Local Enterprise and Value Chain Enhancement (LEVE) Project

Measuring Job Impacts in the Haitian Apparel Sector Technical Report

February 2017
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Local Enterprise and Value Chain Enhancement (LEVE) Project
Measuring Job Impacts in the Haitian Apparel Sector
Technical Report

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### ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADIH</td>
<td>Association des Industries d’Haiti</td>
</tr>
<tr>
<td>CODEVI</td>
<td>Compagnie de Développement Industriel</td>
</tr>
<tr>
<td>GDP</td>
<td>gross domestic product</td>
</tr>
<tr>
<td>GTAP</td>
<td>Global Trade Analysis Project</td>
</tr>
<tr>
<td>HELP</td>
<td>Haiti Economic Lift Program</td>
</tr>
<tr>
<td>HOPE</td>
<td>Haitian Hemispheric Opportunity through Partnership Encouragement</td>
</tr>
<tr>
<td>IDB</td>
<td>Inter-American Development Bank</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
</tr>
<tr>
<td>IHSI</td>
<td>Institut Haitien de Statistique et d'Informatique</td>
</tr>
<tr>
<td>I-O</td>
<td>input-output</td>
</tr>
<tr>
<td>IT</td>
<td>information technology</td>
</tr>
<tr>
<td>LEVE</td>
<td>Local Enterprise and Value Chain Enhancement</td>
</tr>
<tr>
<td>MCI</td>
<td>Haitian Ministry of Commerce and Industry</td>
</tr>
<tr>
<td>PIC</td>
<td>Parc Industriel de Caracol</td>
</tr>
<tr>
<td>PIM</td>
<td>Parc Industriel Métropolitain</td>
</tr>
<tr>
<td>SHODECOSA</td>
<td>Superior Housing Development Corporation S.A.</td>
</tr>
<tr>
<td>SIDSA</td>
<td>Société Immobilière de Développement S.A.</td>
</tr>
<tr>
<td>SONAPI</td>
<td>Société Nationale des Parcs Industriels</td>
</tr>
<tr>
<td>T&amp;C</td>
<td>textile and clothing</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WITS</td>
<td>World Integrated Trade Solution</td>
</tr>
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<td>WRC</td>
<td>Worker Rights Consortium</td>
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</tbody>
</table>
EXECUTIVE SUMMARY

At the end of 2016 about 65,892 jobs in Haiti were linked in some way to the apparel manufacturing sector, either directly with manufacturers, indirectly with companies in the supply chain that provide materials and services, or in the broader community as workers spend their wages.

The apparel industry accounts for over 90% of Haiti’s exports and the prospects for future growth are encouraging given Haiti’s favorable trade agreements with the United States, proximity to the U.S. market, cost-efficient labor, and strong governance structure for factory conditions through Better Work Haiti.

Until this analysis, it was known that there were about 41,000 workers employed in apparel production, but it was not known how many jobs in other economic sectors relied upon the apparel industry.

In support of the US Agency for International Development’s Local Enterprise and Value Chain Enhancement project, RTI international analyzed international trade and industry data, interviewed manufacturers and their suppliers, and surveyed apparel workers and street vendors whose businesses cluster around Haiti’s industrial parks. Our team overcame information and data gaps to calculate employment multipliers for the apparel industry.

For every one job in apparel production in Haiti, 0.28 jobs exist in the supply chain, and 0.33 jobs are supported by workers spending their wages on food, education, goods, and services. This means that the apparel industry in Haiti supports a total of 65,892 jobs throughout the economy in the form of:

- 41,000 apparel industry jobs,
- 11,456 jobs with companies in the supply chain supporting the industry, and
- 13,437 jobs supported by workers spending their wages in the community.

These are largely net new jobs because the revenue that supports them comes from abroad and not from Haitian consumers. In calculating job impacts, we varied certain key inputs to see how the estimates could vary under different economic conditions. Table 1 summarizes RTI’s job impact estimates under our baseline scenario and the rage of estimates that arose from varying key inputs.

| Table 1: Labor Impact Estimates for the Apparel Sector in Haiti |
|-----------------|---------|---------|---------|
|                 | Baseline| Low     | High    |
| Direct Jobs     | 41,000  | 41,000  | 41,000  |
| + Indirect Jobs | 11,456  | 9,953   | 18,103  |
| (Indirect Multiplier) | (0.28) | (0.24) | (0.44) |
| + Induced Jobs  | 13,437  | 12,944  | 15,052  |
| (Induced Multiplier) | (0.38) | (0.32) | (0.37) |
| = Total Jobs    | 65,892  | 63,896  | 74,155  |
| (Indirect + Induced Multiplier) | (1.61) | (1.56) | (1.81) |

LEVE Measuring Job Impacts in the Haitian Apparel Sector | 1
There is ample room for growth in apparel industry employment. If it can remain competitive and attract investment, the Haitian apparel industry could expand several times over with no risk of filling or even largely influencing global apparel demand. Today’s limits are due to the production capacities of firms operating in Haiti, not a lack of global market demand. In addition, as the industry begins to take on higher value-added activities, new office and technical jobs are becoming available. This makes more middle-class job opportunities available to Haitians.

**SURVEY OF APPAREL INDUSTRY WORKERS**

We surveyed more than 1,200 apparel industry workers to learn more about how the wages they earn and spend in the community provides economic opportunity for others. For many workers, this was their first formal job in an otherwise largely informal economy—38% report having no prior work and 34% report having worked in trade/commerce. Workers also report earning more now than they did before. The typical increase in income was between 150 and 250 Haitian gourdes (HTG) per day.

Apparel production work not only provides vital support to the workers themselves, but also to their households. Factory work is the main source of income for two-thirds of respondents’ households, which usually have only one other income earner. Even when not the primary income source, apparel work was important or very important to 93% of respondents’ households. Given a reported average of 4.5 people per household, we estimate that 133,735 Haitians are receiving important economic support from the 41,000 workers in the apparel sector. Respondents report increased spending on major expenses such as education, electronics, land, or livestock.

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**Survey of 1,200 Haitian apparel workers**

- **First job** for 38%
- **First formal job** for at least 34% more
- **Increased income** by 150-250 HTG per day
- 93% say factory job is important or very important to their household
- 77% report better or much better household economic conditions
- 41,000 apparel workers provide for 133,735 people
RESULTS OF INTERVIEWS WITH APPAREL MANUFACTURERS AND SUPPLIERS

A key goal for the Haitian apparel sector has been to increase the number of value-added services being carried out in-country. The Haitian apparel manufacturing sector used to be dominated by “cut and make” manufacturers who simply received materials from their suppliers, assembled the products, and shipped them back to the suppliers for finishing. Although cut and make producers are still the majority in Haiti, an increasing number of firms have started operating as “full package” manufacturers by sourcing their own raw materials, trimming and finishing products, and even carrying out product design. Because full package manufacturers carry out a larger portion of the apparel manufacturing value chain, they stand to increase the amount of economic activity that occurs in country to support the apparel industry. Figure 1 shows the stages of the value chain, with those that are carried out in Haiti highlighted in blue.

Figure 1: Apparel Manufacturing Value Chain and Portions Carried Out in Haiti

Note: This figure is modified from “Bringing HOPE to Haiti’s Apparel Industry” (Feeney et al., 2009). Stages of the value chain that are highlighted in blue are carried out in Haiti. Not all cut and make manufacturers trim their garments, but some have started finishing their products.
Our team interviewed six of the 32 apparel manufacturing firms operating in Haiti as of 2016, including both cut and make and full package manufacturing. The average firm interviewed employs about 1,300 people and produces 105,000 square meter equivalents (SMEs) per week. Our team also interviewed seven suppliers to the Haitian apparel manufacturing industry, including raw materials and capital suppliers, transportation agencies, and private security companies.

The additional value-added services being carried out by full package manufacturers are reflected in their cost structures. While the majority of costs for cut and make manufacturers consist of labor (63-80%), the highest cost for full package manufacturers is materials (up to 60% of total costs). This does not imply that full package manufacturers spend less money on Haitian labor than cut and make producers. Instead, it indicates that full package manufactures spend additional money on capital and raw materials – some of which comes from Haitian suppliers – that cut and make manufacturers do not spend.

Estimates of future apparel industry growth are moderate among both manufacturers and suppliers. Several manufacturers estimate flat growth in the upcoming fiscal year while others estimate growth of 10-25%. Similarly, suppliers generally estimate less than 10% future growth in the demand for their products or services from the apparel sector.

Both manufacturers and suppliers identified key determinants of future growth to be political stability and infrastructure. On average, both cut and make and full package apparel manufacturers indicate that about 10% of total costs goes towards energy due to poor public infrastructure. Manufacturers also expressed concerns over wage stability. Suppliers noted that a shift towards full package apparel production would increase the demand for local materials and support services. All indicated that improvements in these areas would increase Haiti’s competitiveness in the global apparel manufacturing market.

**HAITI’S EMPLOYMENT MULTIPLIERS**

The final impact estimate for Haiti is 1.28 for indirect and 1.61 for indirect and induced impacts. These impact estimates imply that for every one job in apparel production in Haiti, 0.28 jobs exist in the supply chain, and an additional 0.33 jobs are supported by workers spending their wages on food, education, goods, and services.

As the Haitian apparel industry shifts towards full package production, we would expect fewer raw materials to be imported, thereby increasing the employment impacts. For example, if apparel manufacturers sourced 50% of their textiles domestically, the adjusted multipliers would be 2.7 indirect and 3.42 indirect plus induced. This highlights the importance of domestic production in the apparel value chain. Additionally, as worker productivity increases and the share of total costs from labor decreases, the estimated labor impacts will increase.

Haiti’s main regional competition for apparel exports to the U.S. market are El Salvador, Nicaragua, Guatemala, the Dominican Republic, and Honduras. A comparison of employment impact estimates for these countries is provided below. Haiti has a higher share of costs from labor and imports more raw materials than the Caribbean region as a whole, which reduces Haiti’s impact estimates relative to those of its regional competitors. Haiti’s impact estimates are similar to those of El Salvador, though slightly lower, and are quite a bit lower than those of Guatemala and the Dominican Republic. Increases in full package manufacturing in Haiti could bring the nation’s employment impacts to a more comparable level with its local competitors.
since full package manufacturers source their own raw materials and have lower shares of costs from labor.

**Figure 2:** Labor Impacts for Haiti and Top Regional Competitors

Overall, the results indicate significant job impacts from production work in the apparel sector in Haiti, with room for continued growth. As the industry continues to grow and shift towards full package manufacturing, domestic production will also increase, promoting additional domestic labor. As a result, apparel manufacturing will have a larger impact on employment throughout the Haitian economy.
1. INTRODUCTION

1.1 Purpose

The purpose of this study was to estimate the indirect and induced employment impacts of the Haitian apparel manufacturing sector. A focus on job creation solely at apparel manufacturers, often referred to as “direct employment,” underestimates the total number of jobs in the economy that depend on the industry. Indirect employment impacts include jobs elsewhere in the value chain that support apparel manufacturing (i.e., employment by suppliers). Induced employment refers to jobs supported by employees spending the compensation they earn. Understanding indirect and induced employment provides a more comprehensive picture of the employment impact of the apparel manufacturing sector.

The United States Agency for International Development (USAID) funded this study through its Local Enterprise and Value Chain Enhancement (LEVE) Project to gain a more comprehensive understanding of the impact of USAID’s work promoting employment in Haiti’s apparel sector. Beyond meeting USAID and LEVE’s needs, this study offers valuable information to the Haitian Ministry of Commerce and Industry (MCI), Association des Industries d’Haïti (ADIH), and the Haitian public sector as they consider public policies that may affect apparel manufacturing in Haiti.

1.2 Background

The Haitian apparel industry reportedly employed more than 100,000 people until the early 1990s (De Voest, 2015). By 1994 a combination of political instability, poor infrastructure, and economic sanctions had shrunk the industry to between 15,000 and 20,000 employees (Feeney, Salinger, & O'Dell, 2009; De Voest, 2015). In an attempt to revitalize the industry and support the Haitian economy, the US government enacted the 2006 and 2009 Haitian Hemispheric Opportunity through Partnership Encouragement (HOPE) Acts. These acts were expanded by the Haiti Economic Lift Program (HELP), enacted after the devastating 2010 earthquake. Together, the acts provide duty-free exports to the United States of apparel goods manufactured in Haiti until 2025, with some limits (De Voest, 2015).

These trade agreements and other industrial incentives initiated by the Haitian government have helped the Haitian apparel industry expand since 2010, growing at an average rate of 12.5% per year and with broadening production capabilities (D’Sa, 2016). The industry employed more than 40,000 workers at the end of 2015 and comprised more than 90% of Haiti’s exports and 10.2% of the Haitian gross domestic product (GDP) (D’Sa, 2016). See Section 2.2 for additional information on Haitian apparel employment.

The number of Haitian apparel manufacturers who are starting or increasing local operations continues to grow, as does the capacity for producers to support additional parts of the value chain in Haiti. For example, production of stand-alone garment finishing operations, as well as manufacturers and suppliers of packing materials, threads, trims, and other accessories is

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1 Haitian manufacturers use “direct” and “indirect” employment differently than would most economists. Manufacturers we interviewed referenced “direct labor” as workers who are directly engaged in shop floor production activities. They referred to administrative, technical, and management personnel as “indirect.”
beginning to take hold in Haiti. This domestic growth in apparel-supporting manufacturing bodes well for the potential impact that apparel sector employment can exert on the Haitian economy.

1.3 Approach

Haiti lacks sufficiently robust industry and employment data from which one could complete the calculation of indirect and induced employment impacts with confidence. In response, RTI International devised and implemented a multi-faceted approach that relies on primary data collection and the best-available secondary data sources.

Existing data on production and consumption patterns formed the initial basis of our impact estimates. To reflect local conditions in Haiti, we revised these data based on results from a series of surveys and interviews we commissioned and conducted. To generate employment multipliers, we used an economic input-output model incorporating

- production and trade data about the apparel sector in the Caribbean region;
- Haitian apparel industry data from ADIH;
- business operations and employment requirements of apparel manufacturers, their suppliers, and nearby street vendors from structured interviews and surveys; and
- income and expenditures for apparel workers and their households from surveys.

We also commissioned surveys of employees and street vendors in three industrial parks: Parc Industriel Métropolitain (PIM) in Port-au-Prince, Parc Industriel de Caracol (PIC), and Compagnie de Développement Industriel (CODEVI), where nearly 75% of Haiti’s apparel employees work (ADIH, 2016). To inform our indirect impact estimates we interviewed apparel manufacturers and suppliers regarding their business operations and input requirements under various production scenarios.

As a cross-reference for our Haiti-specific estimates, we reviewed studies from other development settings and derived impact estimates from secondary data for twenty other countries and regions with significant apparel exports. These studies provided useful points of comparison to assess the scale of our derived indirect and induced job impacts.

The rest of this report proceeds as follows: Section 2 provides a detailed description of the Haitian apparel industry. Section 3 describes the process of estimating indirect and induced job impacts. Section 4 offers a summary of job impact estimates from other development settings and for the apparel sector in twenty countries with significant apparel sector exports based on secondary data from the Global Trade Analysis Project (Center for Global Trade Analysis, 2011). Section 5 details the results of our primary data collection efforts targeting manufacturers, employees, suppliers, and vendors connected with the apparel sector. Section 6 summarizes the results of our analysis and Section 7 provides conclusions.
2. APPAREL INDUSTRY BACKGROUND

The following summary of available Haitian apparel industry data provides qualitative and quantitative information characterizing the apparel value chain and the role a small open economy like Haiti plays within it. Comprehensive reviews of the Haitian apparel industry are available from De Voest (2015) and D’Sa (2016), although the industry has developed in substantial ways since the publication of these works. We summarize the key aspects of the industry using these two works as a foundation and provide updates on the current industry landscape.

2.1 Apparel Manufacturing in Haiti

The recovery of Haiti’s apparel sector has been strong since the low it experienced in the 1990s. The industry has experienced double-digit growth in recent years, helped in part by favorable trade promotion efforts by the United States just before and following the 2010 earthquake, renewed investment by international governmental and inter-governmental organizations, and investment from domestic and international firms. Growth expectations are relatively modest, but apparel still supports a significant share of Haiti’s GDP and most of Haitian exports. Future growth will rely in part on expanding capacity for domesticating more stages of the value chain.

2.1.1 Cut and Make versus Full Package

A key goal for the Haitian apparel sector has been to increase the number of value-added services being carried out in-country (Koios Associates, 2010). The Haitian apparel manufacturing sector used to be dominated by “cut and make” manufacturers who simply received materials from their suppliers, assembled the products, and shipped them back to the suppliers for finishing. Although cut and make producers are still preponderant in Haiti, an increasing number of firms have started operating as “full package” manufacturers by sourcing their own raw materials, trimming and finishing products, and even carrying out product design. Figure 3 shows the global value chain for apparel manufacturing as well as the portions of the value chain that are carried out in Haiti. “Cut and make” manufacturers carry out fewer portions of the value chain in-country than “full package” manufacturers.

Figure 3 shows that, as the Haitian apparel industry transitions to full package manufacturing, greater levels of vertical integration of the global value chain will occur. Apparel manufacturers starting operations in Haiti since 2011 have been predominantly full package, carrying out all stages of product development, assembly, and finishing in-country (D’Sa, 2016). We identified eight manufacturers partaking completely or at least partially in full package manufacturing, comprising 27.5% of the total manufacturers identified.

2 “Cut and make” producers sometimes also provide trim and are referred to as cut, make, and trim. For simplicity, references to “cut and make” should be taken to include producers who also provide trim.

3 We do not have information on the weekly production of each apparel manufacturer to establish the proportion of total production allocated to cut and make versus full package manufacturing.
2.1.2 Industry Value Chain in Haiti

Table 2 describes the types of businesses located in Haiti that are involved in various stages of the apparel manufacturing value chain, which we break into the following main categories:

- **Suppliers:** Provide materials or services to apparel manufacturers that enable them to assemble their apparel
- **Apparel manufacturing:** Manage the apparel production
- **Finishing and distribution:** Trim, finish, package, or transport the apparel after it has been made

Note: This figure is modified from “Bringing HOPE to Haiti’s Apparel Industry” (Feeney et al., 2009). Stages of the value chain that are highlighted in blue are carried out in Haiti. Not all cut and make manufacturers trim their garments, but some have started finishing their products.
Table 2 also identifies the businesses producing in Haiti. The types and number of Haitian apparel manufacturing firms, as well as Haitian firms, providing support services to the apparel sector are described in greater detail below.

Accompanying the increase in value-added services supplied in Haiti is the addition of stand-alone garment finishing operations, as well as manufacturers and suppliers of packing materials, threads, trims, and other accessories. Much of this development has occurred in recent years. For example, as of 2015, the majority of apparel manufacturers were receiving polybags and cartons for shipping from abroad, although a Korean manufacturer, Youm Kwang Textiles, had recently begun supplying polybags locally (De Voest, 2015). As of June 2016, most Haitian apparel manufacturers had begun sourcing some of their polybags from this newly available local source.

The 2015 industry profile indicated that embroidery and printing services were being introduced into the local market and, as of June 2016, these services were readily available. Youm Kwang Textiles now also supplies dyed polyester thread to local manufacturers.

There are additional services that are required to carry out manufacturing operations in Haiti, some of which are locally supplied. These services include accounting, legal, finance, information technology (IT), trade brokering, quality control, and product transportation. Necessary services can also frequently include on-site security personnel, company-provided transportation for employees, locally-supplied skills training for line workers, and cultural training for upper management who often come from abroad.

Apparel manufacturers usually purchase factory shells built to suit by either the Government of Haiti or operators of privately held free-zones. Due to poor local infrastructure, manufacturers frequently require private water and sanitation services, as well as electricity generators powered by diesel fuel. Manufacturers frequently outsource mechanical and maintenance services for their equipment with skilled workers from abroad.
## Table 2: Description of Haitian Businesses Associated with the Apparel Sector

<table>
<thead>
<tr>
<th>Apparel Value Chain</th>
<th>Business Type</th>
<th>Main Operations</th>
<th>Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers</td>
<td>Raw Materials Suppliers</td>
<td>Supply (and manufacture) fabrics (cotton), threads, trims, accessories (elastics, buttons), and packaging (polybags, cartons)</td>
<td>Youm Kwang, Astro Carton, Soge Plastique</td>
</tr>
<tr>
<td></td>
<td>Energy and Capital Providers</td>
<td>Factory shell providers, maintenance and mechanical services, energy providers, and sanitation services</td>
<td>EMB, Prolink, DINASA, Servimax, BNR, Charles Féquière, L’eau L’eau, Zinipas, Boucard Pest Contol</td>
</tr>
<tr>
<td></td>
<td>Other Support Services</td>
<td>Security, accounting, legal, IT, brokering, finance, employee/cultural training, and transportation (employees and products)</td>
<td>Private Security Systems, Enmarcolda, Seabord Marine</td>
</tr>
<tr>
<td>Apparel Manufacturers</td>
<td>Cut and Make</td>
<td>Vendor receives fabric and other raw materials from buyer/supplier, cuts to size (or receives pre-cut) and stitches</td>
<td>Island Apparel, Fairway Apparel, Fox River Caribe, Quality Sewing, DKDR Haiti, Gladiator Textiles, Horizon Manufacturing, Indigo Mountain, Isis Apparel, Johan Company, Lucotex, MBI S.A., Modas Gloria Apparel, Multi Assembly, Pacific Sports Haiti, Palm Apparel, Safi, Sewing International, Will Bes Haitian</td>
</tr>
<tr>
<td></td>
<td>Full Package</td>
<td>Vendor sources raw materials, designs product, makes patterns, cuts to size, stitches, trims/embroiders/prints, packages, and exports</td>
<td>AGA Corp., Val d’Or, H&amp;H Textiles, S&amp;H Global Some full package: Genesis, Industrial Revolution II, One World Apparel, Premium Apparel</td>
</tr>
<tr>
<td>Finishing &amp; Distribution</td>
<td>Stand-Alone Finishing Services</td>
<td>Embroidery, screen printing</td>
<td>Astro Carton</td>
</tr>
<tr>
<td></td>
<td>Other Support Services</td>
<td>Product transportation, quality control, inventory management, accounting, legal, IT, brokering, and finance</td>
<td>Enmarcolda, Seabord Marine, SOGEBANK, BNC Capitale, UNIBank, Evergreen, DHL, Digicel, Natcom, Cabinet Colimon, Assurances Léger, Chatelain Cargo, Antillean Marine</td>
</tr>
</tbody>
</table>
2.2 Apparel Industry Employment and Wages

Employment growth in the Haitian apparel industry has been robust. Table 3 shows the average quarterly employment of the apparel industry from 2014 to 2016. Employment throughout that time grew more than 30\% from about 31,500 in the fourth quarter of 2013 to about 41,000 in the second quarter of 2016.

<table>
<thead>
<tr>
<th>Year</th>
<th>Quarter</th>
<th>Average Employment</th>
<th>Annualized Growth</th>
</tr>
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<tbody>
<tr>
<td>2014</td>
<td>1</td>
<td>32,906</td>
<td>17.6%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>34,585</td>
<td>20.4%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>36,086</td>
<td>17.4%</td>
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<tr>
<td></td>
<td>4</td>
<td>36,421</td>
<td>3.7%</td>
</tr>
<tr>
<td>2015</td>
<td>1</td>
<td>37,282</td>
<td>9.5%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>39,147</td>
<td>20.0%</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>40,863</td>
<td>17.5%</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>40,527</td>
<td>-3.3%</td>
</tr>
<tr>
<td>2016</td>
<td>1</td>
<td>40,650</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>41,004</td>
<td>3.5%</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>37,947</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

Source: ADIH

2.2.1 Apparel Industry Wage Minimums

A new minimum wage law was decreed in Haiti on May 23, 2016. The law specified minimum wages for trade import-export workers who work for a piece rate (including apparel manufacturing workers) of 340 HTG for 8 hours of work, the equivalent of US$5.44.\(^4\) Those not working at piece rates have a lower standard of 300 HTG for 8 hours of work. The legal typical work week consists of 6 days of 8 hours of work, or 48 hours total, with additional ‘seventh day’ pay for those working a full 6-day work week. Haitian labor laws further stipulate 50\% overtime pay for work carried out after 6 p.m. or beyond 8 hours per day, as well as 13 days of paid leave for all employees (D’Sa, 2016).

\(^4\) Based on an exchange rate of 62.5 HTG/USD.
The vast majority of apparel workers, other than trainees, earn piece rates. Management sets the piece rate quotas for daily production. Third party assessments have raised concerns about the average daily piece-rate wages falling below legal minimums (described below), arguing that a combination of low piece rates and/or high quotas, insufficient overtime pay, and unrecorded overtime work have led to sub-standard pay for some workers.

Differences between minimum and actual wages are especially relevant to an assessment of induced labor impacts associated with job growth in the apparel manufacturing sector. Analyses estimating labor multiplier impacts based on reported minimum wages will overstate or understate job impacts if actual disposable income differs. We cover reported earnings in Section 5.3.

2.2.2 Better Work Haiti

The HOPE and HELP acts that grant Haitian apparel manufacturers duty-free access to US markets, require that all businesses submit to workplace monitoring by Better Work Haiti to qualify for tax breaks. Better Work Haiti helps business owners establish and maintain safe working conditions that comply with minimum local and international labor standards (Feeney et al., 2009). For example, laborers must be allowed to organize and must be provided with work environments that are free from discrimination.

Better Work Haiti assesses apparel manufacturing factories biannually to ensure compliance in providing legally mandated wages, overtime pay, and other employee benefits along with many other factors of employee safety and health. The latest report on factory compliance was published in April 2016 and found minimal non-compliance in paying legal minimum wages. However, Better Work Haiti stopped assessing incentive pay (piece rate) practices in their compliance reports in April 2014. As of that report, 29% of workers paid through incentive structures earned the legal minimum wage while all biannual reports since October 2014 found about 40% of these workers earning minimum wage equivalents (Better Work Haiti, 2016).

2.2.3 Alternative Income Opportunities

Despite any differences that may exist between actual wages paid to apparel workers in Haiti and legally mandated minimum wages specified for apparel workers, incomes among those working within the formal Haitian labor market, including the apparel manufacturing industry, are substantially higher than the incomes offered by informal labor activities such as street commerce.

Accounting for the availability of alternative opportunities for earning income in Port-au-Prince, Schwartz (2012) determined fair wages for Haitian artisans (including apparel workers) to be approximately 135 HTG to 340 HTG for apprentices, 540 HTG to 815 HTG for mid-level professionals, and 1,015 HTG to 1,355 HTG for master-level workers. Schwartz determined these fair wages under the assumption that each household in Haiti works as a unit to optimize consumption given available incomes. Further, the suggested fair wages account for the wage levels needed to keep Haitian manufacturing competitive in the global market, so as to not reduce the number of jobs available by demanding that employers pay their employees unprofitably high wages.

2.3 Industrial Parks

Industrial parks in Haiti and free zones in particular—where manufacturers benefit from temporary tax exemptions—continue to expand. The majority of growth is occurring in the
north, specifically in PIC and CODEVI, which now comprise approximately 36% of all exports and jobs in the sector (D’Sa, 2016). The areas surrounding these parks were previously largely undeveloped, with the majority of economic activity consisting of subsistence farming and informal economic activities. As such, the development of industrial parks in these areas constitutes a substantial change in available economic opportunities for local citizens. One would therefore expect the induced job impacts associated with the emerging apparel manufacturing industry in the northern parks to be substantial. As newly emerging industrial parks, PIC and CODEVI offer rich opportunities for assessing economy-wide job impacts from job growth in the apparel manufacturing sector.

PIC is under the administration of the Société Nationale des Parcs Industriels (SONAPI), a Haitian government entity that manages industrial parks. SONAPI also manages PIM, a well-established industrial park located in Port-au-Prince. SONAPI’s parks in Port-au-Prince (PIM) and Caracol (PIC) have the lowest tax rates of all Haitian parks (Société Nationale des Parcs Industriels [SONAPI], 2014). Approximately 55% of all apparel manufacturing jobs are within these two industrial parks under the administration of SONAPI. Although the majority of growth in the Haitian apparel manufacturing sector is occurring in the north, most of the activity in the sector is still concentrated in the capital, Port-au-Prince, and its environs. Although PIM is one of the more-established parks in Haiti, the apparel manufacturing value chain continues to evolve and expand, even in the best-established areas. Assessing job impacts resulting from apparel manufacturing activities in PIM offers insight into the economy-wide impacts of continued growth and development in a well-established industrial zone.5

Figure 4 shows the average quarterly apparel employment from 2013 to 2016 within each of eight industrial parks or trade zones for which employment information is available from ADIH. Table 4 lists the eight areas and their employment as of mid-2016.

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5 Once tested, the approach developed here could be adapted and expanded to the study of newly-emerging industrial parks that are being developed in areas with minimal formal economic activity to date. The approach could also be adapted to fit other sectors. If appropriate baseline data are collected before the parks are fully operational, a richer picture of the impact of apparel work on Haitian livelihoods will emerge.
Other production areas include: Les Palmiers Free Trade Zone, Société Immobilière de Développement S.A. (SIDSA), unaffiliated locations throughout Port-au-Prince, Superior Housing Development Corporation S.A. (SHODECOSA), and Delmas.

<table>
<thead>
<tr>
<th>Park</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIM</td>
<td>11,011</td>
</tr>
<tr>
<td>PIC</td>
<td>8,478</td>
</tr>
<tr>
<td>CODEVI</td>
<td>7,790</td>
</tr>
<tr>
<td>Les Palmiers FTZ</td>
<td>4,371</td>
</tr>
<tr>
<td>SIDSA</td>
<td>3,808</td>
</tr>
<tr>
<td>Port-au-Prince, unaffiliated</td>
<td>3,102</td>
</tr>
<tr>
<td>SHODECOSA</td>
<td>2,445</td>
</tr>
<tr>
<td>Delmas</td>
<td>≤ 250</td>
</tr>
</tbody>
</table>

CODEVI, PIC, and PIM accounted for nearly 67% of the total apparel sector employment available in 2016. Note, however, that since 2014, employment has shifted slightly away from PIM and toward PIC, indicating production growth in the north.
2.3.1 CODEVI

CODEVI is located in Ouanaminthe, a free zone located in Northeastern Haiti, bordering the Dominican Republic. As of 2015, the northeast department was estimated to have a population of 393,967 people, with 106,129 people residing in Ouanaminthe (Institut Haitien de Statistique et D'Informatique [IHSI], 2015). CODEVI employed around 7,800 people from the area in 2016, up from 300 in 2006, making the park the largest private-sector employer in the region. This employment is especially significant given the previously scarce availability of skilled jobs and income opportunities in the region (International Finance Corporation [IFC], 2016).

CODEVI was established in 2002 with financing from the International Finance Corporation (IFC), part of the World Bank group, and continued to receive international aid after its establishment, with investments from Soros Economic Development in 2006 and from the Clinton Foundation in 2012. The park offers tenants electricity, voice and data services, a recruitment and training center, a cafeteria, and recreational space. Despite these investments, commercial development of CODEVI has been slow. The park has nearly 375,000 square meters (4,000,000 square feet) of space, but as of 2015, only around 42,000 square meters (450,000 square feet) had been developed as industrial buildings (The Centre de Facilitation des Investissements [CFI] Haiti, 2015).

CODEVI is wholly owned and operated by Grupo M, a vertically-integrated Dominican apparel manufacturer. Assembly occurs in Ouanaminthe then manufacturers transfer products to finishing plants in Santiago, which are later shipped from Dominican ports. The goods still benefit from the HOPE act (Saint-Pre, 2014) because they are manufactured in Haiti. Some of the largest apparel brands purchasing CODEVI production include Old Navy, Banana Republic, Hanes, American Eagle Outfitters, Aéropostale, Lucky Brand, Dillards, and Levi’s.

2.3.2 PIC

PIC began operating in 2012 in the commune of Caracol in Northern Haiti. Approximately 60% of the active labor in the northern region is engaged in in the agricultural sector. Despite the large portion of labor devoted to agricultural practices, the northern region’s agricultural sector suffers from financial constraints and a lack of modern equipment and improved inputs. The northern department had an estimated population of 1,067,177 in 2015, with about 50% of people living in urbanized areas, and only about 7,714 people residing in Caracol (IHSI, 2015). PIC was constructed with the goal of decentralizing the manufacturing sector in Haiti away from Port-au-Prince and into underserved areas (USAID, 2016).

PIC was constructed with the support of the Haitian government, the Inter-American Development Bank, the US government, and Sae-A Trading Co. Ltd., its anchor tenant and Korea’s leading garment manufacturer (USAID, 2016). PIC is currently owned by the Haitian government and managed by SONAPI. The park is the only industrial location in the country that has its own power plant with a 10MW capacity, as well as a water supply plant, waste water treatment, solid waste disposal, ambulances, a fire station, and a fleet of buses to transport workers to and from surrounding communities (D’Sa, 2015). According to USAID, PIC is “one of the largest and most modern facilities of its kind in the Caribbean,” although the park is still early in its development. Although the potential industrial capacity of the park is estimated at around 10 million square feet, only a little over 1 million square feet had been constructed by the end of 2015 (D’Sa. 2015; USAID, 2016)
Employment within PIC continues to expand along with the physical construction of the space. Employment increased from 1,200 workers in 2012 to about 8,500 workers in May 2016 and grew 46.5% from 2015 to 2016 alone (ADIH, 2016). Similarly, exports totaled more than US$91 million in 2015 and grew by 78.1% from 2014 (D’Sa, 2015). Aside from the anchor tenant, Sae-A, other tenants include Peintures Caraïbes, a Haitian paint manufacturer and national affiliate of Sherwin-Williams that currently employs around 100 workers and plans to expand production; SISALCO, a manufacturer of sisal products; and Kaitec GaMa Enterprises, a furniture assembly company (CFI Haiti, 2015). The goal is for the park to employ 20,000 people by 2020 (Inter-American Development Bank [IDB], 2015).

2.3.3 PIM

PIM is a government-owned industrial park established in the early 1970s. Like PIC, PIM also falls under the management of SONAPI. PIM is located near Port-au-Prince’s international airport. The park is the largest in Haiti with more than 50 buildings inhabited by more than 20 businesses, of which most are apparel manufacturers (CFI Haiti, 2015). In total, more than 11,000 people work in the park, representing about 27% of Haiti’s apparel sector employment (ADIH, 2016). MCI along with SONAPI have outlined plans to expand the facility to employ approximately 6,000 more people (Haiti Ministry of Commerce and Industry, 2014). The main priority of the park is to promote export-oriented, labor-intensive industries.

2.3.4 Other Industrial Parks

Our analysis focused on PIM, PIC, and CODEVI largely for their size. Together they support more than 65% of Haitian apparel employment (SONAPI, 2014). However, there are several other industrial parks in Haiti, many are quite small and several others are still under development. Table 5 provides a brief summary of key information on some of Haiti’s industrial parks (omitted in our data collection efforts), which currently or plan to house apparel manufacturing firms.

<table>
<thead>
<tr>
<th>Name</th>
<th>Year Established</th>
<th>Location</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHODECOSA</td>
<td>1975</td>
<td>Port-au-Prince</td>
<td>More than 175,000 m² (2 million ft²) of covered space</td>
</tr>
<tr>
<td>Port Lafito (incl. business park)</td>
<td>Port opened in 2015, Park still underway</td>
<td>Not applicable</td>
<td>More than 90,000 m² (1 million ft²) of manufacturing space</td>
</tr>
<tr>
<td>SIDSA¹</td>
<td>Established in 2013, Completed: 2015</td>
<td>Tabarre, Port-au-Prince</td>
<td>More than 19,000 m² (200,000 ft²) of factory space for two buildings Planned: 39,000 m² (420,000 ft²)</td>
</tr>
<tr>
<td>Les Palmiers Free Trade Zone</td>
<td>2012</td>
<td>Carrefour</td>
<td>More than 50,000 m² (550,000 ft²)</td>
</tr>
</tbody>
</table>

Main Source: CFI Haiti, 2015

2.4 Global Competition

Haiti’s main regional competition for apparel exports to the US market are Nicaragua, the Dominican Republic, El Salvador, and Guatemala. Haiti offers apparel manufacturers less expensive labor than its competitors along with the use of “free-zones,” or industrial parks where manufacturers benefit from temporary tax exemptions. These benefits are in addition to Haiti’s close proximity to the US and duty-free access to US markets due to the HOPE and HELP acts. As a result, Haiti has become an increasingly appealing apparel manufacturing destination for companies throughout the world (D’Sa, 2016; Feeney et al., 2009). According to Nathan Associates Inc., “No other supplier matches Haiti for its wages, trainable and dedicated workforce, trade preferences into the US market, and physical proximity to customers (hence, short delivery times to market)” (Feeney et al., 2009, p. xiv). D’Sa noted some of the growth opportunities the Haitian apparel industry has, stating:

Retailers and brands who haven’t imported from Haiti are exploring product capabilities and the potential of the HOPE/HELP Act. In addition, manufacturers from South Korea, Taiwan, Bangladesh, and Sri Lanka are evaluating the various locations around the country that offer the opportunity to enjoy generous tax and duty holidays offered by the Government of Haiti…Potential manufacturers from [the] USA, Canada, Thailand, Taiwan, South Korea, and Sri Lanka are currently doing their due diligence or engaged in advanced negotiations. (2016, p. 1)

The US textile and clothing (T&C) market is highly concentrated with a large portion of total exports coming from low and middle income countries. Table 6 presents information on the top 20 T&C exporters to the United States. Together, these 20 exporters comprise 85% of total T&C exports. China strongly dominates the US market, providing 36% of US T&C imports. Vietnam stands as a distant second, comprising 9% of US T&C imports. Conversely, Haiti is 27th supplying less than 1% of US T&C imports.

Haiti’s key regional competitors—El Salvador, Nicaragua, Guatemala, and the Dominican Republic—rank 12th, 14th, 17th, and 22nd, respectively, in T&C exports to the US, contributing 1.6%, 1.1%, 1.0%, and 0.7%, respectively (World Bank, 2016). Data on T&C exports is not available from the World Integrated Trade Solution (WITS) data for Haiti but we have provided data from the US International Trade Administration for comparison.

Error! Reference source not found. also presents information on the top 20 global T&C exporters. In general, the global T&C market is less concentrated than US imports, with a smaller portion of total exports coming from low and middle income countries. Together, the top 20 exporters comprise 82% of the global market and, once again, China strongly dominates the global market, supplying 44% of total exports. The highlighted countries are most similar to Haiti in terms of their apparel sector’s share of exports and GDP per capita.

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6 Honduras ranks 98th and is, therefore, not reported here.
Table 6: Apparel Exports to US and World for Top 20 US Apparel Exporters (2014)

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Exports ($US million)</th>
<th>Share of US Imports Supplied</th>
<th>Apparel Exports to World as Percentage of GDP</th>
<th>GDP per Capita (Purchasing Power Parity USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>China</td>
<td>41,950</td>
<td>287,650</td>
<td>36.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>2.</td>
<td>Vietnam</td>
<td>10,324</td>
<td>25,241</td>
<td>8.8%</td>
<td>13.0%</td>
</tr>
<tr>
<td>3.</td>
<td>Hong Kong, China</td>
<td>7,260</td>
<td>29,213</td>
<td>6.2%</td>
<td>9.4%</td>
</tr>
<tr>
<td>4.</td>
<td>India</td>
<td>7,033</td>
<td>38,598</td>
<td>6.0%</td>
<td>1.9%</td>
</tr>
<tr>
<td>5.</td>
<td>Mexico</td>
<td>6,045</td>
<td>6,993</td>
<td>5.2%</td>
<td>0.6%</td>
</tr>
<tr>
<td>6.</td>
<td>Indonesia</td>
<td>3,959</td>
<td>12,741</td>
<td>3.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td>7.</td>
<td>Pakistan</td>
<td>3,110</td>
<td>13,773</td>
<td>2.7%</td>
<td>5.1%</td>
</tr>
<tr>
<td>8.</td>
<td>Canada</td>
<td>2,555</td>
<td>3,156</td>
<td>2.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>9.</td>
<td>Italy</td>
<td>2,271</td>
<td>37,110</td>
<td>1.9%</td>
<td>2.0%</td>
</tr>
<tr>
<td>10.</td>
<td>Sri Lanka</td>
<td>2,030</td>
<td>5,108</td>
<td>1.7%</td>
<td>6.2%</td>
</tr>
<tr>
<td>11.</td>
<td>Cambodia</td>
<td>1,837</td>
<td>5,383</td>
<td>1.6%</td>
<td>29.8%</td>
</tr>
<tr>
<td>12.</td>
<td>El Salvador</td>
<td>1,831</td>
<td>2,403</td>
<td>1.6%</td>
<td>9.3%</td>
</tr>
<tr>
<td>13.</td>
<td>Korea, Rep.</td>
<td>1,380</td>
<td>15,668</td>
<td>1.2%</td>
<td>1.1%</td>
</tr>
<tr>
<td>14.</td>
<td>Nicaragua</td>
<td>1,289</td>
<td>1,402</td>
<td>1.1%</td>
<td>11.0%</td>
</tr>
<tr>
<td>15.</td>
<td>Philippines</td>
<td>1,259</td>
<td>2,116</td>
<td>1.1%</td>
<td>0.7%</td>
</tr>
<tr>
<td>16.</td>
<td>Thailand</td>
<td>1,244</td>
<td>7,573</td>
<td>1.1%</td>
<td>1.9%</td>
</tr>
<tr>
<td>17.</td>
<td>Guatemala</td>
<td>1,196</td>
<td>1,548</td>
<td>1.0%</td>
<td>2.4%</td>
</tr>
<tr>
<td>18.</td>
<td>Jordan</td>
<td>1,177</td>
<td>1,382</td>
<td>1.0%</td>
<td>3.7%</td>
</tr>
<tr>
<td>19.</td>
<td>Turkey</td>
<td>996</td>
<td>29,039</td>
<td>0.9%</td>
<td>4.0%</td>
</tr>
<tr>
<td>20.</td>
<td>Egypt, Arab Rep.</td>
<td>900</td>
<td>3,016</td>
<td>0.8%</td>
<td>0.9%</td>
</tr>
<tr>
<td>27.</td>
<td>Haiti</td>
<td>769</td>
<td>854</td>
<td>0.7%</td>
<td>9.6%</td>
</tr>
</tbody>
</table>

Top 20 Total: 99,646 529,112 18.8% 4.0% —
All Apparel Exporters Total: 116,658 646,645 18.0% — —
Top 20 Share of Total: 85.4% 81.8% — — —

Notes and Sources:
Trade data for countries other than Haiti are from WITS database (World Bank, 2016). Trade Data for Haiti are from the US International Trade Administration's export.gov website. GDP data are from the World Bank (data.worldbank.org). World Bank data for Bangladesh were not available beyond 2011.
3. MEASURING JOB IMPACTS

In considering the economic benefit of the apparel sector to Haitian households, indirect and induced impacts provide a more complete picture of how apparel production supports employment throughout the economy. Income earned by Haitian manufacturers that is available for payment to employees in the apparel sector, and the sectors on which apparel production relies, comes almost entirely from abroad. Thus, the job impacts we calculate in this report are additive.

As apparel manufacturing expands in Haiti, so does the income available to support a variety of domestic employment. Apparel manufacturing in Haiti is not large enough to affect outcomes in the globally-distributed apparel industry. Therefore, the Haitian apparel industry could expand several times with no risk of filling, or even largely influencing, global apparel demand, even if the industry were to offer competitive price, quality, and technical capacities. This is not to argue that expansion would be assuredly the optimal development path for the Haitian economy. Rather, whatever the benefits of apparel sector employment are, they are limited primarily by Haitian firms’ production capacities and not by a lack of global market demand. Haitian apparel has ample opportunity for growth if it can remain competitive and attract investment. We offer some insights on limits to production capacities from our manufacturer interviews in Section 5.2. Below we describe our approach to quantifying direct, indirect, and induced job impacts.

3.1 Direct Job Impacts

We obtained direct employment totals from ADIH, who collected information on production workers as one measure of the size of the Haitian apparel sector. These data are available to USAID, LEVE, and the RTI economists conducting this work. Note that management and office staff are not production workers and are not included in ADIH’s data. We collected these additional employee data from ADIH members interviewed for this study (and estimated this headcount for members we did not interview for this study).

In addition, to evaluate the economic alternatives to apparel sector employees, we asked about their prior work and pay history, what employment alternatives they had considered, and work done by their other household members. These data helped characterize what the livelihoods of respondents might be like if they did not have the opportunity to work in the apparel industry. Comparing the economic well-being of respondents with and without their work in the apparel sector provides a more comprehensive picture of the impact of being employed in the sector.

3.2 Indirect Job Impacts

Indirect jobs are those in other parts of the supply chain whose employment is supported by employment within the sector of interest. For example, an apparel employee sewing tee shirts requires fabric, whose production supports employment for a textile industry worker producing the fabric. If there were less apparel production and, therefore, fewer apparel jobs, demand for fabric and the textile workers who make it would also be less. This is an example of a backward

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7 There is an important distinction between employment impacts or support and job creation. Kapstein, Kim, & Eggeling summarize the distinction well noting that “‘supports’ means that not all the jobs or value-added would necessarily vanish” without the direct activity, and that “‘creation’ indicates a net or incremental change while ‘support’ refers to an associated economic impact at a given point in time” (2012b, p. 2).
linkage—it involves employment associated with the supply of goods and services to the industry of interest. Indirect jobs also include forward linkages, which is employment supported by the activity of the industry of interest’s customers (e.g., wholesalers).

The International Finance Corporation (IFC) offers a report on estimating economy-wide job creation (IFC, 2013). Its authors emphasize that the level of indirect jobs generated in response to an increase in local production depends on how much of the supply-chain is domestic. To control for this, we discount the job impacts from value-chain linkages by the fraction of that sector’s demand that is imported. In the context of Haiti, this adjustment will be significant and vary depending on production type as full package producers demand more local services than cut-and-make manufacturers. As the number of local producers engage in more stages of the apparel supply-chain expands, the economic benefits of various stages of apparel production in Haiti will increase.

To calculate indirect impacts, we examined the input requirements and trade patterns of all sectors in the economy. For a given sector, one can sum the labor requirements of each unit of domestically produced input in the production process. For example, if producing widgets requires two units of energy, one unit of steel, and one unit of labor, and producing a unit of energy or steel requires 0.2 units of labor, then a widget requires \((1 + 2 \times 0.2 + 0.2 =) 1.6\) units of total labor, one direct and 0.6 indirect. For every one unit of labor employed in the widget sector, backward supply chain linkages support 0.6 units of labor. If instead 50% of steel is imported, our labor impact estimate falls from 1.6 to \((1 + 2 \times 0.2 + 0.5 \times 0.2 =) 1.5\).

These basic examples help illustrate the calculation we do for Haitian apparel. To improve our estimates of job impacts on the sector, we conducted a series of interviews with Haitian manufacturers in the apparel sector and parts of its supply chain. The primary purpose of these interviews was to elicit the required labor, energy, materials, and other inputs to the apparel manufacturing production process and supply chain. These data allow us to modify regional estimates of input requirements to reflect the reality in Haiti in our job impact estimates (detailed in Section 6.1). Trade can have a strong influence on impact estimates for a small country like Haiti where many productions inputs are imported. However, trade data are difficult to capture through interviews. Therefore, we relied on regional estimates as a benchmark, which were revised based on interview data (also detailed in Section 6.1).

### 3.3 Induced Job Impacts

Induced job impacts arise from wages spent on domestically produced goods and services by employees in the sector of interest. Employee wages support other jobs in the economy to the extent that the goods and services they consume require domestic labor to produce or provide. The calculation for induced impacts is very similar to that for indirect—the difference being the source of demand. Induced job impacts are an especially important consideration in areas with limited prior economic activity, for example, in CODEVI and Caracol. Individuals in these settings are far more likely to be securing new employment from induced economic activity as opposed to transitioning between jobs. Offering apparel work in these areas may mean that those taking employment are participating in the formal economy, or even working, for the first time.

In cases where formal employment increases in an area with limited prior economic activity, the new jobs are likely to make an even larger positive contribution to individuals’ economic well-being and provide the opportunity for new social benefits in the form of predictable household
incomes, tax revenue, health coverage, and retirement insurance. This “formalization” of the labor force can be an important component of economic development.

To improve our estimates of induced job impacts from the apparel sector in Haiti we surveyed apparel employees and a variety of vendors that operate in the environs of the industrial parks. We asked employees a variety of questions related to how much they earn now and before they worked in the apparel sector, how they spend their wages, and how their job has influenced their households. We asked food, household goods, and other product and service vendors how their revenue from apparel employees supports their businesses and the people they employ. We use these primary data to modify Global Trade Analysis Project (GTAP) data for the Caribbean region so that our estimates of induced-job-impacts more accurately reflect the Haitian economy. We explain this process in detail in Section 6.1.

3.4 Analyzing Job Impact Estimates

A 2013 IFC report on measuring job impacts of private sector investment and production reviewed 39 labor impact analyses from 2000 to 2011 (IFC, 2013). Note that these studies do not explicitly cover the apparel or textile sectors or the Haitian economy. However, within the studies reviewed, job impacts are most often estimated through the use of multipliers. For example, studies might report the total number of jobs (direct, indirect, and induced) per direct job created, dollar of project spending, or dollar of investment (our indirect and induced jobs impacts are per apparel production job).

The report finds that such multipliers can overstate job impacts when applied too broadly, even to the extent of implying jobs in excess of the total population. For example, not accounting for crowding out of existing businesses due to local capacity constraints can lead to overstatement. Overstated job impact findings may also stem from difficulty establishing an appropriate baseline or counterfactual scenario with which to compare outcomes. In such cases, it can be difficult to attribute job impacts properly to the program or policy of interest. IFC recommends determining job impacts by supplementing quantitative assessments with qualitative analyses whenever direct impact measurement (e.g., through quasi-experimental empirical methods) is not achievable.

Even reliably estimated labor multipliers will only approximate job impacts in a fixed context (i.e., absent shifts in other economic activities). Labor multipliers vary significantly from study to study depending on region and sector characteristics and will increase as more of the value chain is situated within the study area. Additionally, the number of indirect and induced jobs impacted as direct jobs are added to an economy likely decreases as the economy develops. One must collect observations over an extended period to understand long-term job impacts, since the linear relationships captured in a single “snapshot” of the economy are likely to evolve with the industry and economy.
4. EMPLOYMENT MULTIPLIERS FROM OUTSIDE HAITI

There are no studies that calculate the indirect and induced labor effects of the apparel industry in Haiti. However, for reference, we provide a review of existing literature on job impacts of light manufacturing sectors in developing countries. Although not specific to the apparel industry and/or the Haitian economy, this literature provides a valuable reference point against which we can compare our derived job impact estimates for the Haitian apparel sector. In the next subsection, we calculate job impact estimates for the twenty countries with the largest apparel exports to the US and for the Caribbean region containing Haiti. We base these estimates on national statistics compiled in the GTAP database.

4.1 Impact Estimates from Other Studies

The closest available estimate comes from a report by Koios Associates (2010) on Haitian industrial parks and trade, which estimates the job creation that would result from expanding industrial parks. The report uses an indirect multiplier of 2 for construction and textile worker jobs, but does not cite a source or rationale for this value. Similarly, the report uses an “income multiplier” (induced multiplier) of 2.35 for textile worker jobs, stating that the typical multiplier is 2.6 for apparel workers and 2.1 for textile workers, again not citing a source for the estimates. Additionally, in terms of induced job impacts, the report suggests that among low-paid industrial workers in Haiti, “an estimated 85% of income goes for consumer spending,” (Koios Associates, 2010, p. 82) but does not indicate a source for this estimate either. These impact estimates are greater than our estimates, however, their lack of documentation undercuts our confidence in meaningful comparison.

As part of a series of IFC reports (Kapstein et al., 2012a; Kapstein, et al., 2012b; Kapstein et al., 2012c) the value-added impact of IFC investments were calculated for a variety of sectors in Jordan, Ghana, and Tunisia. The authors presented estimates for the manufacturing or industrial sectors, of which clothing and textile manufacturing was a subset. The same authors published all three studies simultaneously, which were conducted using similar input-output (I-O) analysis methods. The main drawbacks to these analyses are that they are for other sectors and countries, they do not report jobs-only multipliers, and the estimates vary somewhat widely. The studies do offer some valuable insight into how induced and indirect impacts relate to one another. Induced job impacts are estimated to be 22% higher than indirect job impacts in Ghana and Tunisia, and 41% higher in Jordan.

A study by Chan and Oum (2011) assessed the extended job impacts of expanding garment and textile trade in Cambodia. Using I-O models, Chan and Oum estimated the direct, indirect, and induced (income effect) job impacts of expanding trade. In calculating induced job effects, they assumed that workers spent approximately 90% of their income on consumer goods, a similar assumption to that of the Koios report carried out in Haiti. The estimates of direct and total job growth imply a job multiplier (induced and indirect) of 1.85 for all jobs and 1.56 for jobs among women specifically (Chan & Oum, 2011). The similarity of the development setting and the studied industry make this a valuable point of comparison for our results.

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8 Textile manufacturing is a separate sector than clothing/apparel manufacturing but the two are often considered in tandem.
Another study by van Chung (2014) analyzes the indirect and induced job impacts of the textiles and clothing sector (and several others) in Vietnam using I-O analysis. The methods used to derive the multipliers are comparable to our approach and are focused on the apparel sector, however the authors state them relative to an increase in final demand and do not present sufficient supporting data to convert to an employment multiplier.

Identifying comparable studies for our application was challenging. Even if one accepts that estimates may not exist for the given locality or sector of interest, the measures chosen by the researchers may differ and lack supporting data rendering the study incomparable. Moreover, researchers may not calculate the multiplier estimates at all, rather offering “rule-of-thumb” values. This lack of comparable, third-party estimates further motivates the need for our study. Table 7 summarizes the three estimates of indirect and induced job impacts we were able to identify as comparable to those developed in this report. As no comparable indirect estimate was available from the Kapstein et al., studies, we use the Greek letter alpha (α) as a placeholder for the indirect estimate.

<table>
<thead>
<tr>
<th>Source</th>
<th>Indirect</th>
<th>Indirect + Induced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chan and Oum (2011)</td>
<td>1.56</td>
<td>1.85</td>
</tr>
<tr>
<td>Koios Associates (2010)</td>
<td>2</td>
<td>2.35</td>
</tr>
<tr>
<td>Kapstein et al. (2012a–c)</td>
<td>α</td>
<td>1.21α to 1.41α</td>
</tr>
</tbody>
</table>

### 4.2 Impact Estimates Calculated for Apparel in Other Countries

We calculated labor impacts based on national statistics from a range of countries by using GTAP’s compiled social accounting data for 57 countries for the year 2011 (Center for Global Trade Analysis, 2011), which provide the input and output relationships for producers and consumers in each economy. One can use these data to calculate a variety of standard measures of economic impacts in an economy. We calculated the relationship between employment in the apparel sector and employment in other sectors in each economy. This “indirect” job impact measure conveys the additional labor demand likely to coincide with additional labor demand in the apparel sector. As the apparel sector output expands and additional workers are hired, we can gain a basic appreciation of how employment elsewhere in the Haitian economy is likely to respond. We also calculated the relationship between consumer spending and labor demand in the economy. This “induced” job impact measure conveys the additional labor demand likely to coincide with apparel sector employees’ demand for goods and services. These measures indicated how labor in different parts of the economy relate. Section 5.2 details how a large portion of apparel workers was previously unemployed or underemployed.

Table 8 provides the indirect and induced multiplier estimates from competing apparel-producing nations and the whole Caribbean region. In addition to Haiti, GTAP’s Caribbean region includes Cuba, the Bahamas, Barbados, and several other island nations. The highlighted countries are most similar to Haiti in terms of their apparel sector’s labor share, apparel exports as a share of GDP, and GDP per capita (see Table 6 for these measures). The magnitude of the induced and indirect effects relative to indirect effects only is broadly consistent with estimates.
from Section 4.1—roughly between 20% to 50% higher. The indirect and induced multipliers for the Caribbean region are 4.31 and 5.97, respectively, which are well above the median, largely because of the region having an unusually lower labor share (7.6%).

These estimates will be lower for Haiti as we discount for a large fraction of foreign-sourced material and the unemployment rate. We make these adjustments to the multiplier calculation inputs in Section 6.2 to derive Haiti-specific multiplier estimates based on the results of our primary data collection, detailed in the next section.

| Table 8: Indirect and Induced Labor Impact Estimates for the Wearing Apparel Sector |
|-----------------|----------------|----------------|----------------|
| Country/Region  | Labor Share   | Indirect       | Indirect +     |
|                 |               |                | Induced        |
| Caribbean       | 7.6%          | 4.31           | 5.97           |
| 1. China        | 16.1%         | 3.15           | 5.60           |
| 2. Vietnam      | 5.1%          | 3.75           | 5.08           |
| 3. Hong Kong, China | 21.6%      | 1.67           | 2.08           |
| 4. India        | 18.1%         | 2.37           | 3.79           |
| 5. Mexico       | 12.8%         | 1.95           | 2.56           |
| 6. Indonesia    | 17.1%         | 2.30           | 3.39           |
| 7. Pakistan     | 1.9%          | 15.38          | 18.01          |
| 8. Canada       | 25.7%         | 1.60           | 2.71           |
| 9. Italy        | 12.4%         | 2.19           | 2.88           |
| 10. Sri Lanka   | 10.5%         | 2.00           | 2.69           |
| 11. Cambodia    | 13.0%         | 1.90           | 2.40           |
| 12. El Salvador | 30.9%         | 1.39           | 1.77           |
| 13. Korea, Rep. | 9.7%          | 3.28           | 4.75           |
| 14. Nicaragua   | 29.2%         | 1.73           | 2.46           |
| 15. Philippines | 13.7%         | 1.55           | 2.17           |
| 16. Thailand    | 10.3%         | 2.76           | 3.60           |
| 17. Guatemala   | 20.6%         | 2.09           | 3.18           |
| 18. Jordan      | 13.7%         | 1.78           | 2.11           |
| 19. Turkey      | 6.8%          | 3.62           | 5.17           |
| 20. Egypt, Arab Rep. | 15.1%     | 2.25           | 3.24           |

<table>
<thead>
<tr>
<th></th>
<th>25th Percentile</th>
<th>Median</th>
<th>75th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.4%</td>
<td>1.74</td>
<td>19.9%</td>
</tr>
<tr>
<td></td>
<td>13.7%</td>
<td>2.14</td>
<td>3.05</td>
</tr>
<tr>
<td></td>
<td>19.9%</td>
<td>3.05</td>
<td>4.51</td>
</tr>
</tbody>
</table>

Notes and Sources:
Labor share and multipliers are calculated based on the GTAP 9 database, which represents the year 2011.
Data are sorted based on textile and clothing exports to the US. Bangladesh is excluded based on limited trade data to assign its rank. Multipliers for Bangladesh are high, 5.9 and 9.7 with a relatively low labor share at 8.7%. 
5. SURVEY AND INTERVIEW RESULTS

None of the industry reports, case studies, or regional multipliers reveal the specific job impacts associated with the apparel sector in Haiti. To help overcome this data gap, two data collection methods were used: (1) RTI conducted interviews with apparel manufacturers and their suppliers and (2) RTI directed a local survey firm, Socio-Dig, to carry out field surveys to sample the income and expenditure behaviors of apparel employees, manufacturers, suppliers, and vendors located near the industrial parks. Before conducting these interviews and surveys, RTI staff met with staff from USAID, LEVE, and ADIH to inform the design of our data collection efforts. The survey data we collected support our estimation of induced labor impacts, while the interview data support our estimation of indirect labor impacts. This section covers our data collection methods and results.

5.1 Data Collection Methods

RTI interviewed apparel manufacturers and their suppliers to identify the extent to which activity in the apparel sector influences local labor demand (see Table 9). Staff from LEVE and ADIH helped arrange manufacturer and supplier interviews. RTI conducted all interviews at the interviewee’s place of business (except for one done by phone) in the vicinity of Port-au-Prince. We provided interviewees a general overview of the reason and intent of the report and assured anonymity of their responses to encourage candor. A staff member from ADIH or LEVE was present for all manufacturer interviews and all but two supplier interviews. All interviews were in English and lasted between 30 to 90 minutes. Interviewees were not offered compensation for their time. Appendix A provides the questions asked during the interviews.

<table>
<thead>
<tr>
<th>Table 9: Summary of Primary Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Sample</td>
</tr>
<tr>
<td>Indirect Job Impacts – Structured Interviews</td>
</tr>
<tr>
<td>1. Apparel factory managers</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2. Apparel industry support firms</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Induced Job Impacts – Field Surveys

| 1. Apparel industry production workers     | 406 PIM 399 PIC 400 CODEVI 1,205 Total | • Income and spending habits |
|                                           |                                         | • Household demographics |
|                                           |                                         | • Alternative household income sources |
|                                           |                                         | • Domestic production |
|                                           |                                         | • Economic status before and after job |
| 2. Business park vendors                   | 41 PIM 25 PIC 30 CODEVI 96 Total        | • Share of business associated with apparel workers |
|                                           |                                         | • Scale and variance of operations |
|                                           |                                         | • Types of expenses |
|                                           |                                         | • Response to hypothetical situations |

Additionally, Socio-Dig conducted 1,301 field surveys of apparel employees and vendors near the parks. These surveys were done in person, in or near PIM, PIC, and CODEVI.
during the respondents’ lunch break and before or after their shifts. Socio-Dig only surveyed respondents who were either current employees or had worked in the apparel sector within the six months prior to the survey. The surveys took approximately 20 minutes (on average) and surveyors did not offer respondents compensation. Surveyors told respondents that USAID and LEVE were sponsoring the survey to understand what work in the apparel sector was like and assured respondents that their responses would remain anonymous. Appendix B provides the questions asked during the survey.

5.2 Apparel Manufacturer Interview Findings

The apparel manufacturing interviews illuminated the changing structure of the apparel industry in Haiti. Two of the companies interviewed had been in business for more than 30 years, while two others had been in business for less than 2 years. The smallest company interviewed only employed about 38 workers and 14 administrative staff, producing about 2,600 units per week. The largest company was a conglomerate of several companies, employing about 7,700 workers and 700 administrative staff and producing about 2.1 million units per week. Among the moderately sized companies, employment averaged about 1,200 workers and 110 administrative staff while production averages were about 105,000 units per week.

Labor typically constitutes about 63%–80% of total costs for cut and make producers, with the next highest expenses being physical capital (10%–30%) and energy (about 10%). Respondents either did not respond on materials and supplies or reported that they constituted only 5%–6% of total costs. In contrast, labor only constitutes around 20% of total costs for full package production, with materials and supplies constituting about 60% of costs. Full package respondents still estimated energy to be 10% of total costs.

We found that growth over the past three years was flat for some of the companies interviewed, but extensive for others, ranging from 25%–50% each year. However, even among the companies who have experienced strong growth recently, projected growth for the 2017 calendar year is more moderate, most commonly estimated at around 10% (one respondent did predict up to 25% growth for next year). Employers generally estimated that line worker employment growth would coincide one-to-one with overall production growth, which is consistent with what is assumed in standard multiplier analyses. One respondent projected that 10,000 apparel manufacturing jobs could be added throughout the industry next year (or 25% growth over the current 41,000 jobs), with 10,000–15,000 additional jobs possible to add over the next 2–3 years if there is political and wage stability.

Some manufacturers indicated that sustained growth depended in part on their ability to transition to full package manufacturing. Running a full package operation enables manufacturers to reach new clients that may not be interested or accustomed to working with cut and make operations. Full package operations tend to operate with more administrative and managerial staff to coordinate the higher complexity of their operations, supporting more “middle-class” jobs. With the ability to contract their own suppliers, full package operations can support Haitian firms, leading to greater indirect employment impacts. The benefits of full package operations are threefold, it can

1. secure a broader range of clients to drive production employment,
2. provide higher-skilled jobs, and
3. support more indirect employment.
Apparel manufacturing owners expressed several concerns with respect to their prospects for future growth. Certain manufacturers identified specific wage ranges at which they could continue to be competitive and ranges where they would expect to be priced out of the international apparel market. Uncertainty in the minimum wage was a key concern for many manufacturers; some respondents even recommended a wage freeze. Manufacturers frequently cited political instability as a hindrance for maintaining or growing business, both in general and with respect to wage policies. Finally, manufacturers identified poor infrastructure, high cost of doing business, and high cost of healthcare as major factors limiting their competitiveness for more business.

5.3 Apparel Industry Employee Survey Results

Surveyors solicited apparel employees with a 2-to-1 female-to-male ratio to reflect our best estimates of the gender composition of the parks. Respondents must have held an apparel factory job within the six months prior to the survey. Aside from these perimeters, surveyors solicited employees based on the availability of those in the park and their willingness to respond to the survey. Table 10 summarizes some key demographic characteristics of the survey respondents.

<table>
<thead>
<tr>
<th>Table 10: Employee Survey Respondent Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Number of Respondents</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Percent Male</td>
</tr>
<tr>
<td>Years of Education</td>
</tr>
<tr>
<td>Percent Married</td>
</tr>
<tr>
<td>Number of Children</td>
</tr>
</tbody>
</table>

Notes: Standard deviations are in parentheses.

5.3.1 Demographics

Of the 1,205 respondents, roughly two-thirds were female with an average of 10 years of education with significant variation across individuals. More than 80% of respondents were unmarried although nearly 40% of the respondents indicated that they were coupled or married. Note that marriage rates were markedly lower at PIC. Nearly a third of respondents had no children, and a little more than half had only one or two children.

5.3.2 Earnings

Table 11 summarizes household earner information. The majority of respondents were the main earner in their households. On average, respondents lived with about one other earner. Female respondents were slightly less likely to have other earners in their households, were less likely to be their household’s main earner, and far less likely to be the head of their household, even when identifying as unmarried and single (roughly two thirds of these women’s households were headed by a parent or sibling). Factory work was the main source of income for the majority of
respondents’ households (64%) with trade/commerce (8.7%), computer expert (6.9%), construction (5.0%), and agriculture (3.3%) providing the next most common primary income sources.

Table 11: Summary of Household Earners

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heads of Household</td>
<td>Female</td>
<td>52.2%</td>
<td>28.5%</td>
<td>38.2%</td>
<td>39.7%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>77.5%</td>
<td>50.5%</td>
<td>65.6%</td>
<td>65.2%</td>
</tr>
<tr>
<td>Is Main Earner</td>
<td>Female</td>
<td>64.7%</td>
<td>55.6%</td>
<td>52.3%</td>
<td>58.0%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>79.3%</td>
<td>72.2%</td>
<td>65.0%</td>
<td>70.9%</td>
</tr>
<tr>
<td>Number of other earners</td>
<td>Female</td>
<td>0.7</td>
<td>1.0</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>0.9</td>
<td>1.1</td>
<td>1.3</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Notes: Percentages are calculated relative to the sub-population (e.g., 52.2% of female respondents [only] in PIM identified as the head of household).

Respondents worked on the factory floor with few exceptions and 3% of respondents held a supervisory or managerial role (not included in the tables). Approximately 66% of respondents had never experienced a layoff and 30% had experienced between 1 and 5 layoffs over an average of 2–3 years in their position. A large minority of respondents (38.5%) reported having no work before their factory job, with slightly fewer (34%) being engaged in trade/commerce. Nearly all respondents (93%) indicated that the factory job was important or very important to their household.

Average net daily wages were mostly between 300 and 400 HTG, or approximately $5–$7. Respondents reported their net daily wage, which equals their gross wage, less 6% for retirement insurance (Office National d’Assurance vieillesseu or ONA). Employees may have other amounts withheld for purposes, such as savings or healthcare expenses, but these withholdings vary. Table 12 provides a detailed summary of reported wages for (non-managerial) apparel factory workers. The reported data indicate that men appear to earn wages about 10% higher than women across experience levels. Looking only at seamsters/seamstresses diminishes this difference somewhat.

The reported net wage averages are near the minimum net piece rate wage of 320 HTG per day. Median net wages were slightly above this minimum piece rate wage. Approximately one in three respondents reported earning less than the net minimum on average. It is possible that some of these respondents reported wages net of additional withholdings that would be consistent with earning at or above the minimum; however, our findings are not inconsistent with those of Better Work Haiti (Better Work Haiti, 2016).

The percent reporting wages above the minimum was significantly higher in CODEVI than PIC or PIM. Unfortunately, we did not collect data on whether respondents were working a piece rate or not, but piece rate wages are widely-regarded as the norm. These findings may offer limited corroboration to the claim that some apparel workers experience difficulty meeting the quotas required to earn the piece rate minimum wage. The data also show little to no earnings premium for experience beyond one year (see Table 13).
Table 12: Reported Average Net Daily Wages for Apparel Workers by Experience (HTG)

<table>
<thead>
<tr>
<th>Experience</th>
<th>Gender</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 Year</td>
<td>Female</td>
<td>307</td>
<td>302</td>
<td>312</td>
<td>307</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>346</td>
<td>359</td>
<td>328</td>
<td>344</td>
</tr>
<tr>
<td>1 to 3 Years</td>
<td>Female</td>
<td>318</td>
<td>333</td>
<td>349</td>
<td>369</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>324</td>
<td>391</td>
<td>386</td>
<td>370</td>
</tr>
<tr>
<td>4 to 9 Years</td>
<td>Female</td>
<td>334</td>
<td>405</td>
<td>374</td>
<td>383</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>345</td>
<td>417</td>
<td>399</td>
<td>386</td>
</tr>
<tr>
<td>10+ Years</td>
<td>Female</td>
<td>298</td>
<td>0</td>
<td>380</td>
<td>357</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>463</td>
<td>417</td>
<td>396</td>
<td>422</td>
</tr>
</tbody>
</table>

Note: Managers are excluded from the averages.

Table 13: Reported Median Increase in Net Daily Wages from Apparel Job Relative to Previous Work

<table>
<thead>
<tr>
<th>Experience</th>
<th>Gender</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>Full Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 Year</td>
<td>Female</td>
<td>239</td>
<td>250</td>
<td>175</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>119</td>
<td>160</td>
<td>220</td>
<td>168</td>
</tr>
<tr>
<td>1 to 3 Years</td>
<td>Female</td>
<td>214</td>
<td>277</td>
<td>220</td>
<td>243</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>78</td>
<td>224</td>
<td>236</td>
<td>209</td>
</tr>
<tr>
<td>4 to 9 Years</td>
<td>Female</td>
<td>258</td>
<td>246</td>
<td>266</td>
<td>266</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>164</td>
<td>55</td>
<td>205</td>
<td>189</td>
</tr>
<tr>
<td>10+ Years</td>
<td>Female</td>
<td>119</td>
<td>...</td>
<td>335</td>
<td>308</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>111</td>
<td>-126</td>
<td>-64</td>
<td>-126</td>
</tr>
</tbody>
</table>

Note: Managers are excluded from the averages.

The wages apparel workers earn are significantly higher than the wages they reported earning in prior work by about 150–300 HTG per day, or roughly $2.50–$5.00. These wage increases are relative to what was previously available to those surveyed. Although many respondents (38%) were unemployed before their apparel jobs, even just among those who were employed, wage increases ranged from 0 to 100 HTG per day. Table 13 summarizes the median wage increases for all respondents in detail. Drawing on the same information, Figure 5 illustrates how the income gains tended to be higher for women, which is driven partly by the fact that women were 50% more likely to be unemployed before taking their apparel job.

The averages presented in Table 12 and Table 13 mask some variation in outcomes. Although apparel workers are averaging wages in excess of 300 HTG per day, roughly 10% reported net earnings between 250 and 300 HTG per day and about 20% of respondents indicated that their apparel wages were lower than their previous earnings, presumably work that is no longer

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9 Assuming a conversion rate of approximately 60 HTG per US dollar. These wages are all net.
available to them. Respondents appear to be earning more in apparel work on average than they could otherwise, but many are still falling short of the minimum piece rate wage.

**Figure 5:** Net Median Income Gains from Apparel Work (HTG) by Park, Experience, and Sex

![Figure 5: Net Median Income Gains from Apparel Work (HTG) by Park, Experience, and Sex](image)

<table>
<thead>
<tr>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 Year</td>
<td>200.0</td>
<td>100.0</td>
<td>300.0</td>
<td>100.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1–3 Years</td>
<td>300.0</td>
<td>200.0</td>
<td>400.0</td>
<td>300.0</td>
<td>200.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4–9 Years</td>
<td>400.0</td>
<td>300.0</td>
<td>500.0</td>
<td>400.0</td>
<td>300.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Female** | **Male**

5.3.3 Economic Outcomes

Table 14 summarizes respondents’ views, by gender, on the economic condition of their households since taking their apparel job. In general, female respondents reported their economic condition as slightly better: 77% viewed it better or much better. Moreover, the majority of respondents expected to stay at their job for two or more years, with slightly longer expectations in PIM.

Factory work appears to have made a largely positive impact on respondents’ livelihoods. Two-thirds of respondents indicated that they received health insurance from their employer and few would have had access to employer-sponsored health services based on the previous work history respondents identified. Respondents also indicated that their jobs had enabled them to afford new expenses, such as schooling (54.7% overall or 67.4% among those with children), electronics (48.0%), land (11.2%), and livestock (4.8%). There were apparent gender differences in these results, for example, women were 7.4 percentage points more likely to indicate new schooling expenses and men 8.4 percentage points more likely to indicate new electronics expenses.
Despite significant improvements in their economic situation, half of respondents earned at or below the minimum piece rate wage. Lower wages can put a significant dampening impact on induced job creation through lower expenditures. Certain expenditures, such as education, have compounding effects that may be forgone if wages are insufficient. Appendix C provides additional summary information of apparel factory work experiences from respondents to initial focus groups conducted by Socio-Dig to test the survey questions.

### Table 14: Change in Economic Condition of Households since Apparel Job

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Gender</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>Full Sample (Male &amp; Female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Much Better</td>
<td>Female</td>
<td>24.5%</td>
<td>29.5%</td>
<td>17.7%</td>
<td>21.3%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>13.5%</td>
<td>21.6%</td>
<td>11.7%</td>
<td></td>
</tr>
<tr>
<td>Better</td>
<td>Female</td>
<td>56.5%</td>
<td>57.9%</td>
<td>47.3%</td>
<td>55.7%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>59.5%</td>
<td>63.9%</td>
<td>54.4%</td>
<td></td>
</tr>
<tr>
<td>Same</td>
<td>Female</td>
<td>17.3%</td>
<td>11.9%</td>
<td>33.2%</td>
<td>20.5%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>21.6%</td>
<td>12.4%</td>
<td>28.3%</td>
<td></td>
</tr>
<tr>
<td>Worse</td>
<td>Female</td>
<td>1.7%</td>
<td>0.3%</td>
<td>1.4%</td>
<td>2.2%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>5.4%</td>
<td>2.1%</td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td>Much Worse</td>
<td>Female</td>
<td>0.0%</td>
<td>0.3%</td>
<td>0.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.6%</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Percentages are calculated relative to the sub-population (e.g., 24.5% of female respondents [only] in PIM identified the economic situation of their household as “much better”). Totals are calculated across both genders.

### 5.4 Apparel Industry Supplier Interview Findings

The amount and type of business that is demanded from local suppliers by Haitian apparel manufacturers differs substantially among full-package and cut-and-make production. For example, our interviews suggested that only full-package production lines source threads and polybags from local suppliers, while most cut-and-make producers have all raw materials shipped to them from their customers. Similarly, other service providers are only directly contracted by full-package Haitian apparel manufacturers. Otherwise business for cut-and-make manufacturers is typically contracted by the international customers (e.g., Gildan, Hanes, etc.).

As a result, there is only one company in Haiti that is predominantly focused on supplying these raw materials to Haitian apparel manufacturers. Another local company produces cartons for the apparel industry, with 100% of their business coming from the apparel industry. Similarly, only one other company supplies polybags to the apparel industry, but this production line constitutes less than 1% of that company’s total production. The two producers dedicated exclusively to supplying raw materials to the apparel manufacturing industry each employ approximately 100 workers, with labor constituting about 30% of their total production costs.

Apparel manufacturing constitutes approximately 70%–90% of the exports handled by the transportation agents we interviewed, which is consistent with the national estimates of apparel

---

10 Cut-and-make manufacturers receive all required production materials and ship their product “at the door”, in colloquial terms. This means that the customer will handle import, in-country transportation and logistics, and export.
manufacturing exports. Nearly all of these exports travel to the United States. In contrast, imports of raw materials for the Haitian apparel industry only constitute about 10% of the imports handled by the transportation companies interviewed. Again, only full-package manufacturers contract their own raw materials imports. The transportation agents also noted that Haiti imports substantially more than it exports. One company indicated that for every 10,000 full incoming containers they handle, only 2,500 are exported back out full; the remaining 7,500 containers are exported empty for additional imports, adding to total shipping costs.

The transportation agencies interviewed differ in overall scale and employment structure: one has about 28 employees, with most of these being in management; the other has about 80 employees with only about 4 of these being managers. Nonetheless, both indicate that labor constitutes approximately 40%–50% of their total costs.

Expectations of future growth in the apparel manufacturing industry among suppliers were modest (less than 10%). Suppliers consistently indicated that international companies are reluctant to locate to Haiti given the poor infrastructure and political uncertainty in the region. Respondents suggested that a lack of regulations or enforcement regarding security employee pay and job training has allowed for a large increase in the number of security providers in Haiti providing low cost service by maintaining poor quality standards and ignoring national minimum wage laws.

5.5 Street Vendor Survey Results

Socio-Dig surveyed vendors situated near the three parks. Respondents were proprietors of the business or, in three cases, not the proprietors but well-enough informed to speak on behalf of the business operations. The vendor surveys were about half as long as the employee surveys, taking about 10 minutes to complete. Relative to apparel employees, vendors were older (average of 37 years), had more children (average of 2.8), and had completed fewer years of schooling (average of 6.5; see Table 11). Most of the respondents had been in operation for six years or less. Next to the sales offered by situating near the park, several vendors identified the park’s security as a valuable benefit to their business. Roughly 70% of vendors indicated that the revenue at the park was their only revenue source.

The surveyors counted the number of vendors in each park but were not able to count all vendors exactly and had to make estimates in some instances. Surveyors were not able to enter inside PIC but were able to obtain a total number of vendors from the park association. PIM has by far the largest number of vendors inside and surrounding its park. Food and transportation vendors are most common. Table 15 summarizes the number of vendors counted and surveyed at the three parks by the type of item(s) they sell.

We asked vendors for their number of customers and revenue on their best and worst days and we looked at the midpoint to find what a typical day might be for them. Since our survey sample is heavily biased toward prepared food and snack/beverage vendors, we focused on activity for these two groups. Table 16 provides estimates for revenue and number of patrons as reported by the surveyed vendors and extrapolated to estimate park totals based on the number of vendors identified by surveyors.
**Table 15:** Number of Park Vendors Counted and Surveyed by Type

<table>
<thead>
<tr>
<th>Items Sold</th>
<th>PIM</th>
<th>PIC</th>
<th>CODEVI</th>
<th>Counted Total</th>
<th>Surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport (moto, tap tap, bus)</td>
<td>65*</td>
<td>60–65*</td>
<td>50</td>
<td>175–180*</td>
<td>1</td>
</tr>
<tr>
<td>Cooked food</td>
<td>90</td>
<td>78</td>
<td>21</td>
<td>168+</td>
<td>8</td>
</tr>
<tr>
<td>Snacks/beverages</td>
<td>100</td>
<td>4</td>
<td>7</td>
<td>121+</td>
<td>13</td>
</tr>
<tr>
<td>Telephone minutes</td>
<td>12</td>
<td>200*</td>
<td>4</td>
<td>16+</td>
<td>7</td>
</tr>
<tr>
<td>Drugs or cosmetics</td>
<td>29</td>
<td>7</td>
<td>36+</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Lottery tickets</td>
<td>14</td>
<td>4</td>
<td>18+</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Used clothes</td>
<td>39</td>
<td>13</td>
<td>52+</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>All Vendors</td>
<td>449*</td>
<td>260–265*</td>
<td>248</td>
<td>957–962*</td>
<td>31</td>
</tr>
</tbody>
</table>

Notes:
1. Asterisked numbers are estimates.
2. Many vendors at PIC operate within the park, which was not available to the surveyors.
3. The park association provided an estimate of 200 vendors but did not provide a breakdown by items sold.
4. Except for the all vendors total, amounts in the “Counted Total” column do not reflect the totals for PIC, which were not broken out. Numbers with + indicate that exact numbers were not captured, but the totals take into account the unknown vendors from PIC.

Table 16: Food and Beverage Vendors’ Income and Patronage by Park

<table>
<thead>
<tr>
<th>Type of Items Sold</th>
<th>Revenue per day (USD)</th>
<th>Patrons per day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PIM</td>
<td>PIC</td>
</tr>
<tr>
<td>Per Vendor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooked food</td>
<td>$71.43</td>
<td>$92.70</td>
</tr>
<tr>
<td>Snacks/beverages</td>
<td>$25.14</td>
<td>$50.36</td>
</tr>
<tr>
<td>Park total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(extrapolated)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooked food</td>
<td>$6,429</td>
<td>$5,921</td>
</tr>
<tr>
<td>Snacks/beverages</td>
<td>$2,514</td>
<td>$2,317</td>
</tr>
</tbody>
</table>

Notes:
1. Per vendor amounts are the midpoint of best and worst days reported by vendors.
2. Extrapolated values are based on multiplying the per-vendor amounts by the number of vendors.
3. PIC vendor numbers equal the ratio of total PIC vendors to total PIM and CODEVI vendors’ times the total number of food or snack/beverage vendors in PIM and CODEVI.

The majority of vendors worked without paid help, but 30% of prepared-food and snack and beverage vendors paid at least one employee. By headcount, we estimate that there are slightly more people employed by park vendors (1,074, Table 17) than there are vendor establishments (approximately 960, Table 15). We used the average number of employee vendors reported in

---

1 The term “employee” refers to any helpers that the vendor compensated in any way. Responses to questions about daily wages for these employees were scant and inconsistent with how the surveyors posed the questions. This is likely due to the informal nature of the work, with compensation sometimes given in the form of food. Because of the poor quality of the compensation data collected, we did not report them.
the surveys to estimate total vendor employment in each of the parks. Table 17 shows that vendor employment is roughly 4% of total apparel employment across the parks. This amount is an important component of the induced labor impact estimate, but is not especially large.

<table>
<thead>
<tr>
<th>Table 17: Apparel Versus Vendor Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Apparel Employees</strong></td>
</tr>
<tr>
<td>PIM</td>
</tr>
<tr>
<td>13,000</td>
</tr>
<tr>
<td><strong>Average Vendor Employees</strong></td>
</tr>
<tr>
<td>Cooked food</td>
</tr>
<tr>
<td>Snacks/beverages</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Total Vendor Employees</strong></td>
</tr>
<tr>
<td>Cooked food</td>
</tr>
<tr>
<td>Snacks/beverages</td>
</tr>
<tr>
<td>Other*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>Vendor/Apparel Employment</strong></td>
</tr>
<tr>
<td>Cooked food</td>
</tr>
<tr>
<td>Snacks/beverages</td>
</tr>
<tr>
<td>Other*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

* No observations for other vendors were available for PIC. Employees per vendor for this group is assumed equal to one.
6. JOB IMPACT ESTIMATES

This section explains the methods we used to calculate the employment impacts of jobs in the Haitian apparel sector. It reflects the combined knowledge we gained from existing sources and data collected in Haiti for this report. Our results indicated that for every person employed manufacturing apparel in Haiti, approximately 0.28 jobs are active elsewhere in the apparel supply chain in Haiti and approximately 0.33 jobs are active supplying goods and services to apparel workers. In total, this amounts to 24,892 jobs outside the apparel sector that are actively supporting the 41,000 jobs within it, meaning a total of 65,892 jobs depend on the Haitian apparel industry. These figures demonstrate the breadth of economic impact apparel employment can have, underscoring its importance as a source of economic opportunity for Haiti.

6.1 Incorporating Manufacturer Responses in our Economic Model

We used primary and secondary data to modify the multiplier calculation inputs from GTAP data, presented in Section 4.2. The calculations are drawn from standard input-output modeling techniques (Miller & Blair, 2009). Key inputs to the calculation include:

- Value of inputs to the production processes in the economy,
- Value of expenditures on different goods by consumers, and
- Share of goods used by producers and consumers that are imported.

We first used data collected from our interviews with apparel manufacturers to modify the production cost structure of the apparel sector represented in the GTAP data to reflect Haitian production characteristics. The primary modifications made were to apparel manufacturers’ labor and energy costs.

The labor cost share for the Caribbean region, presented in Table 6, was quite low relative to other regions and the data we collected in interviews. Adjusting the labor share upward to reflect local conditions has a negative impact on the multiplier. As labor requirements rise relative to other inputs to the production process, the labor content of those inputs will make a proportionally smaller contribution to the sector’s labor multiplier. This effect is partly evident in comparing the country multipliers listed in Table 6, with their labor shares. Put differently, lower worker efficiency leads to lower labor impacts.

We estimated a labor share of 25% of the total value of finished products based on data elicited from our interviews. We adjusted responses from cut-and-make manufacturers to reflect the value of materials in their production, which they do not account for. Responses from full package manufacturers indicated that materials costs were approximately 60% of total expenditures. Adjusting the cut-and-make labor shares for their costs of materials significantly narrowed the percentage of value added from a maximum of 80% to a maximum of 30%.

Weighting the responses by the scale of production gave us a value of 25% of total expenses dedicated to labor.

The next adjustment we made was for trade. Trade has a strong influence on labor impact estimates because it dictates how much of suppliers’ labor is eligible to be counted toward the jobs impact. As the domestic content of a sector’s supplies decreases, so do its domestic labor impacts. This is particularly true in Haiti—apparel manufacturers import a large fraction of their...
supplies. For example, textiles are a large fraction of the apparel sector’s material costs and have a labor-intensive production process, but nearly all textiles for apparel manufacturing in Haiti are imported. We used trade data from the Massachusetts Institute of Technology (Simoes & Hidalgo, 2011) and sector demands from GTAP (proportional to Haiti’s GDP) to estimate import shares by sector.

Drawing on our survey data, we adjusted the consumption profile of households to reflect the spending patterns of the apparel workers we interviewed. These adjustments allowed us to better reflect the pattern of apparel workers’ spending in the Haitian economy and how these expenditures drive employment to generate induced job impacts. These adjustments are slight and only influenced the induced impact estimate.

The final adjustment we made was to set the impact estimate relative to “direct” factory labor; i.e., workers engaged first-hand in the manufacturing process as opposed to those in supervisory or administrative roles. To make this adjustment we divided the impact estimate by the share of production labor.

6.2 Results

Table 18 provides the labor impact estimates for Haiti based on the initial regional estimate revised to reflect the local conditions. The final impact estimate for Haiti is 1.28 for indirect and 1.61 for both indirect and induced impacts. This estimate reflects all adjustments described above—our baseline case estimate. We provide other estimates based on alternate inputs below.

Table 18 also shows the impact of the cost adjustment on the estimate for the Caribbean as a whole; the indirect estimate declines from 4.28 to 1.49. Comparing this value with that for Guatemala at 1.88 (Table 6), whose labor share is approximately 20% (relative to 7.6% for the Caribbean region), reveals the significant impact the labor share can have on the impact estimate. The indirect plus induced impact shows a comparable change from the cost adjustment, declining from 5.90 to 1.81.

<table>
<thead>
<tr>
<th>Table 18: Labor Impact Estimates and Multipliers for Haiti</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carribean</td>
</tr>
<tr>
<td>Adjusted for</td>
</tr>
<tr>
<td>Haiti Production costs only</td>
</tr>
<tr>
<td>Haiti import requirements only</td>
</tr>
<tr>
<td>Haiti production and imports</td>
</tr>
<tr>
<td>Haiti direct labor impact</td>
</tr>
<tr>
<td>Implied employment impacts</td>
</tr>
<tr>
<td>Apparel sector employment</td>
</tr>
<tr>
<td>Employment impacts</td>
</tr>
<tr>
<td>Total employment related to the apparel industry: 65,892 jobs</td>
</tr>
</tbody>
</table>

Notes: Production and import adjustments are applied independently first, then together for the final Haiti estimate.
Table 18 also shows how the impact estimate for the Caribbean changes by accounting for Haitian import requirements. The decline in this estimate is slightly larger than that for local cost structures: from 4.28 to 1.54 for indirect and 5.90 to 1.94 for induced and indirect. However, if, for example, apparel manufacturers sourced 50% of their textiles domestically, the adjusted multipliers would be 2.7 indirect and 3.42 indirect plus induced. This highlights the importance of domestic production in the apparel value chain. As more components of the value chain begin producing in Haiti, the employment impacts of the sector will grow.

When accounting for both production costs and import requirements, the impact estimates fall to 1.15 indirect and 1.45 induced. These impact estimates are for total labor, meaning they indicate the total labor impact of any apparel employee, not just a production worker. Based on our interviews with apparel manufacturers, the direct share of labor averaged roughly 90%.

Adjusting for this share increases the impact estimate to the final 1.28 indirect and 1.61 induced. Figure 6 illustrates how these adjustments change the labor impact estimate and how our estimate for Haiti compares to the median value of for the top 20 exporters (see Table 8). This also shows that the Caribbean region’s impact estimate is quite high relative to the median for all exporters.

![Figure 6: Labor Impacts for Haiti and Top 20 Apparel Exporting Countries](image)

We next consider altering some of our key inputs based on information we gathered from our interviews with Haitian apparel manufacturers and their suppliers. Table 19 summarizes the inputs we examined, how we changed their values, and the impact it had on our estimates.
Table 19: Alternate Impact Estimate Scenarios

<table>
<thead>
<tr>
<th>Assumption</th>
<th>Value change</th>
<th>Impact on Multiplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor share of production value</td>
<td>20% → 30%</td>
<td>Negative</td>
</tr>
<tr>
<td>Import share of textiles</td>
<td>100% → 90%</td>
<td>Positive</td>
</tr>
<tr>
<td>Production worker share of employment</td>
<td>90% → 80%</td>
<td>Positive</td>
</tr>
</tbody>
</table>

In our first alternate scenario, we considered the impact of a larger labor share from the top of our range (30%). Next, to examine the potential influence of domestic production of textiles and similar products that are beginning to take hold in Haiti, we decreased the textiles import share to 90%. Finally, the full package apparel manufacturers we interviewed had a larger fraction of their total labor working outside of production. For this assumption, we considered the impact of only 80% production labor. Table 20 summarizes the impact of the different assumptions.

Table 20: Alternate Labor Impact Estimates for the Apparel Sector in Haiti

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Direct</th>
<th>Indirect</th>
<th>Indirect + Induced</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline results</td>
<td>1.00</td>
<td>0.28</td>
<td>0.61</td>
<td>1.61</td>
</tr>
<tr>
<td></td>
<td>41,000</td>
<td>11,456</td>
<td>24,892</td>
<td>65,892</td>
</tr>
<tr>
<td>Total labor share</td>
<td>1.00</td>
<td>0.24</td>
<td>0.56</td>
<td>1.56</td>
</tr>
<tr>
<td></td>
<td>41,000</td>
<td>9,953</td>
<td>22,896</td>
<td>63,896</td>
</tr>
<tr>
<td>Supply import share</td>
<td>1.00</td>
<td>0.33</td>
<td>0.67</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>41,000</td>
<td>13,509</td>
<td>27,506</td>
<td>68,506</td>
</tr>
<tr>
<td>Production labor share</td>
<td>1.00</td>
<td>0.44</td>
<td>0.81</td>
<td>1.81</td>
</tr>
<tr>
<td></td>
<td>41,000</td>
<td>18,013</td>
<td>33,129</td>
<td>74,129</td>
</tr>
<tr>
<td>All assumptions</td>
<td>1.00</td>
<td>0.44</td>
<td>0.81</td>
<td>1.81</td>
</tr>
<tr>
<td></td>
<td>41,000</td>
<td>18,103</td>
<td>33,155</td>
<td>74,155</td>
</tr>
</tbody>
</table>

The Haitian apparel sector directly employs approximately 41,000 people. According to our baseline impact estimates, this level of employment suggests that 11,456 additional jobs occur elsewhere in the apparel value chain within Haiti. A larger number of jobs, 13,437, are active in supplying goods and services to apparel sector employees. The change in the labor share input decreased indirect and induced impacts only slightly. The other two assumptions increased indirect and induced estimates by 20%–60% for indirect and 5%–10% for induced alone. The combined impact of all three estimates was comparable to the production labor share alone, evidence of its strong influence and the offsetting impacts of the labor and import adjustments. Figure 7 illustrates the impact the different inputs have on estimates of indirect and induced jobs.

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12 Job counts may differ for similar multipliers due to rounding.
Overall, the results indicate significant job impacts from production work in the apparel sector. The impacts we estimated were broadly consistent with the range of impact estimates for other apparel producing countries, if somewhat lower (Table 8). As apparel manufacturing continues to grow, and more of its value chain is able to produce domestically, the employment impacts for Haiti will scale. The sensitivities we conducted highlight some of the key factors in how Haiti’s apparel sector influences the broader Haitian economy. As worker productivity and domestic production increase, so too will the labor impacts of apparel manufacturing on the Haitian economy.
7. CONCLUSION

7.1 Key results

Haiti’s apparel sector is experiencing renewed expansion after a significant contraction in the 1990s, which lasted into the 2000s. The past few years have brought double-digit growth for the Haitian apparel sector, with some tapering in recent quarters. This growth has been coupled with expanded manufacturing capacity as new apparel manufacturing firms began operations in Haiti, domestic firms transitioned their operations from cut-and-make to full package, and domestic suppliers started operating. All three of these trends bode well for future growth in the apparel sector and in its broader employment impacts. With the sector on the rise again, this analysis offers key insights into what impact apparel manufacturing may have on employment and livelihoods in Haiti.

7.1.1 Apparel workers

Apparel workers provided strong indications that work in the apparel sector has had a positive impact on their households. Nearly 40% of employees surveyed had no work before taking their apparel job and even those who did were earning significantly more on average working in the apparel sector than beforehand. Work in the apparel sector offers steadier pay and access to social benefits, such as health care and retirement insurance. Of the 1,200 workers surveyed, more than 1,100 (93%) identified the work as important or very important to their household. The majority of respondents reported being the main earner for their households and expected to stay at their job for two years or more.

These are all positive indications that work in the apparel sector is providing vital economic opportunity for Haitian households on the whole. There are some important limitations to that progress worth noting. A minority (20%) reported earning less than at their previous job. Approximately one-third of respondents reported average net wages less than the piece rate minimum of 320 HTG per day (i.e. 340 HTG/day net of retirement insurance deductions). Lower wages can limit the extent of induced employment impacts. Conversely, two-thirds earned at or above the piece rate, indicating that the quotas, a common target of criticism, are certainly achievable, especially in CODEVI where 90% of respondents reported earning net wages at or above the minimum. Last, wage increases are limited after one year of work in the sector, suggesting that there may be limited opportunity for advancement.

Incomes support critical economic opportunities for Haitian households. For example, two thirds of respondents with children indicated spending more on their children’s education since taking the job. Additionally, a minority of respondents reported investing in land and livestock ownership, a valuable source of secondary income. Many apparel workers also have access to basic healthcare, which the majority would not have in previous or alternative jobs. This can help mitigate economic hardship from unexpected health events.

Overall, apparel work does appear to offer a strong and positive impact on Haitian livelihoods. Respondents reported that they placed great importance on the work and earned more on average, enabling them to make important investments in their futures. The positive opportunities provided by the work are evident to apparel workers. More than three quarters of respondents reported the economic condition of their household as better or much better than before taking their apparel job.
7.1.2 Employment impacts

For every job in the apparel sector, approximately 0.61 jobs are active elsewhere in the Haitian economy supporting apparel production or the expenditure of apparel wages. Therefore, the 41,000 jobs in the apparel sector as of 2016 supported 24,892 jobs elsewhere in Haiti. As the Haitian apparel sector transitions to more full-package operations it will be able to support a wider array of production, provide more “middle class” jobs, expand productivity and domestic production by apparel manufacturing suppliers, and increase the employment impacts of the sector. Facilitating this transition to greater productive capacity is likely to move employment impacts from the Haitian apparel sector closer to that of its peer group, e.g., 1.5–2 jobs for every one apparel job instead of 0.6–0.8, which means that between 60,000 and 80,000 indirect and induced jobs associated with Haiti’s apparel sector.

The manufacturers we interviewed identified uncertainty in wage policies and local governance in general as important constraints to their future expansion. Interviewees also frequently mentioned poor physical infrastructure and capital access as significant costs of doing business. Several interviewees and other industry stakeholders stressed the complexity of moving from cut-and-make to full-package operations. Therefore, governmental and nongovernmental organizations may find opportunities to promote apparel sector growth in Haiti through facilitating infrastructure financing, capital access for apparel firms, or technical consulting on cut-and-make to full-package transitions.

7.2 Limitations

Job activity associated with production in a given sector offers real economic benefits, but the benefits enumerated in this study do not net out what might have happened absent apparel production. A net economic picture requires considering the benefits we identified relative to alternative economic outcomes and employment opportunities. In areas with little prior economic activity, such as CODEVI or PIC, these alternatives are scarce, suggesting the economic benefits we identified may be close to their net value.

First, job benefits delivered supported by apparel work are not necessarily uniquely caused by apparel production. Indirect and induced employment could come from expansion in other viable economic sectors as well. If Haiti expends scarce public resources (e.g., tax relief and trade negotiations) to support apparel sector growth, Haitian public officials must bear in mind the opportunity cost of forgoing promotion of other viable industries. One should not construe the positive employment impacts of apparel production we have outlined here as development advice. We have not considered the relative immediate impacts of any other sectors in which Haiti might look to invest or the long-term economic growth and development consequences of apparel or any other sectors.

Second, one must consider employment opportunities that were available before apparel sector expansion to know how individuals’ economic well-being may have improved. In areas where employment opportunities are scarce, benefits will be greater than areas with more active and diverse economies offering more employment opportunities. Particularly in diverse economies, the numerous and often informal employment options can be difficult to evaluate.

Impact analyses similar to what we conducted in this study do not typically consider counterfactual scenarios. Factoring counterfactual outcomes will attenuate the economic impact of apparel production to some extent. Still, the impact is likely a significant and positive
contributor to the Haitian economy when one considers that nearly two out of five respondents had no income before taking their factory job and, those who did have prior work reported a significant pay increase upon taking their apparel job.

The employment impacts calculated in this report rely on the assumption of fixed proportions in production throughout the economy. That is, impact analyses of this type assume that for a unit of output, the same number of inputs will be required in future production. Changes in prices, producer experience, technology, and government policies can all influence the relationships observed in our data, thereby altering our impact estimates. For example, as less efficient firms exit the apparel market and more-productive firms expand, our impact estimate would be understated.

### 7.3 Recommendations for future study

The structure, composition, and scale of the Haitian apparel industry is changing. Firm costs are shifting, larger and more sophisticated firms are expanding, and apparel output as a whole is growing. In just a few years the industry could look significantly different, warranting a follow-on study of how the employment impacts have changed, what factors contributed to different aspects of change in the industry, or how the broader economy has responded to the apparel sector.

New apparel manufacturing sites in Haiti are currently in development, some in relatively rural areas. These sites offer a prime opportunity for comparing economic outcomes before and after the introduction of apparel manufacturing. Such a study would offer more compelling evidence of the net economic benefits of apparel production by considering economic alternatives both before apparel jobs being available and after production begins among those who do not seek work in the factory.

The methods here are not specific to the apparel sector. Several other sectors in Haiti, such as agriculture and construction, are receiving public interest as potential avenues for job growth. One could generalize the methods used in this study to analyze other sectors, which could independently substantiate the economic benefits offered by other sectors, as was done here for apparel, and provide a point of comparison for the benefits of apparel work. Likewise, the methods could be adapted to other development settings.
8. REFERENCES


———. (2012c). Socio-Economic impact of IFC financing in Jordan: An assessment of


APPENDIX A: STRUCTURED INTERVIEWS

A.1. Apparel Manufacturers

General Production:
1. How long have you been in the garment industry? How long has your current company been in business?
2. What type of production do you do (e.g., cut and make, full package), and how has this changed since you began operations?
3. What types of garments does your company produce?
4. Approximately how many units does your company produce in a typical week?
5. What are the three biggest threats to the viability of your business?
6. If the Haitian government were to implement one policy change that would directly affect your business, what would you suggest?
7. If you could change one thing about how your suppliers operate (except lower prices), what would it be?

Capital:
8. Have you ever considered investing in any kind of labor-saving equipment? At what point would you be likely to do so?

Labor:
9. Does your number of workers fluctuate month-to-month or seasonally? If so, how?
10. How much spare capacity do you have (i.e., how much more could you produce before hiring another worker)?
11. What is your biweekly payroll for workers?
12. What is your monthly salary expense for staff, such as office personnel and supervisors?

Support Services:
13. Please help us complete Table A-22 on the last page. We would like to identify Haitian firms whose business relies on your patronage (e.g., electric production, water treatment, facility rent, other material supplies, employee training, and professional services such as accounting).

What additions/deletions would you make from the supply chain map in Figure 1 (below)? What companies do you contract with for materials or services?

Historical Operations
Understanding trends in expenses and in labor requirements will allow us to develop the necessary understanding of your labor requirements. Please provide your best approximation.

What has been your percentage growth for 2014 and 2015, and what are your estimates for 2016 through 2018?

Future Operations
Please provide your expectations for 2017 and 2018. Again, your best approximation will suffice.

1. How do you expect your overall production levels and/or capacity to change, if at all?
2. How do you expect your mix of workers, staff, and managers to change? In other words, would the percentage of your employees who are staff (e.g., supervisors, office personnel) change?
3. Do you expect to produce the same products in the same way?
4. Do you expect any other production costs to change? If so, how?

Hypothetical Scenarios
The preceding questions are essential. The following questions are designed to understand how your labor requirements would change under different scenarios.

5. **Hypothetical 1:** Consider receiving an order from an existing customer for 25% more volume than you are currently producing. Also assume that you are facing no financial or capital constraints when changing your operations.
   a. How many more employees would you hire in what positions?
   b. Would any other costs change by less or more than 25%?
   c. Facing your current financial and capital constraints, what would be the biggest impediment to filling such an order? Second biggest?

6. **Hypothetical 2:** Consider receiving an order for 100% more volume than you are currently producing. Also assume that you are facing no financial or capital constraints when changing your operations.
   a. How many more employees would you hire?
   b. Would costs would change by less or more than 100%?
   c. Facing your current financial and capital constraints, what would be the biggest impediment to filling such an order? Second biggest?

7. **Hypothetical 3:** Consider an offer to double the amount of financing available to you. How would your operations change? Specifically,
   a. Would you produce the same products in the same way, just more of them?
   b. Would any other costs change by less or more than double?
   c. How many more employees would you hire and in what positions?
### Table A-23: Manufacturers Interview Guide, Value-Chain Diagram

<table>
<thead>
<tr>
<th>Apparel Value Chain</th>
<th>Business Type</th>
<th>Main Operations</th>
<th>Local Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Materials Suppliers</td>
<td>Supply (&amp; manufacture) fabrics (cotton), threads, trims, accessories (elastics, buttons), packaging (polybags, cartons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy &amp; Capital Providers</td>
<td>Factory shell providers, maintenance &amp; mechanical services, energy providers (generators &amp; diesel fuel), water &amp; sanitation services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Support Services</td>
<td>Security, accounting, legal, IT, brokering, finance, employee/cultural training, transportation (employees &amp; products)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut &amp; Make</td>
<td>Vendor receives fabric and other raw materials from buyer/supplier, cuts to size (or receives pre-cut) and stitches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source, Cut, Make, Finish</td>
<td>Vendor sources raw materials, receives patterns from buyer/supplier, cuts to size, stitches, trims/embroiders/prints, packages, and exports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Package</td>
<td>Vendor sources raw materials, designs product, makes patterns, cuts to size, stitches, trims/embroiders/prints, packages, and exports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand-Alone Finishing Services</td>
<td>Embroidery, screen printing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Support Services</td>
<td>Product transportation, quality control, inventory management, accounting, legal, IT, brokering, finance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A.2. Suppliers

Operations:
1. How long have you been operating?
2. What type of product/service does your business provide for apparel manufacturing firms?
3. Which local apparel manufacturing firms do you do business with?
   a. How many of them are full package vs. cut-and-make operations?
4. What are your approximate annual sales?
5. What fraction of your sales are to apparel manufacturing firms?
6. Who are your main competitors? Are any of your competitors based internationally?
7. What level of growth in sales are you anticipating over the next three years?
   a. How much of this growth will be from your apparel sector customers?

What fraction of your expenses go to employee wages?

Hypothetical Scenarios:
8. Hypothetical 1: If apparel manufacturing firms’ demand for your products increased by 10%,
   a. Would you be able to meet that demand?
   b. How many people would you hire to fulfill that demand? Would you need to pay any overtime?
   c. Would you still be able to meet demand for your non-apparel customers?
   d. Practically speaking, what would be your most significant constraint(s) in meeting the new demand?
9. Hypothetical 2: Same questions, now consider a doubling of apparel customer demand.
10. Hypothetical 3: If the apparel sector stopped producing altogether, what would happen to your business?
APPENDIX B: SURVEY QUESTIONS

B.1. Apparel Workers

1. “Hello my name is ______. I am conducting a survey for the Local Enterprise Value Chain Enhancement Project (LEVE), sponsored but the US Agency for International Development (USAID). We are conducting a survey to understand better what it is like to work in the apparel industry. Your responses will be kept anonymous. Are you interested in participating?”
2. What is your name?
3. Sex
4. What department were you born in?
5. Do you currently work in an apparel factory?
6. Have you worked in an apparel factory in the past 6 months?
7. Do you expect to be rehired at the factory?
8. How many years have you worked in the apparel industry?
9. How many times have you been laid off?
10. Longest time you've ever been laid off?
11. Shortest time you've ever been laid off?
12. At what age did you first come to Port-au-Prince to live?
13. How much time have you lived your neighborhood?
14. Did you move here to take this job?
15. How many living children do you have?
16. What class did you finish in school?
17. What is your marital status?
18. You live currently with your spouse?
19. Who is the head of the house?
20. How many people in the house?
21. How many are male?
22. How many are female?
23. The youngest, what is her age in years (baby less than 1 year = 0)?
24. The oldest, what is his age in years?
25. How many days do you work per week on average?
26. How many hours per day do you work?
27. How much time do they give you for lunch?
28. Do you get time for other breaks?
29. Does the factory give you an annual vacation?
30. How many weeks of paid leave do you get per year?
31. After that, how many weeks per year are you not working in the factory (with no pay)?
32. How important is your income to the household?
33. What would be the impact on the household if you lost your job?
34. How many other people in the house earn income?
35. How many are over 18 years of age or older?
36. How many are 17 years of age or younger?
37. Who earns the most money for the house?
38. What work does he/she do?
39. What is the name of the factory where you are working?
40. How much time do you have working in [name of factory]?
41. How many factories have you worked in?
42. What do you currently do in [name of factory]?
43. Before you went to work in a factory, what did you do to earn money?
44. How much did you earn in an average day?
45. Where you live now, how long does it take to get to the factory?
46. What transport do you usually take?
47. If you went on public transportation, how much would you have to pay go to the factory (one way)?
48. How much do you spend on transportation in a given week?
49. Did anyone in your household enroll in school after you took your job as a result of the new income your job provided?
50. How many people?
51. How much does tuition cost only for these people?
52. How much do you spend on tuition in total for the household each year?
53. Is there something that you bought since you started work at the factory that you could not have afforded before?
54. Is there something not mentioned in the list that you bought since you started work at the factory that you did own before?
55. Would you say that since you started working in the factory the economic situation of household is:
   a. Worse
   b. Same
   c. Better
   d. Much better
56. If you stayed at the level you are presently at in the factory now—same salary and same position—how much longer do you think you would continue to work there?
57. If you lost your job, would anyone else in your household leave school to start working?
58. If you lost your job at the factory tomorrow, what work would you do?
59. Do you have medical insurance of any kind?
60. Who provides the insurance?
61. Approximately how many times per year do you or others in your household see a doctor or clinician?
62. Approximately how many times per year do you or others in your household buy medicine for something worse than a headache?
63. Approximately how much money have you spent on doctor visits and medicine for people in your household over the past year?
64. Have you used credit groups with coworkers at the factory?
65. Have you ever lost money participating in a credit group?
66. How much have you lost in the past year?
67. In the past year, which of the following have you borrowed money from (check all that apply)?
   a. friend
   b. family
   c. neighbor
   d. patron
68. The last time you borrowed money, how much was it?
69. Did you pay interest?
70. How much?
71. How much was the total you gave them back?
72. What is the most important thing you did with the money?
73. Where you live, do you
   a. Rent your house
   b. Own your house
   c. Other
74. How much do you pay for the house?
75. Every how often do you pay?
76. How much do you pay for the land?
77. Every how often do you pay?
78. Do you pay anyone to do work around the house?
79. What type of work do they do?
80. Approximately how much do you pay them per week?
81. What is the person’s age?
82. Would you still pay them if you did not have your factory job?
83. About how much do you spend per week on average on:
   a. Food from street vendors or factory cafeteria
   b. Telephone and internet access
   c. Food you prepare at home
   d. Childcare
   e. Savings
   f. Energy (gas, electricity, wood for burning)
84. Before you started working in the factory, about how much did you spend average per week on:
   a. Food from street vendors or factory cafeteria
   b. Telephone and internet access
   c. Food you prepare at home
   d. Childcare
   e. Savings
   f. Energy (gas, electricity, wood for burning)
85. Can you give me a telephone number?

B.2. Vendors (non-transportation)

1. “Hello my name is ______. I am conducting a survey for the Local Enterprise Value Chain Enhancement Project (LEVE), sponsored by the US Agency for International Development (USAID). We are conducting a survey to understand better what it is like to work in the apparel industry. Your responses will be kept anonymous. Are you interested in participating?”
2. Do you own this operation (either in part or wholly)?
3. Do you know business information such as how the supplies are purchased, how much they cost, how many people it takes to run the business?
4. What is your name?
5. Sex
6. Are you originally from this area?
7. What department were you born in?
8. At what age did you first come to Port-au-Prince to live? (for not born in PAP)
9. Age now?
10. How many living children do you have?
11. What class did you finish in school?
12. In what year did you start the business?
13. *If they started business this year:* In what month did you start the business?
14. What do you sell?
15. How many days per week do you sell/work?
16. More or less how many customers do you serve per day on average?
17. More or less what fraction of your customers are workers in the park?
18. What is your average daily sales revenue?
19. What is the most you’ve ever sold in a day (sales revenue in gourdes)?
20. More or less how many customers did you serve that day?
21. What is the least you’ve ever sold in a full day of working here (sales revenue in gourdes)?
22. More or less how many customers did you serve that day?
23. How many times per week do you have too many customers such that you cannot serve all of them?
24. Why do you sell here in the Industrial park?
25. Do you sell anywhere else?
26. What are your daily costs of your operation? *(for food vendors)*
27. What is typically the total value of your inventory? *(for other vendors)*
28. How much do you have to pay for access to sell in/near the industrial park?
29. How much do you spend on transportation to run your business?
30. How many people do you employ other than yourself?
31. How many hours do they work per day on average?
32. Do you pay any of those people?
33. How many people do you pay to help you?
34. How do you pay them?
35. More or less how much do you pay them per day?
36. Have you ever hired someone in response to an increase in customers?
37. How many customers did you have before the increase?
38. Do you have other income generating activities?
39. What activities?
40. What fraction of your income comes from this business?
41. Do you think in the approaching year that your business will:
   a. Increase a lot
   b. Increase
   c. Stay the same
   d. Decrease
e. Decrease a lot  
  f. Other  
  g. Don’t Know  
42. Do you think in the approaching 2 years that that your business will:  
  a. Increase a lot  
  b. Increase  
  c. Stay the same  
  d. Decrease  
  e. Decrease a lot  
  f. Other  
  g. Don’t Know  
43. Do you think in the approaching 3 years that that your business will,  
  a. Increase a lot  
  b. Increase  
  c. Stay the same  
  d. Decrease  
  e. Decrease a lot  
  f. Other  
  g. Don’t Know  
44. If you did not sell here, where would you sell?  
45. If you sold at another place, would you have,  
  a. Many more people  
  b. More people  
  c. Same number of people  
  d. Less people  
  e. Much less people  
46. How would your costs change (e.g., transportation)?  
47. Do you know approximately how many people work in the [industrial park]?  
48. More or less how many?  
49. Have you noticed a change in the number of people working in [industrial park] in the past 3 years (or since you started)?  
50. How much of a change?  
  a. Increased a lot  
  b. Increased  
  c. Stayed the same  
  d. Decreased  
  e. Decreased a lot  
  f. Other  
51. Have you noticed a change in the number of vendors selling similar products in [industrial park] over the past 3 years (or since you started)?  
52. If so, how much?  
  a. Increased a lot  
  b. Increased  
  c. Stayed the same  
  d. Decreased  
  e. Decreased a lot
f. Other

B.3. Vendors (transportation)

1. “Hello my name is ______. I am conducting a survey for the Local Enterprise Value Chain Enhancement Project (LEVE), sponsored by the US Agency for International Development (USAID). We are conducting a survey to understand better what it is like to work in the apparel industry. Your responses will be kept anonymous. Are you interested in participating?”
2. What type of transport vehicle?
3. Do you own the [transport type]?
4. Do you know business information such as how the supplies are purchased, how much they cost, how many people it takes to run the business?
5. What is your name?
6. Sex
7. Age now?
8. Are you originally from this area?
9. What department were you born in?
10. At what age did you first come to Port-au-Prince to live?
11. How many living children do you have?
12. What class did you finish in school?
13. In what year did you working as a driving in the park route?
14. How many days per week do you sell/work?
15. How many customers do you serve per day on average?
16. What percentage of your customers are workers from [industrial park]?
17. What proportion of your transport route is to bring people close to the park?
18. If the park the park shut down, would you still work as a driver?
19. Where would you work?
20. What is your average daily sales revenue?
21. How does the owner of the [transport type] pay you?
   a. Pay 2: How much is it daily?
   b. Pay 3: How much is it daily?
   c. Pay 4: How much is it?
22. What is the most you’ve ever sold in a day (sales revenue in gourdes)?
23. How many customers did you serve that day?
24. What is the least you’ve ever sold in a full day of working here (sales revenue in gourdes)?
25. How many customers did you serve that day?
26. How many times per week do you have too many customers such that you cannot serve all of them?
27. Why do you work here in the Industrial park?
28. Do you work anywhere else/another route?
29. What are your daily costs of fuel?
30. Do you have to pay anyone to be able to work this route?
31. Who do you pay?
32. How much do you pay?
33. Do you have to pay taxes to operate your business?
34. How much do you spend in taxes for your business?
35. How many people do you employ other than yourself?
36. How many hours do they work per day on average?
37. Do you pay any of those people?
38. How many people do you pay to help you?
39. How do you pay them?
40. More or less how much do you pay them per day?
41. Have you ever hired someone in response to an increase in customers?
42. How many customers did you have before the increase?
43. How many customers after the increase?
44. Do you have other income generating activities?
45. What activities?
46. What fraction of your income comes from this business?
47. Do you think in the approaching year that your business will, increase a lot, increase, stay the same, decrease, decrease a lot?
48. Do you think in the approaching 2 years that that your business will, increase a lot, increase, stay the same, decrease, decrease a lot?
49. Do you think in the approaching 3 years that that your business will, increase a lot, increase, stay the same, decrease, decrease a lot?
50. If you did not engage in transport here, where would you do it?
51. If you sold at another place, would you have, many more people, more people, same number of people, less people, much less people.
52. Do you know approximately how many people work in the park?
53. Have you noticed a change in the number of people working in the park in the past 3 years (or since you started)?
54. How much of a change?
55. Have you noticed a change in the number of vendors selling similar products in [industrial park] over the past 3 years (or since you started)?
56. If so, how much?
57. Can you give me a telephone number?
APPENDIX C: SYNOPSIS OF SURVEY FIRM’S REPORT

C.1. Focus Groups

Socio-Dig conducted six focus groups, two in each of the three parks studied. The vast majority of focus group respondents were former apparel employees. This was a result of participant timing and availability to join the focus groups. Despite the potential for bias in the information collected, the authors view former employees as a group able to provide a potentially important perspective on work in the apparel sector.

Focus group organizers gave participants freedom to discuss a range of topics. The group discussions gravitated toward a wide variety of discontents held with apparel work, some of which speak to the scope and intent of our work and others not. Still, participants offered near unanimous appreciation for the opportunity to work and the majority affirmed that their frustrations would not keep them from returning to apparel work if the opportunity arose.

Participants expressed confusion with respect to their status and benefits in the public retirement and health insurance programs (ONA and OFATMA). Participants were unclear how to access their benefits and skeptical of the cost and quality of factory clinics.

Participants indicated that there was little opportunity for promotion. A lack of perceived promotion opportunity among a people who have been laid off may be sensible, but survey respondents’ reported income and tenure showed that apparel workers earn little compensation for additional years of experience. This likely stems from a fixed wage rate and seamsters/seamstresses maximizing their output early on. As firms continue to migrate toward full-package production and require more managerial and administrative roles, firms may find internal promotion as a means to improve recruitment and retention.

Participants expressed concerns with the quota system. Not all work on the factory floor can count toward quota. To the extent employees need to perform work not countable to their quota, their ability to meet that quota to earn the minimum piece-rate wage may be limited. These concerns were corroborated in part by our survey respondents, one in three of whom indicated that they may have been earning below the minimum, and therefore not making their quota. The ability of workers to consistently earn a pre-determined wage for consistent work is an important part of how their earnings will influence the economy. Reduced pay means lower induced economic impacts, and inconsistent pay may change how incomes are spent.

Focus group participants offered valuable qualitative feedback to help frame some of the quantitative information gathered in the surveys. Health and compensation were primary points of frustration for participants. Some of these challenges are unique to the apparel sector and suggest areas where manufacturers can improve job quality. Some of these challenges are quite general to Haiti, which for most is an exceptionally difficult place to earn a living. To that end, the economic value of the work was a clear benefit to both survey respondents and focus group participants.
C.2. Survey Methods

<table>
<thead>
<tr>
<th>Park</th>
<th>Transport</th>
<th>Vendor</th>
<th>Worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODEVI</td>
<td>10</td>
<td>20</td>
<td>401</td>
</tr>
<tr>
<td>PIC</td>
<td>5</td>
<td>20</td>
<td>399</td>
</tr>
<tr>
<td>PIM</td>
<td>10</td>
<td>31</td>
<td>406</td>
</tr>
</tbody>
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There were three surveys and 3 survey questionnaires: one for vendors (n = 71), one for transporters (n = 26) and one for workers (n = 1,207). The samples were divided approximately equally between the three industrial parks (PIM, CODEVI, and PIC). As PIC operates its own transportation, no transporter survey was conducted there.

Following guidelines from RTI consultants, the primary consultant from Socio-Dig team translated the questionnaires into Haitian Kreyol and then programmed them into Open Data Kit data collection software platform for use on Samsung 7-inch Galaxy tablets.

RTI and LEVE consultants then reviewed the questionnaires in both English and Haitian Kreyol and returned them to the Socio-Dig consultant. The Socio-Dig Port-au-Prince survey team then further tested, developed and refined the questionnaires and gave them back to RTI and LEVE for final review and approval.

The final survey instrument had 341 questions that yielded approximately 200 variables. Survey Training took place the week of 10/10/2016 and the surveys took place between 10/18/2016 and 10/31/2016.

Each of the three parks were treated logistically as independent surveys. Each team was composed of 8 Socio-Dig surveyors and one supervisor. Five of those surveyors who participated in CODEVI Survey also participated in PIC. All but 4 of the surveyors have at least 2 years’ experience working with Socio-Dig.

Surveyors conducted the surveys before work (6–7 a.m.), at lunch break (typically 30 minutes sometime between 10 a.m. and 2 p.m. Caracol park security did not allow surveyors access to the park. This prevented surveyors from interviewing park vendors and increased the time required to collect the desired sample of worker surveys.