infrastructure bottlenecks and inefficiencies, and strategic investments to improve productivity in traditional sectors of the economy.

In the short-run, it is not possible to "balance" the aim of industrialization with the desire to ensure benefits for urban consumers, rather these are trade-offs with important distributional and longer term consequences. Under an appreciated metical scenario, the longer term consequences for the economy's structural transformation are extremely pessimistic. The longer term benefits of an industrializing, structurally transforming, economy can only be realized if policymakers keep that longer term vision in mind as they manage the real exchange rate and spend natural resource gains wisely in the coming few years in order to stimulate a more productive and more efficiently operating economy for the generation to come.

1. Introduction

This report is part of a suite of studies conducted by the Support Program for Enterprise and Economic Development (SPEED), a joint activity undertaken with the *Confederação das Associações Económicas de Moçambique* (CTA) and supported by the U.S. Agency for International Development. Earlier work by SPEED identified the potential for the natural resource boom in Mozambique to have negative macroeconomic consequences for Mozambique's traditional tradables sectors (Biggs 2011, 2012; Webber 2013).

A natural resource boom can lead to negative economic effects in the following ways:

- A sharp increase in natural resource exports may create upward pressure on the metical if export revenues – or some portion thereof, as in taxes owed to the state – are converted into meticais (exchange rate effect).
- With increased revenues, domestic spending by government or private actors may be facilitated (spending effect).
- With increased spending, the prices of domestic, non-tradable goods and services (e.g., land, skilled labor, construction services, housing, logistics,...) may be pushed up (real exchange rate effect).¹
- Imports become less expensive in domestic currency terms and exports become more expensive in foreign currency terms.
- As relative prices are skewed in favor of non-tradables, the relative profitability of non-tradable activities increases and the relative profitability of tradables activities falls.
- This increases incentives to reallocate resources *into* the non-tradable sectors of the economy and *away from* traditional tradables sectors (re-allocation effect). In some cases, de-industrialization or abandonment of commercial agriculture may ensue.

This set of impacts has been termed “Dutch disease,” named for the decline of the manufacturing sector in the Netherlands after discovery of a large natural gas field in 1959. The impacts of Dutch disease on economies experiencing natural resource booms have been widely researched (see Box 1 for a summary). Following an extensive survey of the literature, IMF analysts concluded that “...Dutch disease does exist—as the real exchange rate appreciates, there is factor reallocation, and production switches away from manufacturing” (Magud and Sosa 2010, 21).

However, the impacts on growth are difficult to isolate, as almost always Dutch disease occurs at a time of economic boom and change. The severity of Dutch disease is also difficult to predict – depending partly on policy measures government may take, and partly on how fast and sharp the boom is. Growth is not the only factor – as often growth in GDP can occur without concurrent

¹ Note that if the exchange rate is fixed, inflation may ensue (Frankel 2012).

increases in employment and therefore in the welfare of the population. A possible decline in manufacturing is of concern not just for its impact on growth, but on job creation and diversification of the economy, especially in a situation where the boom is caused by non-renewable resources, that will eventually be exhausted – as in the case of Mozambique.

Natural resource boom effects also have distributional impacts, seen when focus is shifted from manufacturing firms to consumers of manufactured goods. A stronger metical would make imported goods cheaper, relative to home-produced goods. This is a *benefit* to consumers, especially a rising middle class with increased disposable income, whether they seek to shift from maize meal to rice or from domestic to imported beverages.

Box 1: Overview of Dutch Disease Experiences Elsewhere

Natural resource boom experiences elsewhere suggest the sector's potential vulnerability to currency appreciation. A natural gas boom in the Netherlands in the early 1970s led to a nearly 20 percent appreciation of the guilder in six years, industrial stagnation, and a 16 percent drop in manufacturing employment over the same time period (Economist 1977). Nigeria's oil booms during the 1970s and 80s, on the other hand, saw manufacturing output maintained through costly government protection, while export agriculture (timber, groundnuts, oil palm) collapsed (Bevan, Collier, and Gunning 1999). Exports of oil from Yemen in the 2000s led to a decline in manufacturing's share of GDP from 19 to 7 percent (Abu-Ismael and McKinley 2008, quoted in Hailu et al. 2011). Mexico's oil boom in the 1970s/80s was also followed by steady contraction of its manufacturing sector; yet Indonesia avoided a collapse in manufacturing through state intervention, along with policies such as exchange rate devaluation and pro-export regulation (Usui 1997; Bevan, Collier, and Gunning 1999). Angola's manufacturing sector remains a small share of GDP, crowded out by real exchange rate appreciation (World Bank 2013).

To fully appreciate the potential impacts of the natural resource boom on Mozambique's economy, it is necessary to go beyond aggregate, theoretical analysis and look at the potential impacts on different sectors of the economy and even different value chains or typologies of firms within these sectors. Sectoral studies have been undertaken to probe the potential impacts of a natural resource boom on Mozambique's labor markets (Salinger and Ennis 2014a), and on traditional, tradable sectors of the economy, i.e., agriculture (Calima, Dengo, Moamba, and Salinger 2014), manufacturing (this report), and tourism (Baca, Kozumbo, and Sarmento 2014):²

- **Labor markets** are likely to be most affected by natural resource boom pressures at the high-skill end of the spectrum, as demand for both skilled professionals and skilled technicians will rise. Demand for low-skill labor, such as rural workers seeking to diversify or shift livelihoods out of agriculture, is unlikely to be directly affected. However, if natural resource boom-induced government spending increases sharply, and if that spending is directed to labor-intensive public works projects, for example, then migration of rural labor into construction projects could lead to upward pressure on rural wages.

² For copies of this work, see www.speed-program.com.

- Mozambique's **agricultural sector** is potentially vulnerable to metical appreciation in some traditional commodities. Rice is already unprofitable, if all labor costs are quantified, at current yields, world prices, and exchange rate. If the exchange rate were to strengthen significantly, the economic profitability of rice, cotton, and soybeans could all be threatened. Yield increases and decreased logistics costs could help to remediate some of the threat to competitiveness of metical appreciation.
- The **tourism sector** in Mozambique is another traditional "export industry," earning foreign exchange through sale of tourism services to foreign consumers. Early analysis suggests that metical appreciation would threaten the competitiveness of business/corporate, island, and coastal beach tourism, causing some firms to "de-formalize" or go out of business, leading to job losses and a weaker, less competitive tourism sector.

This study seeks to understand the potential impacts of a natural resource boom on non-extractives industry-related, non-megaprojects-related manufacturing in Mozambique. In order to proceed with analysis, we first need to define what is meant by "manufacturing" in Mozambique, as different organizations use different definitions; this also allows us to situate the traditional, non-extractives industry-related manufacturing in a broader economic context (Section 1). We also surveyed recent literature in order to understand how manufacturing has evolved in recent years and how government strategies seek to promote industry/ manufacturing (Section 2). Section 3 describes our sample, analyzes potential natural resource boom impacts by firm typology, and presents findings. Section 4 presents conclusions and key messages.

A number of hypotheses about manufacturing in Mozambique, competitiveness, and vulnerability to Dutch disease emerged during the course of our interviews with firms. In addition to consideration of key cost drivers, factors that emerged that may affect the resilience or vulnerability of the firm to the macroeconomic and relative price effects of natural resource booms include: the kind of good produced – highly standardized versus highly design-intensive, the degree to which the firm is involved either in exports or imports of inputs or final goods, the degree of labor- or capital-intensity, and the extent to which a firm's competitive success depends on mastering non-cost dimensions of doing business in Mozambique. Thus in the analysis, we characterize value chains not by what they make per se, but rather by structural and behavioral characteristics that define the firms, bear directly on vulnerabilities to currency value and relative price changes, and may be in common with firms in other divisions of the sector.

ECONOMIC IMPORTANCE OF MANUFACTURING

Our focus on manufacturing is important for several reasons. First, as one of the traditional tradables sectors of an economy most vulnerable to resource reallocation in a natural resource boom scenario, manufacturing is thus an important lead sector to watch for changes. Second, a strong and growing manufacturing sector, especially when connected with global value chains, is an important indicator of an economy that is modernizing. Third, growth in manufacturing brings positive multiplier effects in terms of service sector value-added and employment growth, as well as spread effects of innovations borne of research and development in manufacturing. Finally, unlike the extractives industry whose natural resources have a finite horizon, manufacturing can

grow, become more sophisticated, and adapt over time, thereby securing growth and employment opportunities for generations to come.

Stylized facts highlight the structural transformation experienced by countries as they grow (Kuznets 1971; Teal 2011; UNIDO 2013). Over time the share of value-added derived from agriculture normally falls, while the shares of industry and, subsequently, services normally rise. Changes are induced in the scale of production, from personal enterprise to impersonal organization of firms, and in the occupational status of labor, from informal to formal employment.

Benefits of this structural transformation are important in both employment creation and fostering of innovation. Manufacturing creates not only direct employment in production, but also indirect employment in services sectors that support it. The McKinsey Global Institute notes that the distinction between manufacturing production and services has blurred. An increasing share of growth is in the areas of research and development, marketing and sales, and customer support that underpin manufacturing per se. In the United States, service-type activities account for 30-55 percent of total manufacturing employment (Manyika et al. 2012, 7). This service-related side of manufacturing, with both low- and high-skill jobs, is also the more dynamic segment of the manufacturing sector. Even as a small share of the overall economy, manufacturing is also crucial as a key investor in innovation. As manufacturing firms invest in research and development to devise new inputs, products, technologies, methods of production, etc., the spillover effects of the adopted innovations lead to productivity gains elsewhere in the economy.

DEFINING MANUFACTURING IN MOZAMBIQUE

In order to assess the impact of a natural resource boom on manufacturing, it is important to be clear about definitions. In general, the term “industry” encompasses mining, manufacturing, construction, and utilities. Mozambique’s National Statistics Institute (INE) defines “extractive and processing industries” using two sections of the United Nations’ International Standard Industrial Classification (ISIC, rev. 4): mining and quarrying (ISIC divisions 05-09) and manufacturing (divisions 10-33) (**Error! Not a valid bookmark self-reference.**)³

Table 1: Mozambique’s Extractive & Manufacturing Industries

ISIC Div.	Description	ISIC Div.	Description
B. MINING AND QUARRYING			
05	Mining of coal & lignite	08	Other mining & quarrying
06	Extraction of crude petroleum & natural gas	09*	<i>Mining support service activities</i>
07	Mining of metal ores		
C. MANUFACTURING			

³ ISIC rev. 4 divisions 9, 19, 21, 26, 30, and 33 are either not relevant today in Mozambique, or are not large enough to be tracked separately by INE. For example, Division 05 was just added to Mozambique’s statistics as a separate mining industry category in 2014.

ISIC Div.	Description	ISIC Div.	Description
10	Food products	22	Rubber & plastics products
11	Beverages	23	Other non-metallic mineral products
12	Tobacco products	24	Basic metals, including aluminum ingots
13	Textiles	25	Fabricated metal products, exc. machinery & equipment
14	Wearing apparel	26*	<i>Computer, electronic, & optical products</i>
15	Leather & related products	27	Electrical equipment
16	Wood & products of wood & work, except furniture; articles of straw & plaiting materials	28	Machinery & equipment, not elsewhere classified
17	Paper & paper products	29	Motor vehicles, trailers, and semi-trailers
18	Printing & reproduction of recorded media	30*	<i>Other transport equipment (ships, boats, railway, air, spacecraft, military vehicles, motorcycles, bicycles, other)</i>
19*	<i>Coke & refined petroleum products</i>	31	Furniture
20	Chemicals & chemical products	32	Other manufacturing (jewelry, musical instruments, sporting goods, games & toys, medical & dental equipment)
21*	<i>Pharmaceuticals, medicinal chemical & botanical products</i>	33*	<i>Repair & installation of machinery & equipment</i>

Note: * Not included in INE definitions

Source: United Nations, ISIC, rev. 4 (New York, 2008); INE (2014)

A recent World Bank study on manufacturing in Africa differentiates between “low tech” and “high tech” manufacturing (Dinh et al. 2012, 26). The former encompasses food and beverages, leather, wood processing and products, simple metal products, textiles, and garments, whereas the latter includes machinery; metal, non-metal, plastics, electronics, chemical, and pharmaceutical products; vehicles; and parts. Sub-Saharan Africa’s comparative advantage is in light, “low tech” manufacturing, in countries where labor costs are low.⁴ By “light manufacturing in Africa,” the Bank is referring to “a few medium-size formal firms providing products to niche or protected markets and [] a vast number of small, low-productivity informal firms providing low-quality products to the domestic market” (Dinh et al. 2012, 2). This same characterization applies to Mozambique.

⁴ “Low” is a relative term. Wages should be considered both relative to wages for comparable industries and skill levels in other countries and relative to labor productivity. In this case, the World Bank is referring to low wages in Ethiopia, compared with those observed in Southern Africa. They compared cash wages of Ethiopia, Tanzania, and Zambia with the same in China and Vietnam. Average monthly cash wages for unskilled labor in manufacturing sectors varied significantly among the three African countries: \$35-53 in Ethiopia, \$80-130 in Tanzania, and \$157-208 in Zambia, compared with \$78-131 in Vietnam and \$197-278 in China (all from 2011). The authors state that non-wage benefits are likely to be higher in Asia, especially China, than in Africa, thus widening the pay gap even further (Dinh et al. 2012, 26-31). By comparison, Mozambique’s minimum wage for industry in 2011 was \$107, rising in 2014 (in nominal prices) to \$147 per month. Current monthly garment industry wages in Bangladesh (\$68) and Cambodia (\$100), for example, are lower than or comparable to those in Vietnam (\$100-128, depending on location). A comparison of 2011 monthly real wages for garment sector workers, corrected for costs of living across countries, is available in Worker Rights Consortium (2013).

In terms of labor productivity, Dinh et al. report that while China’s average productivity in polo shirts is more than double the level of Vietnam, levels in Ethiopia and Tanzania are on par with that of Vietnam. Levels of labor productivity in the manufacture of simple leather shoes were quite comparable across all five countries.

2. Manufacturing in Mozambique: Data & Policies

Manufacturing in Mozambique has been influenced by the country's history and political shifts, from which it has yet to fully recover. In terms of absolute size, Mozambique was the 8th largest industrial producer in Africa at independence in 1975 (Biggs et al 1999), whereas in 2010 Mozambique's manufacturing sector was 16th among sub-Saharan African countries. Yet in a relative sense, Mozambique's 15 percent GDP share of manufacturing is among the highest in Africa. Only four African countries (Swaziland, Mauritius, Senegal, and Mozambique) are found among the world's top 50 countries when ranked in order of the GDP share of manufacturing.⁵

However, the value of Mozambique's extractive and industrial production grew 50 percent between 2010 and 2013, from 75.4 to 113.7 billion current meticaís (see Table 2 for 2013 values). As the GDP deflator rose by almost 19 percent between 2010 and 2013, this represents a real increase of just over 30 percent. The size of Mozambique's manufacturing sector is skewed by the Mozal smelter's aluminum ingot manufacturing (ISIC division 24). However, the composition of manufacturing has evolved in the last six years (Figure 1). INE figures from the more distant past (1973-1997) show the discontinuous effect of Mozal's launch in 2000, reflected in the surge in the relative importance of basic metals manufacturing by 2008 (Figure 1).

Table 2: Value of Mozambique Extractive & Processing Industry Production, 2013

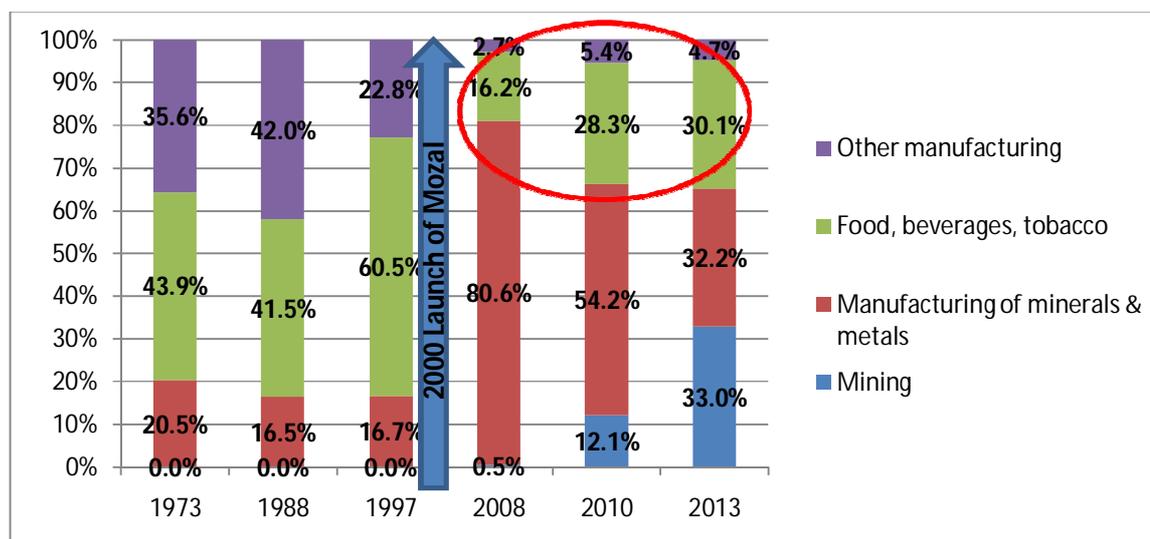
ISIC Div.	Sector	Value in Current Prices ('000 MT)	Share of Total
MINING			
5	Coal, not elsewhere classified	18,937,302	33.0%
6	Petroleum, gas	9,682,214	
7	Metallic ores	8,597,064	
8	Other extractive industries	250,594	
MANUFACTURING OF MINERALS & METALS			
24	Manufacture of basic, non-ferrous metals	31,872,360	32.2%
23	Other non-metallic mineral products	4,781,253	
MANUFACTURING OF FOODS, BEVERAGES, TOBACCO PRODUCTS			
10	Food products	18,619,454	30.1%
11	Beverages	9,877,564	
12	Manufactured tobacco products	5,726,462	
OTHER MANUFACTURING			
20	Chemical products	1,544,269	4.7%
13	Textile products	1,497,807	
22	Rubber, plastics products	564,287	

⁵ The importance of Mozambique's manufacturing share places it above Zimbabwe (13.7), Namibia (13.4), Lesotho (12.8), South Africa (12.2), Malawi (11.9), Kenya (10.7), and Tanzania (10.2).

ISIC Div.	Sector	Value in Current Prices ('000 MT)	Share of Total
25	Fabricated metal products	389,280	
31	Furniture & mattresses	301,856	
17	Plugs, paper, paperboard	234,453	
16	Wood, cork, plaiting articles	94,052	
18	Printed materials	66,582	
15	Leather & articles	46,858	
27	Machines & equipment	45,249	
14	Clothing, pile, terry articles	28,156	
28	Electrical machinery	5,930	
29	Motor vehicles ⁶	3,688	
32	Other products	531,897	
TOTAL		113,698,629	100.0%

Source: INE (2014)

Figure 1: Composition of Manufacturing & Extractive Industries, 1973-2013



Note: Based on current value of production

Sources: 1973-1997 from INE, presented in Biggs et al. (1999); 2008-2013 from INE annual yearbooks

Since 2008, Mozambique's manufacturing sector appears to have grown more diversified. Mining has grown to one-third of industrial production. Outside of extractives and megaprojects, the food, beverages, and tobacco manufacturing category has also expanded from 16 to 30 percent of total value of industrial production; and even "other manufacturing," a category including a range

⁶ Although quite small today, this division may be due to expand, as Mozambique is reportedly beginning to manufacture vehicles (cars, sports utility vehicles, minibuses, buses) outside of Maputo. The result of an investment by China Tong Jian Investment Co., Ltd., Matchedje Motors' assembly plant, with an initial annual capacity of 30,000 vehicles, has just come online. One news report noted that 3,000 workers are expected to be employed over time, while another stated that 80 workers are currently employed, with as many as 500 jobs expected over the next several years.

of products, is nearly twice as large a share in 2013 versus in 2008, growing from nearly 3 to nearly 5 percent). This study focuses on manufacturing outside of extractives, i.e., the food/beverages and “other manufacturing” categories. By and large, these are the “low tech” manufacturing sectors referred to by Dinh et al. In 2013 they represented about one-third of Mozambique’s total industrial production, highlighted by the red oval in Figure 1.

MOZAMBIKAN MANUFACTURING TODAY: FAR FROM STRUCTURAL ECONOMIC TRANSFORMATION

In 1999, Biggs et al. characterized the manufacturing sector as small, with production concentrated in a small number of industries, low inter-sectoral linkages, most firms sourcing inputs from abroad, and very few firms exporting. In some respects, not much has changed in the last fifteen years, and there are few signs of structural transformation, with GDP shares of agriculture and manufacturing quite stable since 2000. Manufacturing makes up 12 percent of exports, and employs 2.7 percent of the workforce (Jones and Tarp 2012, 26; see Table 3).

Figure 2: Manufacturing’s Share of GDP, 1993 to 2013

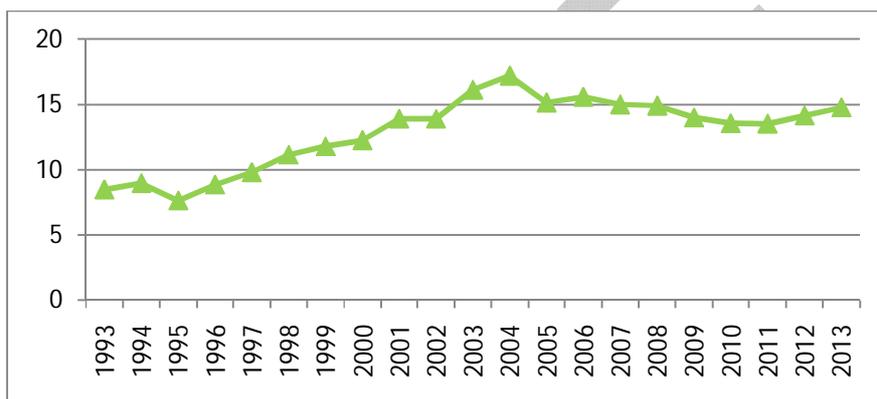
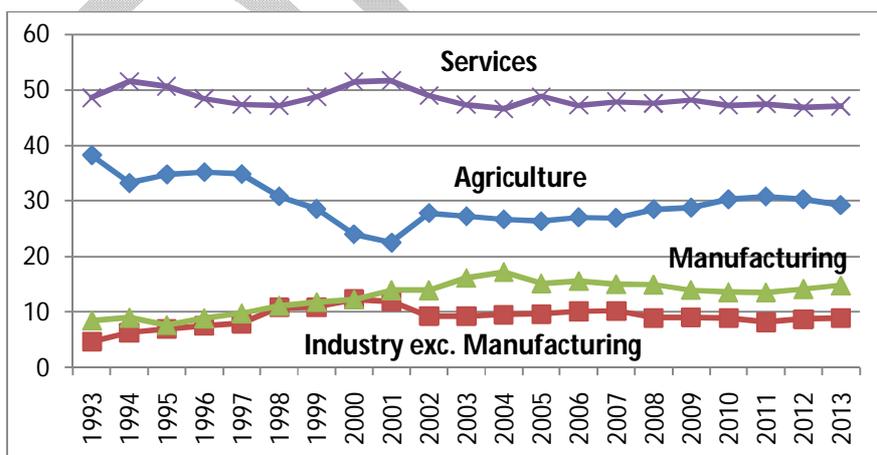


Figure 3: GDP Share of Manufacturing, Relative to Other Sectors, 1993 to 2013



Source: World Development Indicators

Manufacturing is still concentrated in a small number of geographic areas, around large cities and towns, with nearly 40 percent of manufacturing firms concentrated in Maputo province, and a

further 19 percent just in Sofala province. Thus nearly 60 percent of manufacturing firms are found in just two of Mozambique's ten provinces (MPD/DNEAP 2013).

Employment figures underscore the lack of transformation from a primarily agriculture-based economy to one in which industry would provide an increasing share of employment. Four-fifths of the population is still employed in agriculture, 8 percent in commerce (16.5 percent in all services), and only 2.7 percent in manufacturing (2.9 percent in industry, including mining) (Jones and Tarp 2012).⁷

Table 3: Employment by Sector, 1996/97 to 2008/09

	96/97	02/03	04/05	08/09	Change, 96/7-08/9
PRIMARY					
Agriculture	85.2	79.9	80.7	80.6	-4.6
SECONDARY					
Manufacturing	2.7	3.6	2.8	2.7	0.0
Mining	0.5	0.5	0.2	0.2	-0.3
SERVICES					
Commerce	4.0	7.3	7.8	7.9	4.0
Other services	2.7	2.8	2.9	2.9	0.2
Construction	1.4	1.6	1.4	1.7	0.3
Education	0.8	1.6	1.6	1.7	0.9
Government	1.2	1.2	1.2	1.1	-0.2
Transport	1.1	1.1	0.8	0.8	-0.2
Health	0.5	0.5	0.5	0.4	-0.1

Source: Jones and Tarp (2012), p. 26

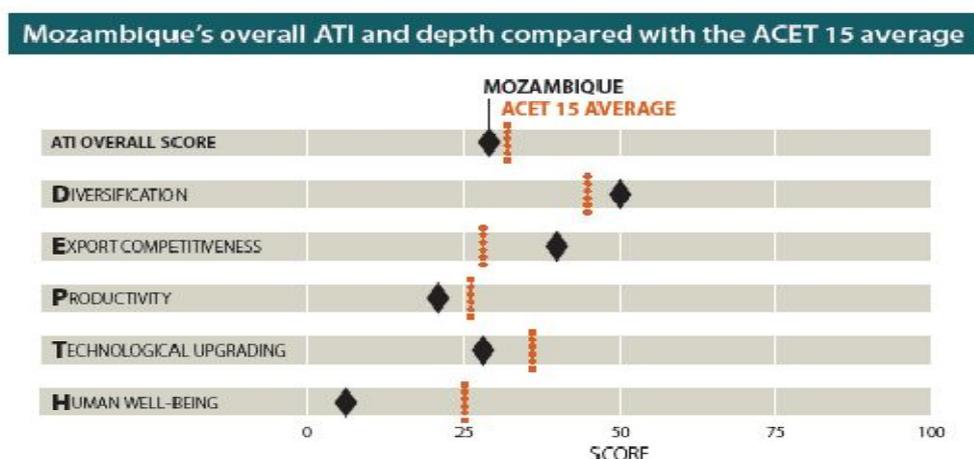
Mozambique's lack of structural change mirrors the current state of much of sub-Saharan Africa: limited increase in the role of the manufacturing sector, relatively low technology use by manufacturing, low productivity of agriculture, and some enclave projects that contribute to GDP but not to a great extent to jobs and widespread poverty reduction. This is confirmed by the African Center for Economic Transformation's (ACET) African Transformation Index (ACET 2014). The Index integrates five elements⁸ to benchmark the progress of fifteen selected sub-

⁷ By way of comparison, the shares of employment in agriculture, industry, and services in 2010 were 46%, 21%, and 33%, respectively, in lower middle-income countries, and 4%, 22%, and 74% in high-income countries (World Development Indicators, accessed October 2014).

⁸ The Index is comprised of five components: diversification of production and exports, export competitiveness, productivity, technology, and human economic well being. Diversification of production and exports is measured by share of manufacturing in GDP, level of concentration of exports overall, and share of manufacturing and services in exports; export competitiveness is measured by the ratio of a country's share in the world's exports of non extractive goods and services to its share in world non-extractive GDP, i.e., whether a country is able to export more non extractive goods and services than the world average; productivity is measured by manufacturing value-added per manufacturing worker and cereal yields; technology is measured by manufacturing value-added in production and exports; and human economic well being is measured by GDP per capita and level of formal employment.

Saharan African countries, including Mozambique, toward structural transformation.⁹ As seen from the chart below, Mozambique scores somewhat below average on overall Transformation. This is consistent with the effect of large, capital-intensive manufacturing “enclaves” such as Mozal, which push up the proportion of manufacturing in GDP and exports, but do not necessarily feed through into widespread jobs growth and improved wellbeing. On the other hand, Mozambique scores above average in Diversification and Export Competitiveness, although as the report itself acknowledges, this is principally due to the inclusion of megaprojects in manufacturing.

Figure 4: Mozambique and the African Transformation Index



Source: African Transformation Report 2014

Of particular concern is Mozambique's Productivity score. While manufacturing value-added by worker (in 2005 USD) increased from \$15,594 in 2000 to \$34,102 in 2010, this still compares unfavorably with the sub-Saharan African average of \$41,949. Similarly, the proportion of “medium and high technology exports” in total exports is low, 6 percent in 2010 (up from 4 percent in 2000), compared to 8 percent on average for sub-Saharan Africa – and again, even this low figure is boosted by the high technology exports of the megaprojects. The significantly low score on Human Economic Well Being is a function of Mozambique's still-low GDP per capita and the small share of labor found in the formal sector.

MANUFACTURING OUTSIDE OF THE EXTRACTIVES INDUSTRY

For this study, we concentrate on segments of the sector *outside* of the extractives industry. One of the richest sources of firm-level manufacturing sector data outside of the extractives industry is the series of surveys of small- and medium-sized manufacturing firms (SMEs) carried out by the

⁹ This approach also underlies the African Union's recently endorsed Transformation Vision for 2063, endorsed by Mozambique, which seeks the structural transformation of Africa's output and trade, strengthening of Africa's infrastructure and human resources, and modernization of Africa's science and technology.

Ministry of Planning and Development’s Directorate of Studies and Policy Analysis (MPD/DNEAP 2013).¹⁰

One of the 2012 survey’s key findings of interest to our investigation is the fact that SME manufacturing firms struggle with international trade. Only 3 percent of the sample was engaged in exports. It is notable – and worrying for our natural resource boom scenario of a possible significant strengthening of the metical – that “competition from illegal imports” tops the list of concerns and has increased in importance since 2006. Other trade-related constraints are also growing concerns. Fears about “opening up to international markets” are also troublesome, should imports become cheaper under an appreciation scenario. In both cases, if this is a growing concern *before* the natural resource boom sets in with currency appreciation, firms could be very threatened should the metical strengthen considerably. Macroeconomic stability – which includes exchange rate concerns – does not seem to pose a major constraint and is significantly less of an issue than in 2006. This is not surprising, given that the macroeconomic environment, including the exchange rate, has been fairly stable in recent years – our concern is with the future performance, which may not yet be on businesses’ horizons. Trade-related issues regarding Customs administration, trade regulations, and Customs-related corruption are also of concern and on the rise.¹¹ Interestingly, access to land and transportation are both highlighted as constraints – and these are likely to become more problematic, should Dutch disease occur.¹²

Table 4: SME Firms & Selected Business Environment Constraints

Constraint	% Citing as Concern in 2006	% Citing as Concern in 2012
Competition from illegal imports/contraband	54.8	56.8
Access to land	13.9	46.2
Customs & trade regulation administration	36.8	44.7
Corruption related to customs	30.5	43.2
Anti-competitive practices	26.4	39.0
Access to domestic credit	58.0	38.7
Transportation	25.0	38.7
Opening up to international markets	17.9	36.5
Macroeconomic instability	61.6	33.8

Source: MPD/DNEAP 2013

¹⁰ The 2012 survey includes over 700 firms in ten cities and seven provinces of Mozambique, 216 of which form a panel from previous surveys in 2006 and 2009, allowing for an understanding of firm dynamics over time. Manufacturing firms were defined as firms with no less than 50 percent of sales in manufacturing sectors. The survey defines manufacturing as ISIC rev. 3 divisions 15-37; these are equivalent to ISIC rev. 4 divisions 10-33.

¹¹ Since this survey was undertaken, Mozambique’s Single Electronic Window was launched. An early assessment of its impact, conducted nine months after launch of service of two modules, reaffirmed firms’ dissatisfaction (Claypole 2013), suggesting that a new evaluation be undertaken to see whether firms’ concerns have been addressed.

¹² While land is not bought and sold in the traditional sense in Mozambique, nonetheless buildings and “improvements” to land can be sold, so we would still expect a Dutch disease-like effect on prices of these non-tradables.

When reviewing constraints disaggregated by firm size, medium-sized firms seem to feel more constrained by external, trade-related aspects than micro and small firms. This could imply that medium-sized firms – those more likely to create jobs and become exporters – would export more if they were less constrained by these aspects. Medium-sized firms seem less credit-constrained – the *cost* of financing is seen as a constraint, rather than *access* to financing, but the high incidence of firms citing issues related to competition from illegal imports, customs and trade regulation and administration, and corruption related to customs suggests that these firms could be sources of exports, if these constraints were removed.

Moreover, some sectors have natural protection and have been more successful. The DNEAP study commented ‘... sectors that are not subject to considerable competition from imports have done well..., while sectors with tougher competition from imports (such as apparel, metals, and machinery) have been forced to downscale their operations and/or produce more efficiently using less labor-intensive methods’ (MPD/DNEAP 2013, 32).

Additional findings from the MPD/DNEAP study include: Firms are not creating jobs. Micro firms tend to stay micro, small tend to stay small, and medium tend to stay medium. Median employment growth was negative for all firm sizes, whether formal or not. However, foreign ownership makes a difference. Foreign-owned firms have experienced more employment growth than Mozambican firms, are more likely to be formal, and are far more likely to export.

A surprisingly high share of firms survives over time, which could indicate tenacity/stability or a lack of dynamism whereby unproductive firms are not exiting the market. Firms in the textiles and apparel sector have much lower survival rates, however. As described in Box 2, the textile and apparel industry in Mozambique has diminished significantly in the last ten years.¹³

It is of concern for manufacturing sector competitiveness that minimum wages are increasingly de-linked from productivity.¹⁴ Real wages in manufacturing have increased steeply, above productivity levels.¹⁵ The 2011 manufacturing sector minimum wage was higher than the median value-added per employee in the micro informal sector. Even for the formal sector, median wages in micro-sized firms were not much higher than the minimum wage, suggesting that at least some formal firms generate value-added per worker below the minimum wage. This leads the authors to conclude that “the minimum wage is above labor productivity for a large part of the Mozambican workforce.” Moreover, labor productivity may be declining. Looking at 2006 and 2011 data, labor productivity, measured by median revenue per worker, seems to have declined for all sizes of firms covered by the survey (micro, small, and medium).

¹³ The garment industry is notably “footloose,” that is, its low capital-intensity makes it easy to move out of a country if the business environment is no longer favorable. Other manufacturing industries either cannot pick up and leave, if their capital is already invested here, or may choose not to invest in Mozambique, if they perceive that more favorable business environments are available elsewhere.

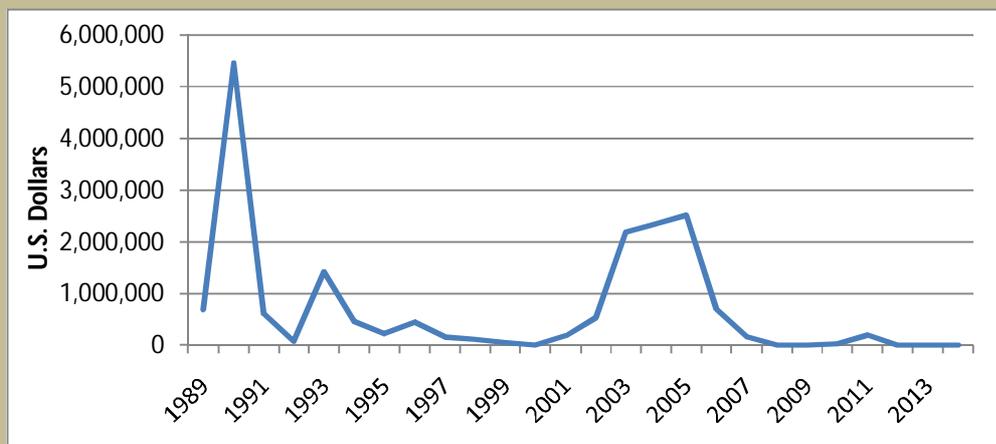
¹⁴ The survey asked firms about the extent to which labor regulations and skills/education of workers, but not whether rising wages or wage/productivity relationships, were of concern.

¹⁵ Nominal wages increased by 115 percent from 2006 – 2011, while the price level only increased by 60 percent.

Box 2: The Rise & Fall of Textile & Garment Manufacturing in Mozambique

Mozambique's textile and garment industry offers one example of the disappointing record that has characterized a once-promising segment of manufacturing. In 2000 when the United States Africa Growth and Opportunity Act (AGOA) was passed, offering duty-free access to the U.S. clothing market for exports from sub-Saharan African countries that complied with AGOA's rules of origin or exemption rules, Mozambique, like many other African countries, hoped this would jumpstart export-oriented manufacturing and bring a new source of wage employment, with all of the positive spillover benefits that such industrialization offers. In 2004 SPEED's predecessor project, the Trade and Investment Program in Mozambique (TIPMOZ), offered a textile and garment industry strategy based on perceived competitive advantages at the time: abundant supply of low-cost labor, access to ports and shipping, and a stable political and macroeconomic environment. On the other hand, the strategy was realistic about the steepness of the competitiveness hurdles to be faced, including labor, Customs, transport/shipping, and other business environment issues (Minor 2004).

Value of U.S. Textile and Apparel Imports from Mozambique, 1989-2014



Source: U.S. Department of Commerce, Office of Textiles and Apparel

Those hurdles turned out to be fatal. After expiry of the WTO Agreement on Textiles and Clothing, global apparel companies concentrated their efforts in countries with favorable production platforms, especially in Asia. The value of Mozambique's apparel exports to the United States, surging when the TIPMOZ strategy was offered, has evaporated. A few remaining companies export to neighboring South Africa, but quantities are small, productivity low, and profitability questionable. While Mozambique's macroeconomic environment today still looks stable, its security environment has appeared less reassuring, its labor force is no longer low-cost, and the benefit of coastal access to ports is somewhat negated by weak trade facilitation institutions that contribute to Mozambique's rank of 110 out of 150 countries, according to the Logistics Performance Index.

Thus the insights from the MPD/DNEAP survey suggest to us that international market competition, whether in terms of "opening up to international markets" or "competition from illegal imports," is already a serious concern for a notable share of firms surveyed. Also, the survey paints a picture of SME manufacturing firms as fairly stable or non-dynamic, neither creating new employment nor engaged in a normal process of repeated creation and dissolution that would allow less-competitive firms to exit the market; such exits are good for an economy, reflecting a healthy level of competition that should lead to higher productivity and competitiveness.

GOVERNMENT STRATEGIES TO PROMOTE INDUSTRY

The constraints faced by the manufacturing sector are not new. Government and donor initiatives have been designed to address them, although generally these focused on the private sector more broadly, rather than manufacturing specifically.

Industrial policy, encompassing a range of government actions and collections of policies to encourage development and production of sectors with potential for growth (Menon 2014), can be vertical (i.e., targeting support at specifically chosen sectors or “picking winners”) or horizontal (i.e., an overall policy approach that aims to make the business environment more conducive to industrial development through eliminating constraints such as poor infrastructure, fiscal, legal, and regulatory regimes, etc.). Given Mozambique's stage of development and the poor record of success at “picking winners” in many countries, it would seem that a horizontal approach to industrial development would have the greatest chance of enabling Mozambique to foster nascent industries, attract industrial investment, create jobs, and contribute to the development of a diversified economy that is not too heavily dependent on extractive industry. In general today around the world, horizontal approaches are the more prominent in official policy, although examples exist of specific state interventions that are more vertical or sector-specific.

Such an approach requires coordination across various government institutions. While the Ministry for Industry and Commerce is central to industrial policy, many of the most widely cited constraints to business are outside its mandate – for example, workforce, infrastructure, power, and financial issues. Thus it is important that any industrial policy be a coordinated approach under an overall development strategy that pulls together these various agencies. Mozambique's national policy statements relevant to manufacturing include the following:

- **PARPA I/II and PARP** The government's action plans for poverty reduction have moved away from a focus almost exclusively on social sectors (PARPA I, 2001-06) towards recognizing the need for economic growth. PARPA II (2006-10)'s priorities included promotion of agro-industrial and labor-intensive manufacturing (PARPA II, p. 34-5). The PARP continues the shift and emphasizes improving the business environment for SMEs as a way to promote job creation. There has never been a clear link between the successive PARPAs/PARPs and sector plans, which often have different time horizons.
- **SME Strategy** The 2007 Strategy for the Development of Small and Medium Size Enterprises in Mozambique recognizes the key role SMEs can play. The Institute for the Promotion of Small and Medium Enterprises (IPEME), established in the Ministry of Industry and Commerce, is defining strategies for four sectors – agribusiness, textiles and clothing, chemicals, and rural industrialization (Kaufmann and Krause 2011).
- **The Strategy for the Improvement of the Business Climate (EMAN I, 2008-2012) and its successor (EMAN II, 2013-2017)** seek to simplify procedures for doing business and improve competitiveness, through cutting red tape and deregulation in many areas; reform of procedures for starting businesses, licensing and payment of business taxes and implementing mechanisms to ease access to credit. Implementation, however, has been hampered by lack of government capacity to implement reforms, especially at lower levels of government, funding, and coordination across government and with the private sector (Kaufmann and Krause 2011).

- **Industrial Policies** Mozambique's industrial policy (1997, 2007, and a new version under development) has utilized a set of horizontal policies (e.g., creation of industrial free zones, promotion of quality, development of human resources, improvements in the legal framework, and improving access to imports) and, as of 2007, a more vertical approach targeting particular sectors (e.g., textiles and apparel). Failure to implement their main objectives undercut the policies' effectiveness, leading to firm closures in chosen sectors (textiles and apparel) (Menon 2014; see Box 2). The new industrial policy will hopefully build on, and operationalize, the strategic focus of the ENDE (see below).
- **Special Economic and Free Trade Zones** To encourage export-oriented industrial investment, Mozambique has developed specialized physical areas and duty treatment categories, managed by the Special Economic Zones Office (GAZEDA). Companies in Industrial Free Zones access imported capital goods and inputs free of import duties, VAT, and excise taxes, receive higher foreign worker quotas, and corporate tax exemptions/reductions, provided that 70 percent of output is exported. Special economic zones (SEZs) have not yet seen much activity. A large, "general" SEZ was established in Nacala, linked to development of the railway; other "thematic" SEZs (i.e., focused on specific sectors, such as logistics or tourism) are in initial stages or are planned.
- **National Development Strategy** The recently approved National Development Strategy (ENDE) is a 20-year vision that places industrialization and a diversified economy at its heart (*República de Moçambique* 2014). It proposes a mix of horizontal strategies, identification of priority sectors (agriculture, fisheries, manufacturing, extractive industry, and tourism), organized into four pillars: human capital development, industrial infrastructure development (industrial parks, special economic zones, transport infrastructure etc), research and development, and institutional coordination. The ENDE could provide the framework for the five-year plan and development of detailed strategies in sectoral ministries. It remains to be seen whether it will have sufficient institutional support at the highest levels to play a coordinating role across government.

Policies and strategies that favor industrialization and creation of an enabling environment for private sector development are an important step toward building the structural transformation of an economy. However, although an estimated \$10 billion USD have been spent by donors on private sector development projects, two of Mozambique's business representative organizations (CTA and ACIS 2013) argue that reforms of the business environment have stalled, government actions have been ineffective, and pressure for protectionist measures is rising. International benchmarks bear out lack of forward progress on pro-business reforms. Mozambique ranks 133 out of 144 on the World Economic Forum's 2014-15 Global Competitiveness Index, and has moved only tentatively on the Doing Business index over recent years. However, with a long gestation period, there are signs that some reforms have had positive impact on specific aspects.

Overall, manufacturing in Mozambique faces a difficult business environment. If the sector is already struggling and uncompetitive, any worsening of one aspect of its operating environment – such as an appreciation of the metical due to the potential onset of Dutch disease – could be catastrophic, both to existing firms and to government's stated desire to industrialize.

3. Assessment Findings

STUDY APPROACH

SPEED consultants worked with the CTA and drew from recent literature to identify a set of manufacturing firms to be interviewed.¹⁶ A sample of 27 firms was compiled, across industrial divisions; see Table 5 for sample coverage. The sample is representative of the broader population of non-extractives industry companies that manufacture today in Mozambique. Interviews were held in August 2014. In a few instances, the firms interviewed are not currently manufacturing in Mozambique, but may have plans to do so or may have considered manufacturing and decided against it.¹⁷

Table 5: Manufacturing Study Sample

ISIC Code	Sector	Number of Firms	Examples of Products
10	Food processing	6	Animal and dairy products, fruit preserves, milled grains, pastas, cooking oil, prepared foods, animal feeds
11	Beverages	5	Soft drinks, mineral waters, spirits, malt beverages
13, 14	Textiles, garments	3	Cotton thread, garments (shirts, trousers)
15	Footwear	1	Work wear, heavy duty boots
16	Wood products	1	Railway sleepers, semi-finished wood pavers
17	Paper products	1	Packaging materials
20	Chemicals	2	Paints, blended fertilizers
23	Non-metallic mineral products	2	Cement
25	Fabricated metal products	3	Corrugated steel, structural steel roofing, metal safes
28	Machinery & equipment	1	Maize grinding mills, wood saw mills, hand presses (honey)
29	Transport equipment	1	Truck trailers
31	Furniture	1	Wooden chairs, tables, bed frames, armoires, couches, accessories
	TOTAL	27	

The investigation checklist used to guide the interviews sought information regarding structure of markets and value chains, main sources of competition, qualitative competitiveness and primary cost drivers, business challenges faced, and perceived vulnerabilities to currency appreciation.

Firms interviewed vary by sector, products, scale, capital- versus labor-intensity of the production process, source of raw materials and/or intermediate inputs, ownership, degree of innovation or

¹⁶ It was not possible to obtain the sample used in the 2012 MPD/DNEAP survey.

¹⁷ The local subsidiary of a multinational food products company is evaluating whether to manufacture processed foods for the domestic (and possibly regional, of products that are not being otherwise produced by fellow, regional subsidiaries) markets. A transport vehicles company had considered manufacturing truck trailers in Mozambique, but decided against it because of strong competition from Chinese firms. And a textile company is just setting up its operations for eventual value-added processing and export.

differentiation in the products, targeted markets for output, and degree of competition found in the domestic marketplace. Distribution of the sample by ISIC division is presented in Table 5.

SAMPLE CHARACTERISTICS

Enterprises interviewed ranged in size, although most would fit the Ministry of Planning and Development's definition of medium-sized enterprises.¹⁸ We spoke with two micro firms (a boutique firm manufacturing metal safes with 7 employees and an enterprise producing foods and beverages from locally harvested, wild and cultivated produce) and a few small (for example, a steel products firm in Beira with fewer than 30 employees) firms, most of the firms interviewed are medium-sized firms with between 50 and 299 permanent employees.¹⁹ Large firms ranged from those with just over 300 employees (e.g., Maputo Clothing Company, TCT Dalmann) to those with several hundred (e.g., *Companhia Industrial de Matola*) to over 1000 employees (e.g., *Cervejas de Moçambique* (CDM) and Coca-Cola).

The sample of firms includes both wholly Mozambican and wholly foreign-owned companies, with a wide range of joint ventures. A few of the companies are local branches or subsidiaries of multinational or regional companies (e.g., Nestlé, Coca-Cola, Intersteel Rollings, and CDM, which is owned by SABMiller). A few firms were launched by regional investors (e.g., Greenbelt Fertilizer), but may now be wholly Mozambique-based (e.g., Cheater Industrial Roofing). In a few instances, international non-profit organizations may comprise part of the firm's capital (e.g., LevasFlor is jointly owned and operated by the Anglican churches of Mozambique and Sweden).

Although challenging to quantify (this investigation did not ask firms to elaborate specific costs of production, though it did ask about relative shares of key cost drivers), the degree of value added by manufacturing in Mozambique varies greatly within the sample, depending on the products made, the level of transformation performed, and the services added to the sale of goods.

A few of the interviewed firms develop and process their own raw materials. These include CDM, which incorporates locally produced maize and cassava into some of its beers; Gutsamba, which harvests wild forest fruits for flavorings and ingredients in its liqueurs and preserves; MCM, a just-launched textiles firm that will produce seed cotton through outgrower contracts for spinning into thread (and eventually, it is hoped, additional value-added products); and LevasFlor, a wood product firm, and TCT Dalmann, a wooden furniture firm, which process timber from their own forestry concessions.

In contrast, many of the companies interviewed for this study import their raw materials or intermediate inputs, from South Africa, Asia, and elsewhere. These raw materials and inputs are

¹⁸ MPD/DNEAP (2013) notes, "The size dimension is divided into three size categories using the standard World Bank definition; micro (1-9 employees), small (10-49) and medium (50-299), counting only full-time permanent employees." In fact, size classifications seem to vary among international organizations. A paper prepared for the Consultative Group to Assist the Poor bemoans the lack of a standardized definition (Ardic et al. 2011).

¹⁹ About one-quarter of the firms indicated that they hire additional temporary labor on a seasonal or as-needed basis.

then ground, cut, sawn, planed, blended, sewn, shaped, canned, bottled, or otherwise assembled to produce final products.

Products manufactured by firms in the sample range from standardized (e.g., t-shirts, basic trousers) to design-intensive (e.g., high-end, wooden furnishings) or “aspirational” brands. However, even if the goods are somewhat standardized many companies seek to provide some qualitative form of competitive differentiation. For example, Greenbelt Fertilizer custom blends fertilizer components to provide products that respond to specific soil types, thereby offering extra value-added to customers who do not necessarily understand which blends they need. CDM offers a range of beers, differentiating by ingredients, alcohol content, price point, and responsiveness to regional tastes. *Companhia Industrial de Matola (CIM)* produces a range of milled maize flour products to address various market segments. Both of the steel products firms with whom we spoke offer custom cutting and shaping to manufacture steel products to customer specification. These dimensions provide an additional competitive edge for firms.

A few of the companies interviewed operate in product segments that are likely to boom, along with the natural resource extractives industries. Both cement producers interviewed in Beira have only recently come online (one is still in progress, one has only become operational in the last year), the results of foreign investments or joint ventures that anticipate a surge in construction in Mozambique and thus a sharp increase in demand for concrete. One is also contemplating investment in northern Mozambique. A wood products company's staple production of railroad ties (sleepers) has benefited from the railway investments being made by the coal industry. And both steel products companies interviewed are eager to provide construction materials to an expanding industrial, commercial, and residential real estate market.

Not only the products themselves, but also the strategic, long-term view taken by managers with regard to Mozambique's economic growth would seem to strengthen firms' competitive positions. Some manufacturers are responding to short-term market opportunities. Others are anticipating structural changes in the economy. They see that a booming economy will require provision of x and y goods in order grow faster and are preparing for that now. Still others are thinking ahead to the emergence of a middle-class in Mozambique whose consumer tastes are going to grow and evolve, and are preparing to manufacture a wider assortment of consumer goods to meet those demands. These latter firms are not immune to Dutch disease pressures, but their strategic business plans may provide elements (e.g., diversification of products or markets, financing, etc.) that may make them more resilient to such pressures.

Few of the firms interviewed aspire to export their production, even within the region. Most perceive their local market shares as secure and see exporting as a headache, with a good deal of risk. In the case of foods and beverages, there are additional regulatory hurdles to climb. Several companies mentioned that they have been contacted by the USAID-supported Southern Africa Trade Hub, i.e., they are aware of available sources of technical guidance should they decide to pursue regional markets.

There are, however, several exceptions. Textile and clothing companies export all of their production, operating as “free-zone factories,” i.e., they receive imported inputs (fabrics, trims)

under a duty drawback system. LevasFlor's production is sharply demarcated between a reliable seller on the domestic (and sometimes regional) market (railroad ties/sleepers) and an exportable, semi-finished product sold to China (wood pavers for parquet flooring manufacture). Greenbelt Fertilizer exports in the region, particularly to Zimbabwe, Malawi, and Zambia. TCT Dalmann occasionally ships to South Africa (to individual clients), and transport costs are high.

Finally, manufacturing firms are quite differentiated by the extent to which they perceive competition pressure from outside for their market share. In numerous instances, managers spoke confidently of their product quality, unique position in the market, and the consumer brand loyalty that these confer. In cases of companies that produce more standardized products, managers spoke more nervously of foreign suppliers' actual or feared encroachment in the domestic market, lamenting the limited or lack of tariff protection. In some cases, firms are very aware of the fact that the rand has depreciated significantly over the last 18-24 months, giving South African suppliers a cost-competitive edge over them in the Mozambican market (in some ways, a preview of what may happen if a more generalized metical appreciation takes place). One manufacturer indicated that he passes cost savings from cheaper South African imports of raw materials along to his customers.

Some companies are already feeling the pressure of being undercut by South African or Asian suppliers. Surprisingly, some companies had never taken exchange rate fluctuation into account when weighing the costs and benefits of actual or potential investments – or if they had, it was a *depreciation* scenario that they had considered. Also, for those companies that rely heavily on imported inputs to manufacture for sale in Mozambique, managers were cheered by the prospect of a stronger metical that would further reduce the cost of their imported inputs, without necessarily factoring in that their importing competitors would face the same benefits. One company currently manufacturing products in Mozambique speculated that it would shift to importing less expensive goods and selling those instead to customers. For one firm, the cycle of importing raw material, adding value, and selling is of a sufficiently short time cycle (i.e., materials are sourced from South Africa on-demand and little product inventory is kept on hand) that its manager believed an appreciating metical would have little effect on his firm's business.

GENERAL CONSTRAINTS ON MANUFACTURING IN MOZAMBIQUE

How well individual firms can operate within the business environment in Mozambique is another dimension of firm competitiveness. For some managers, working through the levels of red tape and connection-building required to establish trust with government decision makers is part of their business strategy. This becomes part of their comparative advantage, since these aspects of the business environment act as an effective barrier to entry. For others, developing partnerships with related firms in order to be able to bid on large projects as an ensemble is a key strategic element. Some firms have learned that they need to build their own, or redundant, infrastructure in order to compensate for local infrastructure shortcomings. Developing local storage and distribution networks is another key element, especially for firms with larger-than-local market aspirations or operations, particularly crucial in a country as large as Mozambique. Similarly, for firms that process locally produced materials, developing supplier networks and helping those suppliers meet their quality and market timing requirements is another key

dimension of doing business. Such aspects of business are, in a way, a sunk cost of already operating in Mozambique.

During our interviews, a number of constraints on business operations were repeatedly raised by managers. While not directly related to Dutch disease, a weak and constrained manufacturing sector is likely to be hit even harder by any potential shocks – including those associated with Dutch disease. Therefore, in this section we briefly summarize the general business environment facing Mozambican manufacturers.

Operating in manufacturing in Mozambique is a risky business, in part due to uncertainty. Firms we spoke to had come up against unexpected costs to start or expand their businesses, while others mentioned unexpected increases of significant size in key costs. Forestry companies faced a tripling of license fees in one year and an increase of 92 percent in electricity costs from one month to the next. Other firms faced lack of clarity in interpretations of particular laws or regulations and what they felt to be unrealistic fines or outright harassment by government inspectors.

Uncertainty can limit firms' willingness to invest in higher value-added processing. For example, one sample company exports semi-finished wood pavers to China, where they are cut into thin veneers and assembled into parquet flooring, which is then shipped to Europe. Asked why not invest in equipment capable of producing such veneers and add greater value in Mozambique, the firm indicated that high costs are dissuasive. A regional firm that manufacturers truck trailers had considered establishing manufacturing in Mozambique. However, upon close review of costs, the company opted instead to continue to import them from South Africa and sell in Mozambique.

Box 3: Managing Unexpected Costs

One recurring theme we encountered involves tales of unexpected costs hampering the start-up or operation of manufacturing firms. One company interviewed was in the process of a major expansion to increase significantly its production capacity. The firm had been allocated a piece of land to construct a new factory, but it had no access road. After some discussions with the local council, the company needed to invest US\$2 million itself to build a road in order to make use of the allocated land. Another company, foreign-owned, had been guaranteed electricity supply by the state electricity company EDM, only later learning that they would have to construct an electricity sub-station in order to use it.

Box 4: No Longer Competitive on Wages?

A garment factory cited the example of an Asian competitor that also produces for one of its end clients. Wages in Bangladesh are said to be US\$90 per month for a 12-hour day, compared to a monthly minimum wage in Mozambique of US\$130 for "eight very unproductive hours." A number of Mozambican companies claimed that wages had increased faster over recent years than could be justified by improved productivity.

Labor productivity was repeatedly cited as a source of frustration and increased costs. This is related to absenteeism, lateness, and lack of focus on the job. In a production line such as the clothing factories we visited, this can cause stoppages as certain areas of the line are obliged to stop and wait for others to catch up. A number of companies expressed frustration that minimum wages increased significantly above the rate of inflation and far in excess of rates of productivity improvement.

Instability of electricity supply is clearly a major issue, with one manufacturer telling us that it experiences stoppages equivalent to 10-15 percent of normal work hours, due to electricity supply issues, which they identify as one of the main factors for being uncompetitive, compared to South African producers of similar products.

One manufacturer, whose main clients are government institutions, mentioned serious cash flow problems due to delays in payment. The firm has developed a system whereby clients are “cut off” once they reach a certain limit, in order to limit risks to cash flow.

Interestingly, many of the firms in our sample are aware of, but rarely use, short-term financial instruments offered by banks to buy forward cover on exchange rates.²⁰ Payment for such a service could be a worthy expense if exchange rate volatility were a serious concern. Currently in Mozambique it is not a worry, so instead firms prefer to negotiate with a number of banks to get the best day rate at the time of the transaction. Another interesting finding was that few of the firms mentioned access to finance or cost of finance as a constraint, which differs from the findings of the DNEAP study. This may be because we simply asked for key constraints, whereas the DNEAP survey gave a pre-selected list to choose from. It may be due to the fact that our sample involved larger or more predominantly formal firms. Or, this might imply that financing constraints are not as binding as suggested by the survey results.

Repeated mention was made of inefficiencies with Customs and, in particular, with the ports. Many firms transport products across the country, at great expense, by truck. Moreover, many claim that if the ports functioned efficiently, allowing establishment of an internal cabotage system, they would undoubtedly use it. In fact, two of our interviewees had tried to send products by sea from Maputo to ports in the north of the country, but found that the costs and inefficiencies – which ranged from not knowing when the ship would be able to enter port, to delays in loading and costs of the ship staying longer than planned in port, and uncertainty over when the product would arrive at its destination – meant that it simply did not make sense to continue to use this option.

Constraints that might be more directly affected by Dutch disease obviously include exchange rate or international trade constraints, and the likely increase of costs of goods and services, such as transport and access to land.²¹ A number of companies stated that transport costs are already too high, when compared with the region. One felt that some effects of Dutch disease are already being felt, as the surge in demand for transport in the center and north (related to booming coal and gas business) is already having an impact on transport prices across the country.

²⁰ The bank agrees to pay a supplier in the supplier’s currency a few weeks or months in the future, for a metical value fixed at the beginning of the period. This allows the company to know in advance how many meticals it will have to pay for a product in the future. In the current, stable exchange rate environment, however, firms prefer to simply negotiate with their banks to set the rate, rather than paying banks for assured forward coverage.

²¹ A previous SPEED study (Salinger and Ennis 2014a) concluded that while theoretically under Dutch disease wages in certain sectors would rise, given the highly segmented nature of the Mozambican labor market there is unlikely to be a strong upward effect on wages at any but the highest skilled levels.

Competition from imports is a significant problem faced by a number of firms interviewed, with manufacturers from China being the biggest perceived threat, in goods ranging from shoes to cement to metal products to truck trailers. Often, firms stated that Chinese imports are of lower quality but are far cheaper. Some stated that customers had previously tried Chinese products and reverted to locally manufactured ones. However, the general consensus is that lower priced imports is one of the biggest problems for many companies. Some firms allege that Chinese companies evade duties and thereby create illegal and unfair competition. Others stated that Chinese firms are “willing to pay to get things done” and can therefore more easily operate in an uncertain environment. Illegal importing in general, i.e., avoiding duties and Customs, was cited as problematic by several companies.

Box 5: Illegal Imports and Imports of More Competitive Substitutes

One company complained that both *illegal imports* – i.e., the entry of competing goods into Mozambique without paying duties or taxes, particularly from neighboring countries – and *legal imports* from more efficiently producing countries are significant problems that are reducing sales. This company is struggling, has laid off staff, and has put major expansion plans on hold.

LIKELY IMPACTS OF THE NATURAL RESOURCE BOOM

To predict the potential impacts of the natural resource boom on manufacturing in Mozambique, we created a number of firm categories to capture structural and market characteristics that may determine influence the impacts of natural resource boom-induced “Dutch disease” on their operations. It should be noted that this is a partial analysis, as we have no way of knowing what firms who are *not* currently manufacturing in Mozambique would do under a non-Dutch disease scenario. We also at this stage have no way of knowing how severe Dutch disease would be, and have thus concentrated on general drivers of resilience in the face of it, with “worst-case scenario” nominal currency appreciation hypothesized between 30 and 50 percent.²²

- **Degree of Exposure to World Markets:** The most important variable affecting a firm’s potential vulnerability to currency appreciation and shifting relative prices is the degree of a firm’s exposure to world markets. Significant currency appreciation means that, on the one hand, a firm’s imported raw materials and inputs become less expensive in metical terms. However, in the case of goods produced domestically for import-substitution, competing goods also become cheaper to import.

This underscores the importance of a firm’s ability to withstand competition from those cheaper imports. That ability to compete is sometimes determined by costs, sometimes by qualitative factors.

²² At 30 MT/\$ one metical equals 0.033 USD. Appreciation to 20 MT/\$ means that one metical equals 0.05 USD. The increase in value is thus 50 percent ($0.05/0.03333 = 1.50$). This is a “worst-case” scenario that proxies a range of possible Dutch disease-type impacts on the nominal exchange rate, government spending, levels of domestic prices of non-tradable goods and services, and thus the real exchange rate.

In the case of goods produced in Mozambique for export, the price of which is most likely determined in world markets, the revenues, expressed in meticals, of those exports will decline, thereby reducing incentives to produce for export.

- **Share of Non-Tradables in Total Cost:** In addition, the degree of exposure to increases in the prices of non-tradable inputs, such as wage rates, commercial real estate, and transport costs, is also important.
- **Product Differentiation:** The extent to which a firm's business model focuses on manufacture of standardized, specialized high-quality, or "aspirational" (sought-after brands) consumer goods also affects their resilience to Dutch disease pressures.
- **Degree of Local Market Competition:** The degree of competition currently faced in the domestic market also plays a role.

Many other factors may have an impact on a company's profitability and survival, irrespective of the exchange rate, but these are not our focus here. Box 6 provides a sampling of firms' responses to the metical appreciation question. The sections below lay out preliminary analyses of possible impacts of Dutch disease under a hypothetical scenario in which other competitive factors (e.g., business environment, infrastructure, electricity supply, labor productivity, etc.) remain the same.

Box 6: Firms' Own Voices Regarding Dutch Disease

When faced with a hypothetical scenario of a strengthening of the metical from 30 to the U.S. dollar to 25 or even 20, some firms were sanguine and others very concerned, observing:

- 'The market is going to be booming, so we're not worried.'
- 'It would be good, our imported raw materials would be cheaper and [the strength of] our brand means we won't suffer competition from imports.'
- 'We could hold our own against imports due to our strong brand.'
- 'Most of our orders are short term, so we're not worried – we'd price in USD.'
- 'If imports start flooding in, we could import a cheaper line to run alongside our current one.'
- 'We've never thought about it, but our margins are already thin.'
- 'This would be a big problem, as Chinese goods will become even cheaper.'
- 'We would stop manufacturing and become an importer [instead].'
- 'It could put our whole production at risk.'
- 'We'd make a loss.'
- 'We would have to close down parts of the business.'
- 'We are not profitable as it is, so we'd just close.'
- 'We would just close down.'

Overall Outlook in the Face of Dutch Disease: Favorable

"Aspirational" Consumer Goods Producers

Firms in this category (examples include Coca-Cola, Nestlé, CDM, and Diageo) produce consumer goods with high brand recognition and strong customer loyalty. They see a booming economy and burgeoning middle class as an opportunity to increase domestic production and sales. Most of their raw materials/inputs are sourced internationally, such that an appreciation of the metical would decrease their costs. On the other hand, their strong brand recognition means

that they feel they are likely to be able to “hold their own” against cheaper imports. These firms typically operate at a fairly capital-intensive level, with electronic production lines that require highly qualified staff. Labor, however, is a relatively small proportion of overall costs and therefore while the business may suffer somewhat from increases in wages for skilled labor, this is unlikely to prove a serious competitive threat. However, increased transport costs would likely be significant for these companies, who distribute overland nationally, but are unlikely to pose a major threat to profitability.

Overall Outlook in the Face of Dutch Disease: Ambiguous, Possibly Firm/Sector-dependent

Weakly Differentiated Goods + Strong Value-Added Services

Firms in this category import raw materials/inputs into the local market, add some value (e.g., through simple value-added processing, such as cutting or combining ingredients or shaping metal/plastic), and sell fairly basic, undifferentiated final goods into the domestic market. These companies are likely to face strong competition from imports. The degree to which they can maintain market share may depend on value-added services that they bundle into their business model. For example, one cement factory plans to allow clients access to their laboratory in order to determine the optimal concrete mix for their needs, a fertilizer company is carrying out soil sampling to offer “custom-blended” fertilizers, a metal-shaping company offers custom shaping and assembly services by an experienced team. Other firms’ competitive strengths rely on established distribution networks and contacts, and possibly transport networks. New entrants could, of course, adopt such practices as well, but it will take them longer to establish themselves with the local customer base. However, that consumer base is likely to be changing, as more companies enter with commercial needs and a growing middle class demands more and more varied consumer goods. The established manufacturing firms most likely to succeed are those that can respond most efficiently to that changing base.

High Quality, Consumer Goods Producers

Firms that source local materials and sell high quality, finished products into the domestic market with little or no local competition might initially seem immune to Dutch disease. One example of this might be TCT Dalmann, a company with a forestry concession in Sofala that produces high quality, wooden furniture. Despite currently having little competition at the top end of the domestic furniture market, if the metical were to appreciate significantly, Dalmann could potentially face competition from importers that decide to move up-market in the goods they sell domestically.

Rising costs of non-tradables may be an issue. For example, Dalmann, which produces in Beira, could suffer from increased transport costs. As a company that employs a fair amount of skilled technicians (wage costs are almost half of total costs), rising wages of skilled labor under a potential Dutch disease scenario are of potential concern. However, it is felt that the skills utilized in this industry are not directly substitutable for the skilled construction workers likely to be required directly by the extractive industries in a natural resource boom, thus the wages in this sector are unlikely to rise due to demand from the extractives industry itself. However, if the natural resource boom leads to more general, rapid expansion of infrastructure or construction,

then even less-skilled workers may be pulled into those booming sectors with consequences for market wages. A booming economy could also encourage Mozambique's policymakers to raise official minimum wages, driven by aggregate GDP growth rates and thus perceived increased capacity of employers to pay higher wages.

It is, however, likely that demand will continue to be strong for high quality products as the economy booms, and it is likely that Dalmann has a sufficient consumer market niche to be able to continue to sell its full production – which is limited in volume, due to the timber harvesting limits of sustainable forestry – at a premium, so the likely impact on the business is difficult to ascertain.

Another example of a predominantly locally sourced product is a small food processing company called Gutsamba. Set up by a husband and wife team, Gustamba is still in a start-up phase, although over 40 shops already stock their product. While some of its intermediate inputs are imported (e.g., alcohol, bottles), liqueurs and jams are produced from local wild fruit and high quality piri-piri from locally produced ingredients. The company's original processing facility is in the greater Maputo area, but it will soon start producing pickles in new facilities in Inhambane. Given the uniqueness of its products and the limited substitutability for imported goods, Gutsamba is unlikely to face serious problems from Dutch disease due to exchange rate or relative price shifts. Its success is more likely to be related to its ability to market its products, establish more extensive brand recognition, and grow its distribution network. Although not yet in its strategic plan, Gutsamba's products could become high-value exports to South African markets, and a stronger metical would make that goal more difficult to achieve.

Overall Outlook in the Face of Dutch Disease: Difficult

Weakly Differentiated Goods

While Coca-Cola, Nestlé, CDM, and Diageo are international firms with high tech production lines and aspirational consumer products, smaller local companies who produce goods for the domestic market for which substitutes from regional or international markets are readily available (e.g., grain products, some beverages) may face a more pessimistic outlook. While benefitting from cheaper raw materials/inputs, they may be less able to retain market share, as competing imports of similar products become cheaper. Labor and transport costs may also become more problematic, should these increase significantly.

One example of this sort of firm is *Companhia Industrial de Matola (CIM)*, which produces maize meal, wheat flour, pasta, biscuits, animal feeds, etc. Based in Maputo, many of its raw materials are imported from South Africa, so a benefit in terms of reduced input costs might be expected. However, CIM is already facing significant competition from around the world for some of its main products – some due to the weakening of the rand against the metical (as evidenced, for example, in the increased imports of maize meal from South Africa) and some simply from competition from countries where productivity is higher (for example, imported pastas and biscuits). While still a fairly capital-intensive manufacturer, CIM employs a significant amount of labor (both in terms of total number of employees and proportion of labor in operating costs, which is over 40 percent), and could face some wage pressure under a Dutch disease scenario. Transport and trade facilitation costs are also felt by the management to be high already,

and if they went higher still, could become problematic for the company, which has plants in Maputo and Beira and supplies nationally. CIM is already taking cost-cutting measures such as rationalizing operations and has put planned future investments on hold for the short term.

Local Value-Added Processing for Export

“Cut-make-trim” (CMT) is an entry-level business model used in the global garment industry and represented in Mozambique by companies such as Maputo Clothing. Agents, usually end clients, often from South Africa, provide all imported inputs (e.g., cloth, buttons, labels, etc) and contract with Mozambican companies to cut, sew, and finish garments to order. CMT is considered to be the most basic garment company business model on the international value chain; the ability to source their own fabrics and trims or provide additional services (e.g., design, pattern-making, distribution) involves business skills that usually far exceed the capacity of entry-level clothing companies to provide. The main cost to the importing companies is Mozambican labor plus electricity and transport. CMT companies in Mozambique are paid for local costs only, which are 70-80 percent labor. However, similar to the case of the furniture manufacturer described above, due to the lack of skills appropriate to a booming economy in a natural resource expansion and due to the ease with which clothing companies can train entry-level workers to operate sewing machines, wages in this segment of manufacturing (of seamstresses, cutters, etc.) are unlikely to rise under Dutch disease pressure.

For garment companies doing business primarily with clients in South Africa, the impact of a currency appreciation is already being felt due to the recent appreciation of the metical against the rand. On the one hand, these companies receive their raw materials rather than purchase them, so they are not benefitting from reduced costs of imported inputs (and would also not under the scenario of a generalized appreciation of the metical). On the other hand, if the price of their CMT services is fixed in rand, then they will receive fewer meticais for every garment exported, although some South African clients have apparently raised the rates they are willing to pay, up to a point. Allied to a labor force that is paid more and yet is less productive than those of countries with thriving garment industries (e.g., Bangladesh, Vietnam, etc) and given operational constraints, such as frequent electricity outages, this sector is already suffering.

Standardized Goods for Export

Firms that source raw materials or inputs locally in meticais and export to the international market will not benefit from lower input costs. At the same time, their revenues in meticais from sales of goods on the world market will drop as the stronger meticais would mean that world export prices expressed in meticais will fall. There are very few firms in Mozambique in this category, producing from local materials for the world market, but a recent investment by a Portuguese company, MCM, plans to do this. MCM aims to have a vertically integrated cotton operation, contracting with outgrowers and operating a plantation in Xai-Xai for seed cotton production. The Riopole factory in Marracuene is being renovated to process the seed cotton into lint, thread, and cloth; eventually, garments will be produced as well.

While the company is not yet producing, significant appreciation of the metical could be prejudicial to the success of the investment. It should be noted that this type of firm has the potential to create large numbers of jobs (MCM expects to create 800-900 jobs, once the full

investment is implemented) and also as it sources locally, can provide opportunities for small local businesses and outgrowers to supply the factory.

SUMMARY

Table 6 summarizes the predicted effects of metical appreciation and relative price shifts on these six categories of manufacturing firms.

Table 6: Summary of Potential Dutch Disease Impacts by Firm Type

Manufacturing Firm Category			Overall Outlook in the Face of Dutch Disease		
Product Category	Destination Markets	Examples	Favorable	Ambiguous	Difficult
Aspirational Consumer Goods	Domestic	Brand-name foods, beverages	√		
Weakly Differentiated Goods + Strong Value-Added Services	Domestic	Intermediate goods, e.g., agricultural inputs, construction materials		√	
High Quality Consumer Goods	Domestic	Specialty consumer goods, e.g., foods, beverages, home goods		√	
Weakly Differentiated	Domestic	Basic foods, beverages			√
Local Value-Added Processing	Export	Clothing			√
Standardized	Export	Intermediate goods, e.g., threads, textiles			√

Source: Team analysis

Firms that are directly connected to global markets through exports and firms that produce weakly differentiated products for the domestic market, but for which imported goods could readily substitute, are most likely to face difficulties under a Dutch disease scenario. Companies that manage to differentiate themselves, either through the manufacture of more differentiated products or through the provision of additional services to customers to enhance their connections to them, may be more resilient to price pressures. Companies that produce “aspirational goods” likely to be consumed in greater quantities as consumer incomes rise, face the most favorable prospects under a natural resource boom scenario; however, these firms are not immune from competitive pressures of lower cost, imported substitutes.

In light of overall welfare and development goals, it should also be noted that according to our analysis those firms that have the most favorable outlook under a possible Dutch disease scenario are those that create the fewest jobs, being capital-intensive in nature and sourcing raw materials internationally rather than from local suppliers. On the other hand, companies that are labor-intensive, source locally, and export (thereby with the potential to create jobs directly and indirectly, and contribute to “learning through exporting”) have a difficult outlook under a Dutch disease scenario.

4. Conclusions

Based on detailed conversations with company managers, which were guided by an investigation framework that sought to understand the sources of competitiveness of manufacturing in Mozambique on both cost and qualitative/strategic levels, this study probed the sources of resilience and vulnerability to potential economy-wide changes that may be induced by the anticipated natural resource boom.

Costs certainly matter for manufacturing firms' competitiveness. Non-cost variables that present constraints to firms operating in Mozambique, highlighted in the 2012 MPD/DNEAP survey and found in our conversations with firms in 2014 include wage pressures relative to labor productivity, inefficient and/or expensive infrastructure and logistics, bureaucracy and governance issues, and competition with foreign suppliers.

The extent to which firms are exposed to price competition, either with global producers in export markets or from international, importable substitutes, is fundamental to firms' potential vulnerabilities to Dutch disease. Some companies have already looked at the Mozambican market and decided that they cannot manufacture here, due to cost pressures from imported alternatives. One firm, in reaction to a possible scenario of metical appreciation, stated that it would cease manufacturing in-country and provide more cheaply sourced imported goods to its customers. While that may demonstrate the nimbleness of one firm's management, it is not an auspicious omen for those who would like to see manufacturing, and the employment it promises, expand in Mozambique. Other firms that do business primarily with South Africa are already facing price pressures due to the rand's depreciation, and there are indications that this is already having an impact on jobs. However, some companies whose primary costs are in imported raw materials or inputs that are minimally processed into finished goods for sale in Mozambique, stated that a stronger metical would be a distinct *advantage* to them, allowing them higher profit margins or the ability to pass on cost savings to their customers.

These findings, more nuanced than the information that can be drawn from sample surveys, suggest hypotheses about various strategies being pursued by manufacturing companies in Mozambique to strengthen their competitive positions in a risky and rapidly evolving economy. Whether through brand creation, product differentiation, business diversification, source market diversification, business practices that offer higher value-added services to customers, or investments in the building of long-term commercial and professional relationships with clients, suppliers, and government officials, manufacturing companies utilize a range of tools to build their competitive presence and (hopefully) some measure of resilience to shocks. Whether these tools will be enough to help firms resist Dutch disease pressures, of course, remains to be seen. It is recommended that a panel of firms continue to be followed over the next several years in order to more formally test these hypotheses as the natural resource boom strengthens in Mozambique.

Another insight to emerge from this study is the dearth of labor-intensive, export-oriented manufacturing in Mozambique today. Exceptions are a few garment companies still operating in country, and the recent launch of a motor vehicle assembly plant in Machava. Attracting foreign and domestic investments to this sector, through a combination of special economic zones to

provide industrial infrastructure on par with international benchmarks, depreciated currencies, and access to large supplies of low-wage labor, was critical to the success of East Asia's structural economic transformation away from agriculture. Mozambique's industrial policy framework, indeed its overall national development strategy, the ENDE, sets out such a vision for Mozambique's medium-term future as well. Unless the pressures of the natural resource boom can be contained, such a vision may not be feasibly realized by Mozambique.

To achieve the vision of labor-intensive industrialization targeted by the ENDE will require investments in human capital (e.g., basic literacy, arithmetic, and problem-solving skills, as well as technical skills such as machine operators, mechanics, etc.); physical infrastructure (especially expanded electricity, water, sewage, road, and rail systems); productivity-enhancing technologies (or policies to facilitate firms' access to such technologies, such as tax or duty advantages or credit lines to promote capital investments); and institutions (everything from better port management to improved transparency regarding access to land) that will improve Mozambique's business environment.

It will also require setting policies – such as minimum wages – that balance considerations of workers' rights with productivity and Mozambique's competitiveness relative to that of other countries competing for investor dollars. To overcome a “silo” approach whereby each sector addresses one aspect of the larger reform, an overall reform coordination body located in the presidency, Prime Minister's office, or Ministry of Planning, tasked with pulling together these various strands in coordination with the objectives laid out in the ENDE, might be a worthwhile approach.

Beyond low tech manufacturing, of course, lies the promise of higher value-added processing. However, the many well-known challenges facing the manufacturing sector in Mozambique highlighted above will make it extremely challenging for Mozambique to attract these kinds of industries. Global competition for such investments is strong, and Mozambique's doing business indicators are simply too weak.

Policymakers always face real choices, i.e., trade-offs, in their decision-making. Mozambique's industrial policy, undergoing review at this time, should be guided by this distinction between low and high tech manufacturing and by the vision of a labor-intensive, employment-generating industrial sector. The policy should therefore have horizontal approaches to improve the business environment and encourage competitiveness across sectors as a medium-term goal, refraining from “picking winners.” At the same time, the longer term goals should be to help improve productivity over the next five to ten years, so that when the natural resource boom's effects begin to be felt, Mozambique's manufacturing sector will be ready.

Annex A. Meetings Held

Among the firms and organizations interviewed are the following:

- **Aguas de Vumba:** Eng. Hassan Jamu
- Antonio Franco, macroeconomist
- **Austral Cimentos:** Ahmed Hassanin (Dondo)
- **Beira Corridor Project** representative
- **Carmoc:** Sulemane Padamo
- **Cervejas de Moçambique:** Luis Palege (Beira)
- **Cheater Industrial Roofing:** Malcolm Donald
- **Cimentos de Beira:** James Trollip (Beira)
- **Coca-Cola:** Simon Everest
- **Companhia Industrial de Matola:** Christos Ellis, Sybrand Niekerk
- **CTA:** Kekobad Patel, Nuno Mangué, Eduardo Sengo
- **Conselho Empresarial Provincial, Sofala:** Jorge Fernandes, Armando Languene, Ramiro da Silva, Ana Maria Fernandes, Joaquin de Vowgonzebra (Beira)
- **Dhocolo:** Lazaro Matsinhe
- **Diageo:** Alex Alunni, Nelson Siteo
- **Ernst & Young:** Candido Ndimande
- **Greenbelt Fertilizer:** John (Porky) Christie-Smith (Beira)
- **Grupo MOPAC:** Eng. Hassan Jamu
- **Gutsamba:** Pedro Tomo
- **Henred Freuhauf:** Deon Lotz (Beira)
- **Instituto do Algodão de Moçambique (Mozambique Cotton Institute):** Norberto Mahalambe
- **Intersteel Rollings LDA:** Marco Natario (Beira)
- **Ipanema:** Edson Bourguignon, Jr.
- **LevasFlor:** Erik Swerup (Beira)
- **Maputo Clothing Co. LDA:** Mahomed Adam
- **MCM:** Jose Pinheiro
- **OFCM:** Julio Chilaule
- **Nestlé:** Diogo Victoria
- **Pintex:** Mumbaraque Abdulrazac
- **Saw Services:** Guilherme Matola
- **TCT Dalmann:** Graeme White (Beira)
- **Wissa:** Judite Pinto
- **Young Africa/AfriTech:** Raj A. Joseph (Dondo)

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