



2017

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Nissinoff, Adam Z., "An Investigation of the Role of the Chinese Private Sector in the Establishment of Sustainable Apparel Manufacturing in Sub-Saharan Africa" (2017). *Social Impact Research Experience (SIRE)*. 52.  
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## **Abstract**

Although global clothing production occurs predominantly in China and Southeast Asia, non-conventional locations such as Africa, the Caribbean, and even the US have recently garnered the attention of several of the world's largest apparel brands and manufacturers. This study synthesizes findings from meetings conducted with CEOs of three large apparel manufacturers at their headquarters in Hong Kong. Through primary site visits and interviews, common drivers of and deterrents for expanding production to Sub-Saharan Africa were identified with a focus on Ethiopia. Executives viewed this prospect with differing levels of enthusiasm (which can be explained, at least in part, by the choice-supportive bias of those individuals). While clear benefits of expansion emerged (including lower production costs, auspicious government policy, and support from brands), there were also non-trivial barriers. Although lack of education and lack of experience for workers represent surmountable barriers, the underdeveloped supply chain is a steeper barrier and one that warrants greater effort and consideration to overcome.

## **Keywords**

manufacturing, apparel, textiles, China, Ethiopia, supply chain

## **Disciplines**

Business | Operations and Supply Chain Management

An Investigation of the Role of the Chinese Private Sector  
in the Establishment of Sustainable  
Apparel Manufacturing in Sub-Saharan Africa

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*My heartfelt appreciation extends to Professors Marshall Fisher and Edwin Keh for their endless support in every facet of this research. I am also truly appreciative for the diligence of Robel Chiappini (WG'18) who was instrumental in carrying out this project.*

Social Impact Research Experience  
September 2017

## **Abstract**

Although global clothing production occurs predominantly in China and Southeast Asia, non-conventional locations such as Africa, the Caribbean, and even the US have recently garnered the attention of several of the world's largest apparel brands and manufacturers. This study synthesizes findings from meetings conducted with CEOs of three large apparel manufacturers at their headquarters in Hong Kong. Through primary site visits and interviews, common drivers of and deterrents for expanding production to Sub-Saharan Africa were identified with a focus on Ethiopia. Executives viewed this prospect with differing levels of enthusiasm (which can be explained, at least in part, by the choice-supportive bias of those individuals). While clear benefits of expansion emerged (including lower production costs, auspicious government policy, and support from brands), there were also non-trivial barriers. Although lack of education and lack of experience for workers represent surmountable barriers, the underdeveloped supply chain is a steeper barrier and one that warrants greater effort and consideration to overcome.

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**Disciplines:** business

## INTRODUCTION

China and Southeast Asia are the primary sourcing markets for many categories of goods. Apparel is no exception, and much of the world's clothing production is concentrated in this region. China, for example, accounts for 54 percent of global apparel production, 76 percent of apparel employment, and 40 percent of US apparel imports (Mamo and Gabriela 2017). Despite the apparent magnitude of these figures, increasing production costs are exerting pressure on apparel manufacturers in China and elsewhere in Asia.

The result of this pressure is manifested in China's declining clothing production since 2010 as the country shifts from an export-oriented economy to one aimed at supplying its own vast population (Berg et al. 2015a). Over the past five years, China's aging population and shrinking labor force have engendered many employers to raise wages to attract younger and more educated workers, as exemplified by *Table 1* (Hamlin 2017).

**Table 1. Monthly minimum wage increases in Shenzhen, China from 2013 - 2017**

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	2013	2014	2015	2016	2017
Minimum Wage (USD)	227	274	308	308	323

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The rising cost of producing clothing in China indeed provides a window of opportunity for new countries to emerge as manufacturing hotspots. A large-scale study conducted by McKinsey revealed that nearly 30 of the 40 apparel Chief Purchasing Officers surveyed expect to reduce their purchases from Chinese firms over the next five years (Berg, Hedrich, and Russo 2015b). As such, non-conventional locations such as Africa, the Caribbean, and even the US (which benefit from lower tariffs and/or shipping costs) have recently garnered the attention of several of the world's largest apparel brands and manufacturers (Hamlin 2017).

### *Motivation for Shifting Production to Africa*

It was rising wages that initially drove manufacturers to shift production from China to other Asian countries. The irony, however, is that these countries, too, are facing rising wages. At the same time, a number of high-profile industrial mishaps have transpired throughout Asia, often stemming from insufficient safety and labor standards (Mamo and Gabriela 2017). These incidents have served as an impetus for apparel manufacturers to investigate moving production out of the region.

The apparel industry is considered a first mover industry since it has travelled the world to "chase the bottom needle" since the 1960s. Clothing manufacturers enter new countries with primarily agrarian economies and seek employment on a large scale, which in turn paves the way for other industrial development. The labor-intensive process of producing clothing necessarily involves employment on a large-scale, and this can jumpstart industrialization for emerging markets (Mamo and Gabriela 2017). It is for this reason that government officials in Sub-Saharan Africa have eagerly embraced the arrival of foreign apparel brands and manufacturers, recognizing their role as catalysts for economic development and lending them support by virtually every means possible. What distinguishes textiles and apparel from other industries is

that the apparel production process is still highly manual in nature and thus relies heavily on low-cost labor. In addition, there is a relatively low skillset required for employees working in sewing plants. Finally, it is an accessible industry in terms of investment, with a new sewing plant costing as little as \$4 to \$6 million to establish with an ROI of approximately 2.5 years.

China, for example, was still in the relatively early stages of this process of industrialization in 1990, when apparel brands such as PVH were enhancing supply chains so that low-cost apparel products could be shipped efficiently to more developed economies. After firms such as Foxconn and those in the aerospace and automotive sectors entered China, however, low-cost laborers willing to work in the apparel space became scarce. The result is that a series of Asian countries trailed behind China, including Sri Lanka, Bangladesh, and Vietnam, each following a similar pattern of development. Over the past thirty-plus years, manufacturers moved production from country to country in search of the lowest wages, and clothing prices deflated dramatically in the US and Europe. The upshot is that consumers have become accustomed to apparel prices falling or remaining the same.

When considering the global economy, the last frontier for sourcing appears to be Sub-Saharan Africa. This region is enticing to brands and manufacturers not only for its low-cost labor, but for that it provides an opportunity to implement best practices from the beginning. Thus, even during the early stages of industrialization, manufacturing can be introduced in a way that complies with the most stringent international safety and environmental standards. As such, it is plausible that Africa will one day be at the epicenter of emerging market investment.

However, despite these draws, Ethiopia still accounts for a mere 0.01 percent of total apparel exports (Berg et al. 2015a). This study attempts to explain this disparity, and it does so through the lenses of several large, private apparel manufacturers in China. First, the benefits of producing clothing in Africa are delineated, including lower production costs, auspicious government policy, and support from brands. Next, several barriers to doing so are identified. Although lack of education and lack of experience for workers represent surmountable barriers, the underdeveloped supply chain is a steeper barrier and one that warrants greater effort and consideration to overcome.

## **RESEARCH METHODOLOGY**

This study synthesizes findings from meetings conducted with CEOs of three large apparel manufacturers at their headquarters in Hong Kong. Through primary site visits and interviews, common drivers of and deterrents for expanding production to Sub-Saharan Africa were identified with a focus on Ethiopia. Each meeting included the CEO of the company. Since the companies in this study are large with operations spanning multiple continents, it was often the case that there were employees other than the CEO who were instrumental in leading the efforts in evaluating an African expansion. In such cases, these employees were also present for the meetings.

Although personal communication with company executives forms the backbone of this study, relevant literature is also incorporated. Existing research is useful in that it provides additional substance on topics broached during the interviews and supplies broader historical context where needed.

As a convention in this paper, the names of manufacturers will be denoted by the first three letters in the English alphabet to preserve their identities. That is, the terms “Company A,” “Company B,” and “Company C” will henceforth be used in place of the official names under which the companies were incorporated.

A profile of each manufacturer with respect to its number of employees, number of factories, number of garments produced in a year, and revenue is provided in *Table 2*. These metrics can be used to gauge the relative size of each company.

**Table 2. Selected metrics for each company**

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<b>Company</b>	<b># Employees</b>	<b># Factories</b>	<b># Garments Produced / Year</b>	<b>Annual Revenue (USD)</b>
A	~25,000	11	56m	\$850m
B	~46,700	15	72m	\$500m
C	~70,000	20	250m	\$1.3b

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**Notes:** Metrics are drawn from promotional materials as well as from personal communication with each firm’s leadership.

Each manufacturer has a wide-array of global customers. Examples include Abercrombie & Fitch, Banana Republic, Brooks Brothers, Burberry, Calvin Klein, H&M, JC Penny, Levi’s Macy’s, Uniqlo, Victoria’s Secret, Walmart, and many others of similar magnitude.

Table 3 delineates the proportion of business that stems from each end market, as well as the existing production bases for each firm. At the time of this paper, Company A and Company B have operations in Africa, whereas Company C does not.

**Table 3. Production locations and end markets served for each company**

<b>Company</b>	<b>Production Bases (Excluding Africa)</b>	<b>Currently Operating in Africa?</b>	<b>End Markets Served</b>
A	China, Indonesia, Malaysia, Thailand, & Vietnam	Yes	80% → United States; 20% → Europe and Asia Pacific
B	Bangladesh, Jordan, & Vietnam	Yes	80% → United States; 20% → Japan and Europe
C	Bangladesh, Cambodia, China, Sri Lanka, & Vietnam	No*	40% → United States 26% → Europe 34% → Japan/SE Asia

\*Company C formerly possessed manufacturing capabilities in Madagascar, but has since withdrawn from the continent.

## RESULTS

### *Reasons for the Selection of Ethiopia Versus Another Country in Sub-Saharan Africa*

Among the companies in this study, there were no universal approaches for deciding upon Ethiopia as the most desirable African country in which to establish manufacturing, and different manufacturers resorted to their own methods for arriving at this decision. On the most general level, there were factors that “pushed” the decision makers at these companies away from other countries in Sub-Saharan Africa and thus toward Ethiopia (as the companies participated, either explicitly or implicitly, in a process of elimination). At the same time, there were also factors from within Ethiopia that “pulled” manufacturers toward the country. Before settling on Ethiopia, Company A and Company B each considered some combination of the factors below.

#### *“Push” Factors*

From the “push” side, trade legislation served as a baseline, since the duty-free benefit of the African Growth and Opportunity Act (AGOA) only applies to certain countries in Sub-Saharan Africa. The apparel provision of this zero-tariff act narrowed the potential locations even further. In addition, countries in West Africa (such as Nigeria) were deemed too unstable. Manufacturers



cited issues such as Ebola, civil war, and other security concerns as reasons. It is because of these factors that companies focused their search effort on the east coast.

Company A identified Mozambique, Kenya, Tanzania, and Ethiopia as prospective locations for initiating production in that these countries not only lie on the east coast, but also receive full benefits under the apparel provision of AGOA. Company B casted a narrower net from the start and only investigated a subset of those countries— Kenya and Ethiopia. At this point, manufacturers considered the situation of each country individually. Company A noted how Mozambique was influenced by South Africa and thus had a higher minimum wage. Similarly, the leadership of Companies A and B both commented on the extent of Kenya’s economic development, including the relatively high wages. In Kenya, wages for garment workers are about \$150 per month, rendering Ethiopia’s \$60 per month wages cheap by comparison (Berg et al. 2015a). Thus, Mozambique and Kenya were eliminated due to costs. Although Tanzania was appealing in that it has a history of diplomatic relations with China and has been highly influenced by the country, Company A ultimately decided against the idea due to uncertainty associated with the country’s political election that was occurring at the time (Company B did not consider Tanzania). This left Company A and Company B with only one attractive option— Ethiopia.

#### *“Pull” Factors*

In addition to the “push” factors, there were internal “pull” factors inherent to Ethiopia that attracted manufacturers to the country. Three such factors that were common across all meetings and most frequently mentioned were lower production costs, a focused and committed government, and support from brands. The terms “brands,” “buyers,” and “customers” are used interchangeably in this study.

#### ***Positive (Driving) Factors for Producing Apparel in Ethiopia***

##### *Relatively Lower Production Costs (Wages)*

All firms cited labor costs as a significant positive for any company producing in Ethiopia. Consider the production of a shirt, for example. In this case, labor accounts for an average of approximately 15 percent of the total production cost (rendering it the highest cost apart from the cost of raw materials). Wages for garment workers in Ethiopia have consistently been below \$60 per month, which is lower than even the monthly minimum wages in Asian countries (Berg et al. 2015b).

The leadership of Company A highlighted the importance of lower production costs by explaining how they do business with several large low-price retailers, and these retailers pass cost pressure on to manufacturers. Even Company C, the firm that is not in Africa, conceded that labor costs are a significant positive, since these costs will likely remain low over a long time period. While Ethiopia has many people (its population surpasses 90 million), there are relatively few employment opportunities. This situation can be contrasted with that of other countries such as Myanmar, where there are many industries that draw from the same pool of labor, giving laborers a variety of opportunities and exerting upward pressure on wages. Tariffs represent another significant cost, and these are covered in the following section.

## *Beneficial Government Policy*

### *Government Vision*

Ethiopia's commitment to the textile and apparel sectors is embodied by its aggressive goal of achieving clothing exports worth \$30 billion by 2025. To place this figure in context, the country had annual clothing exports of only \$73.25 million in 2015 (Barrie 2017). A component of Ethiopia's larger five-year Growth and Transportation Plan, this initiative is described by Dr. Arkebe Oqubay, special advisor to the Ethiopian Prime Minister, as "the single, bold vision we have" (Barrie 2017). The idea is that clothing manufacturing can reduce the country's dependence on agriculture, attract foreign income, and decrease poverty through large-scale employment (Barrie 2017).

While the CEO of Company B does not believe that Ethiopia can achieve this goal in its entirety by 2025, he noted that it exemplifies the government's unwavering commitment to the apparel industry. After being initially set on opening a factory in Kenya, the CEO of Company B changed his decision only after having an influential conversation with Dr. Arkebe. The leadership of Company A, too, commented on the government's commitment to driving focus [on the textiles and apparel space]. In fact, Company A has collaborated directly with Ethiopia's government to set mutually beneficial policies, such as providing input on an acceptable minimum wage. If the company had chosen to settle in Kenya instead, this would not have been an option since these policies have already been established.

### *Hawassa Industrial Park*

Ethiopia's commitment to attracting foreign apparel brands and manufacturers is exemplified by the government's decision to make land and infrastructure available in the form of industrial parks. These are areas that operate under more liberal economic laws to foster exports and manufacturing activity (Mamo and Gabriela 2017). Companies A and B have both established factories in Ethiopia's Hawassa Industrial Park (HIP), which is a \$250 million facility consisting of 1.4 million square meters and built to comply with the highest international safety and environmental standards (Barrie 2017). For example, this complex is equipped with hydro-electricity, solar powered LED street lights, and a zero-liquid discharge facility to recycle wastewater (Barrie 2017). Financing for HIP was secured by the government through its decisive sale of Eurobonds, and this park will serve as a paradigm for future facilities throughout the country (Mamo and Gabriela 2017).

Company B's leadership noted that since the buildings in HIP were already commissioned by the government, they only needed to supply internal equipment like furniture and machinery, which made for a smoother transition. Although executives at Company A generally agreed, they also commented that this model makes it more difficult to design custom facilities to their exact desired specifications.

### *Duty-Free*

Finally, the foresight of the government in several countries in Sub-Saharan Africa is manifested by the fact that these countries have entered into duty-free agreements.

For Company C, the first consideration in deciding on a new sourcing market is to determine which country will ultimately be serviced and whether any duty-free agreements pertain to this country. It is for this reason that most clothing production for the US market presently occurs in China and Vietnam. In contrast, items produced in Bangladesh are commonly sent to the EU since Bangladesh can export its products duty free to this location.

The US market is very restrictive since it has the least number of countries from which it can receive items tariff free. The African Growth and Opportunity Act (AGOA) thus provides a non-trivial benefit by eliminating duty for clothing products entering the US. AGOA is also unique in that it permits the use of inexpensive third-country fabric inputs (such as those produced in India or China), whereas most preferential trade agreements restrict the fabrics that can be used to those that were produced in the US (Mamo and Gabriela 2017).<sup>1</sup> Companies A and B, therefore, are focusing on the US market with their production in Ethiopia.

While all three companies acknowledged the benefits provided by AGOA, Company C questioned its sustainability. However, relying on AGOA appears plausible at least at present, considering the act was renewed in 2015 for a period of ten years (Mamo and Gabriela 2017).

### *Auspicious for the Brands*

The third factor that all manufacturers identified as a key reason supporting shifting production to Ethiopia is that such a move would be viewed positively by the brands with which they do business.

Since the apparel industry is a buyer-driven global value chain, it is ultimately the brands that decide who produces what and where that production will take place (Mamo and Gabriela 2017). Thus, global brands exert considerable influence over the production decisions of their manufacturers.

There is little ambiguity that brands look favorably on the prospect of selling products produced in Africa. The CEO of Company B commented on how at present the “Made in Ethiopia” label is highly sought after (since firms could claim this in their marketing), so attracting customers to factories in Ethiopia would not be an issue. The leadership team of Company A similarly described how they were initially hesitant about Africa in 2014, and it was only after buyers began inquiring about the possibility that the firm became receptive. It was brands such as H&M, Primark, and PVH that were instrumental in leading their suppliers to investigate the country (Berg et al. 2015b). The 2013 Rana Plaza collapse in Bangladesh which resulted in more than 1,100 fatalities and 2,500 injuries engendered PVH and other brands to question whether Bangladesh was right in the first place, and increased their focus on fulfilling legal and social responsibilities. As retail struggled in the years that followed, this effort only intensified, and more brands began to look beyond their traditional borders.

Even Company C (which is content with its current production bases and opposed to producing in Africa since it previously had a failed venture there) would consider entering Africa to please a customer under the right circumstances. For this firm to begin manufacturing in Africa, the following conditions would need to be met: 1) a customer with a strong track record would have

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<sup>1</sup> Ethiopia also receives preferential access to the EU markets, but Bangladesh has similar access and yet is geographically closer.

to propose the idea; 2) this customer would need to be willing to back the move financially; and 3) Company C would need to be given permission to implement the move in phases. Thus, even the firm that was overtly opposed to the idea of producing in Africa would be willing to move production there if an important (and trusted) customer requested this move.

A final reason manufacturing in Sub-Saharan Africa would be auspicious for brands is that this may aid in their country diversification plans. Doing business with suppliers in a variety of countries helps to mitigate currency, political, and other business risks for brands. Nike, for example, has clearly articulated this intent in its annual report. With production spread across fifteen countries, Nike can thus develop “adequate alternative sources of supply” in the event that trade protection measures are implemented in one of its sourcing markets (Nike 2017).

Until this point, producing in Africa has been presented in an unconditionally positive light, but manufacturers also revealed several non-trivial reasons that explain why full-scale apparel production in Ethiopia has yet to gain significant traction.

### ***Negative (Deterring) Factors***

#### *Low Worker Efficiency*

All companies drew attention to the low efficiency of factory workers in Africa. To measure efficiency, the process of creating a garment is first broken down into its component operations. A dress shirt, for example, may contain 35 to 40 smaller operations such as stitching the collar, trimming the collar, creasing the collar, attaching the sleeve, and so forth. Once each operation is defined, synthetic data is frequently used as an objective benchmark for comparison. For example, General Sewing Data (GSD) conducts extensive research on motion data to determine the time it takes for a qualified and motivated operator to complete a given operation while following the standard or best procedure, often known as Standard Allowed Minute or SAM (Ambastha 2017). By measuring the timing of a particular operator or line and comparing that against the SAM for the garment being produced, the performance of that operator or line can be determined.<sup>2</sup> This data can then be aggregated to yield an overall efficiency, expressed as a percentage, for a factory.

The CEO of Company B noted that while his factories typically achieve efficiency within the 50 to 60 percent range after six to nine months, efficiency in comparable factories in Ethiopia has remained at the 20 percent level.<sup>3</sup> Company A projects that reaching 60 percent efficiency in Africa will require four years. Company A also drew attention to the fact that only the most basic styles were brought to Ethiopia, and a factory producing similar items in Asia would thus be expected to have efficiency in the 70 to 80 percent range. Before even considering moving a portion of production from Asia to Africa, Company C would need the efficiency figure to reach at least 50 percent.

The following information in this study investigates potential rationale for low efficiency levels. While there is no single explanation, several factors contributing to this level of efficiency are explored.

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<sup>2</sup> Line Efficiency (%) =  $\frac{\text{total minutes produced by the line (i.e. the production pieces x the respective SAM)}}{\text{total minutes attended by all operators}} * 100$

### *Agrarian to Industrial Shift*

One factor contributing to low productivity is that line workers in Ethiopia are frequently unfamiliar with sewing machines and other manufacturing equipment. They are also unaccustomed to structured workdays. Since the country's broader transformation from an agrarian to an industrial economy is still in its early stages, most of the workforce has agricultural backgrounds. To address this issue, Company B has attempted to maximize the "needle time" of workers (that is, the time workers spend in front of machines). To bolster employees' comfort with the equipment, the company has also equipped its factory with a special "play area," in which workers are free to interact with sewing machines and other machinery at will.

### *Lack of Education and Differences in Culture*

A second barrier leading to low efficiency is lack of education among workers (and the related issue of the need for localization).

Company C's leadership commented that training in Africa would need to involve more than merely teaching workers how to operate machinery—it would also need to involve basic literacy training so that workers can understand instructions (including, for example, instructions on how to measure length). To provide this training, well-educated supervisors would need to be hired.

The leadership teams of Company A and Company C both noted the importance of hiring supervisors locally (as opposed to bringing in a large team of expatriates). The CEO of Company C delivered an anecdote in which he described the company's practice of performing traditional Chinese lion dances to motivate workers in Asia, and how the company is uncertain whether workers in Africa would respond positively to the dances. "We can't even talk to them outside of a word or two," remarked the CEO, "and even if we could talk to them, we don't know their customs." Executives also drew attention to perceived differences in the mentality of African versus Asian workers. Leaders from all companies commented on the enthusiasm of workers in Africa. On a recent trip to Ethiopia, the CEO of Company B observed "a lot of hope in the eyes of the ladies who are working in the factory." Similarly, executives at Company A noted the immense pride among the people in Ethiopia, and contrasted this with the generally reserved (and at times even depressed) mentality of workers in Asia. It is thus of great importance to have educated supervisors who not only speak the local language, but who also understand local customs. This is especially challenging in Ethiopia, since it is currently difficult to find educated locals to serve as supervisors.

## *Underdeveloped Supply Chain*

There are also considerable *logistics* and *supply chain* issues in Africa.

On the logistics side, Company C drew attention to the challenge of efficiently transporting goods from Madagascar to customers in the US market. A breakdown of the days required to send inputs to Madagascar and then finished clothing to the US is provided in *Table 4*. Although shipping times would be shorter from the geographically closer country of Ethiopia, logistics remains a concern. Company B's leadership, for example, discussed Ethiopia's bottleneck-prone shipping infrastructure and the slow and expensive nature of ground transportation. Since Ethiopia is a landlocked country, raw materials and finished products must be sent to a port in the neighboring country of Djibouti (Barrie 2017).

**Table 4. Comparison of time required for shipping to US market from Madagascar versus Hong Kong (in terms of number of days).**

Description	Madagascar	Hong Kong
Movement of fabrics/trims to the production location ( <i>A</i> )	30	0
Movement of finished goods to the end market i.e. the US ( <i>B</i> )	40	13
Total time required for transit ( <i>A+B</i> )	70	13

*Time saved (i.e. the transportation benefit of producing in Hong Kong): 57 days*

When the transportation of both inputs and finished goods is considered, production in Hong Kong represents a time savings of almost 60 days when compared with Madagascar. Compounding this issue is the rising popularity of fast fashion retailers (Hamlin 2017). This change in consumption habits has rendered speed to market critical for remaining competitive in the global apparel industry (Barrie 2017).

As the CEO of Company C explained, to improve lead times, more volume is required, and ultimately the establishment of a local supply chain. In the context of the Madagascar example, once a proper supply chain is in place, the 30 days required to transport raw materials is removed, thus cutting logistics time nearly in half and yielding a more reasonable time requirement of 40 days. However, building a fully integrated supply chain in Ethiopia in which all inputs are supplied locally requires time, and this is deterring some manufacturers such as Company C from entering the country.

Even manufacturers already present in Ethiopia are far from fully integrated with the local community. Company B, for example, has yet to source materials locally or rely on local banks. Instead, it merely uses Ethiopia to process components that are produced elsewhere. The company did recognize however that establishing fabric manufacturing in Ethiopia would yield large dividends for manufacturers, accelerating industry-wide growth four to five times. Company A, too, would benefit from bringing facilities that produce trims (e.g. buttons) to Ethiopia, as this production capability would serve as a bulwark against disruptions elsewhere in the world.

Establishing a vertically integrated supply chain in Ethiopia, however, would require sufficient

and affordable resources such as water, electricity, oil, and cotton. Power in Ethiopia costs a mere 3.5¢/kWh, rendering it significantly more affordable than other African countries including Ghana, Kenya, Tanzania, and Zambia (Mamo and Gabriela 2017). By comparison, power costs 14-15¢/kWh throughout Southern China. Ethiopia is also home to several hydroelectric plants (Berg et al. 2015b). If industrialization were to gain traction on a larger scale, though, it is unclear whether the country's supply of energy would suffice. Company C was initially attracted to Myanmar due to its low electricity costs (at the time, there was a 75% cost savings for producing in Myanmar versus China). However, once production started, a number of complications arose, including the fact that there was simply not enough available electricity to satisfy demand at this price.

In terms of raw materials, other apparel-producing countries such as Bangladesh and Pakistan are home to cotton farms with crops that can be harvested and used as inputs in the manufacturing process. With a proper climate and over 3.2 million hectares of suitable land, it is conceivable that Ethiopia, too, could one-day supply all the cotton necessary for the clothing manufacturing process (Berg et al. 2015b). However, only a small fraction of this land is being used today, and quality and planning problems have left manufacturers in Ethiopia with no choice but to import cotton from other areas of the world (Berg et al. 2015b).

## **DISCUSSION**

Eighty percent of Chief Purchasing Officers surveyed in a McKinsey study cited production inefficiencies and long lead times as challenges for expanding apparel sourcing to Ethiopia (Berg et al. 2015b). While lack of experience and education for workers represent surmountable barriers, the logistics and supply chain challenges will require even greater effort and consideration to overcome.

Company B has already taken proactive steps to alleviate the lack of education and lack of experience among its workers in Ethiopia. The company has demonstrated its commitment to training by bringing 150 workers from Africa to Indonesia, thus providing them with exposure to established factories with highly disciplined employees. Upon returning to Africa, employees were provided with increased incentives (such as opening the factory for their families to visit) to reduce employee attrition and turnover.

The Ethiopian government has also been involved in this effort and has taken steps to link industry with the country's educational program. This includes their establishment of the Ethiopian Textile Industry Development Institute (ETIDI) to promote skill cultivation of employees and make them more competitive in this sector (Mamo and Gabriela 2017). In addition, the Ethiopian government plans to foster connections between industrial parks and local technical colleges and universities to enhance employee skill formation (Barrie 2017).

The logistics and supply chain issues, in contrast, will require more time to address, and individual actors are not necessarily incentivized to take initiative in this effort. Company C believes there is not a significant advantage associated with being an early-mover in this new sourcing market and would rather wait until industry develops further in the country. After all, even though Company B has already made shipments out of its factory in Ethiopia, it has yet to achieve profitability, which may deter other firms from entering. The issue is that if all

companies adopt this strategy of waiting, full-scale industrialization may never occur. It is estimated that 50 to 60 percent of the current value of Ethiopia's clothing exports consist of imported raw materials (Mamo and Gabriela 2017). If a sustainable supply chain (that includes sourcing materials from within the country) is not established, it would be easy for companies to simply end production and move to another destination. Overcoming this difficulty will require a coordinated effort not only involving Chinese manufacturers, but also apparel brands and government officials.

### ***Possible Impact of Choice-Supportive Bias on the Interviewees in this Study***

Attitudes toward Ethiopia as a sourcing market varied greatly among those interviewed in this study. While some industry leaders were very enthusiastic about this prospect, others were overtly opposed. These seemingly contradictory views can be reconciled, at least in part, by the choice supportive bias of the executives interviewed. Choice-supportive bias is the tendency of individuals to retroactively ascribe positive attributes to the options they have chosen (Mather and Johnson 2000). As such, it may follow that leaders of companies that entered Ethiopia view this opportunity with greater optimism and perhaps even amplify its advantages since this is the route they have already chosen. Similarly, executives at companies who decided against entering the country may be more likely to amplify the faults associated with doing so.

Opening a factory in Ethiopia similar to those of Companies A and B requires a non-trivial investment \$5 to \$15 million with a five-year ROI (this is, however, much lower than the amount of investment required to open a spinning and weaving plant, which is \$50 to \$100 million with a 15 to 20 year ROI). Company C has yet to invest in a facility in Ethiopia. The upshot is that either Company C is being overly cautious, or Companies A and B are being overly optimistic.

## **CONCLUSION AND SIGNIFICANCE**

The textile and apparel sector is commonly viewed as a stimulus for the industrialization of emerging economies, primarily because of its labor-intensive processes and relatively low fixed costs (Mamo and Gabriela 2017). Resilient demand for clothing, especially with the recent growth of fast fashion retailers, suggests this industry will continue to thrive on a large scale. As such, decisions by the firms in this study and many others have the potential to materially impact international development and transform the economies of entire nations. It is thus the decisions of these firms (as well as those of key brands and local government officials) that can ultimately determine whether Ethiopia will one day supplant Bangladesh and other Asian countries as the lead apparel producer.

However, there still exists a formidable supply chain barrier. Only when this is overcome, will Ethiopia's true potential as a global and sustainable manufacturing hub be realized, just as its government so overtly aspires.



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