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Globalization and the Gender Earnings Gap

Evidence from Sri Lanka and Cambodia

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Abstract

Disasters in Bangladesh and protests elsewhere have created an intense debate about the value, particularly to women, of apparel employment in developing countries. This paper focuses on how the forces of globalization, specifically the Multi-Fibre Arrangement (MFA), have affected women's wages in the apparel sector in developing countries. The paper uses household and labor force surveys from Cambodia and Sri Lanka to estimate both apparel wage premiums relative to other industries and the male-female wage gap before and after the end of the MFA. The approach builds on new models that apply traditional trade theory (e.g., the Heckscher-Ohlin and Stolper-Samuelson theorems) to analyze the effect of globalization on gender-based earnings. The authors find large positive wage premiums and a closing of the male-female wage gap during the MFA period, but smaller premiums and a widening wage gap after the end of the MFA. The results suggest that the benefits of apparel exports for women in developing countries remain significant post-MFA. They also model an approach for studying the effects of globalization that differentiates males and females as separate factors. This may be a fruitful alternative to discrimination models or those that analyze the effects of globalization on women in terms of skill. Further research is necessary to identify the potential development effects of post-MFA apparel employment and to thoroughly compare the benefits documented in this paper with the costs that may come with apparel jobs.

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1. Introduction

The idea that incorporating women into the formal workforce contributes to economic development is now well established.[1] The effects of globalization on women's employment and earnings, however, remain debated. The male-female wage gap changes over time but the forces that drive the changes in the wage gap are not well understood. Globalization is considered to be one of the important drivers of employment and wages in developing countries. Papers that focus on tariff reductions, such as Juhn et al. (2013, 2014) and Aguayo-Tellez (2010), find that tariff reductions favor women in both employment and consumption. Klein et al. (2010) find a similar result in Germany: increasing exports reduce gender wage inequality. Saurè and Zoabi (2014), however, find that an increase in the output price of the female-intensive sector raises both male and female wages (so that the relative wage does not change in the short run), but, as males reallocate towards the female-intensive sector, the gender gap widens.

These papers build on previous work that was equally contentious[2] and reflect the beginning of a shift in the way the globalization-gender earnings relationships are analyzed. Early papers were based on discrimination models that predicted that globalization would increase competition, which would make discrimination less feasible. A new wave of models, however, has begun to apply traditional trade theory (e.g., the Heckscher-Ohlin and Stolper-Samuelson theorems) to analyze the effect of globalization on gender-based earnings. This new wave includes several common characteristics. First, males and females are treated as separate factors that are not necessarily differentiated by skill (e.g., Galor and Wiel 1996).[3] Second, studies in this new wave include output price changes, either directly or indirectly (through tariffs). Third, they differentiate industries by female intensity.

The goal of this paper is to describe how global price changes may affect women's wages in developing countries. Specifically, this descriptive paper contributes to this new wave of literature in three ways. First, it focuses on the apparel industry. In developing countries women often enter the formal sector though the apparel industry. Apparel is perhaps the most prominent labor-intensive and female-intensive globalized manufacturing sector. The disasters in Bangladesh apparel factories in 2012 and 2013[4] stimulated an intense debate around the value of apparel exports and employment in developing countries. In this debate, the costs of disasters, low wages, and poor working conditions are contrasted with the benefits of incorporating women into the formal labor force. Understanding how both the growth of apparel exports and major policy changes affect women is a critical element of the debate surrounding the apparel export model. Tremendous changes in the apparel sector over the decade from 2001 to 2010 have had significant implications for women in developing countries and, therefore, for development.

Second, we apply a simple model in which men and women are treated as different factors whose absolute and relative wages are driven by output price changes. Our simple model illustrates how the effects of changes in output prices are different in the short run and the long run, following the spirit of recent work (including Do et al. 2011). We extend these papers by differentiating the short run and long run. Adjustment costs are central in a new wave of trade models,5 and our simple theoretical model illustrates how the presence of short-run adjustment costs generates the prediction that a negative price shock to a specific sector would lead to a decrease in wages in that sector relative to other sectors in the short run. In the medium run, when factors are free to adjust, the model predicts a relative decrease of wages to a sector-specific factor (in our case, female workers) in the overall economy.

Third, we apply the model to two leading apparel-exporting countries: Sri Lanka and Cambodia. They provide excellent opportunities to compare the effects of changes in the apparel exporting sector on women. Both countries are likely to be considered "small" in the theoretic sense of having negligible effects on world prices. Thus, Cambodia and Sri Lanka are excellent cases that may illustrate the potential effects of the end of the MFA on female employment and the gender wage gap. As in many low-wage developing countries, apparel is the key manufacturing industry in Sri Lanka and Cambodia. In Sri Lanka the apparel sector employed 270,000 workers, or 13 percent of its industrial workforce in 2008.[6] In Cambodia, apparel employed around 325,000 workers or 30 percent of the country's total industrial workforce in 2008. Female workers dominate apparel sector employment in both countries, making up 70 percent and 83 percent of the apparel workforce in Sri Lanka and Cambodia respectively.[7]

Both Sri Lanka and Cambodia were significantly affected by the Multi-Fibre Arrangement (MFA), which from 1974 on was the major policy governing textile and apparel trade between industrialized and developing countries.[8] Cambodian and Sri Lankan exports grew remarkably during the MFA era. The end of the Multi-Fibre Arrangement on January 1, 2005 induced a dramatic redistribution of the allocation of global apparel production (Staritz 2011; Lopez Acevedo and Robertson 2012)[9] and a dramatic drop in global apparel prices (Harrigan and Barrows 2009).

Our approach, which is similar to the approach used by Acosta and Gasparini (2007), illustrates how these short-run and medium-run responses to price changes can be estimated with conventional empirical techniques from labor economics. We find that the apparel wage premium[10] rose when exports began to grow under the MFA but dropped (less than the initial increase) following the MFA phase-out in both Sri Lanka and Cambodia. Even though the

apparel wage premium improved in the following years, it never regained its pre-MFA phase-out levels. Furthermore, the male-female wage gap widened in the post-MFA period in both countries, as predicted.

The rest of the paper is structured as follows. Section two presents the simple theoretical model. Section three provides relevant context by describing export, price, and employment trends in Cambodia and Sri Lanka. Section four contains the empirical results. We conclude in section five.

2. Theoretic Foundation

Following Bernard et al. (2007) we present a simple Melitz-like model (Melitz 2003) in which firms differ by idiosyncratic technology and have two factors. Bernard et al. (2007) show that the introduction of firm-level heterogeneity may not affect the traditional Heckscher-Ohlin prediction of endowment-based trade determination and its effects (e.g., the Stolper-Samuelson relationship between output price changes and relative factor earnings). Juhn et al. (2014) apply the same logic with the two factors being defined by gender and use Mexican data to test some of the model's implications. Our model is more modest in presentation but is meant to capture the essential features of these models, with the goal of simply illustrating the different effects and empirical implications of short- and long-run price changes.

To begin, consider a model with two goods, *(a)* and *(b)*. At the firm level, goods are produced with three factors: males (*m)*, females (*f)*, and a single unit of capital (*k*). The fixed unit of capital that is necessary for production leads to diminishing returns to scale. The assumption of fixed capital reflects our focus on the short and medium run. We will define the medium run as the period in which labor is mobile between industries, and the short run as the period in which labor is not mobile. The capital represents an idiosyncratic amount of technology

represented by φ_i for firm *i.* The ex ante productivity parameter distribution is described by $g(\bar{\varphi},\sigma_k^2)$ and follows an exponential distribution.[11]

As in many trade models, we take the price of good *b* to be the numeraire. Production in industry $j \in (a,b)$ and firm *i* is the result of combining inputs according to a sector-specific production function, such as

$$y_{ij} = A(k(\varphi), m_j, f_j). \tag{1}$$

Without loss of generality, we assume that industry *a* is female intensive and, for simplicity, that the male-female employment ratio is not affected by the firm-specific technology parameter.[12]

$$\pi = Py - \frac{C(w^f, w^m, f, m)}{\varphi} - S_d. \tag{2}$$

The variables *P,* φ, w^f, and w^m uniquely define the profit-maximizing level of output and the combination of male and female employment. An increase in the output price, TFP, and the individual-specific productivity parameter increase factor demand at the firm level.

The firms incur a fixed cost to set up production, which we denote S_d. The difference between revenue and cost must be at least as large as S_d for the firm to stay in the market and produce. The result is a cutoff value for φ that is required for the firm to remain in the market. Firms opting to leave the market truncate the ex post φ distribution, which results in higher average productivity levels than in the ex ante distribution of firms.

A. Open Economy

Firms incur a fixed cost to export, which we denote S_x. To export, the firm must be a viable domestic producer. We make the usual assumption that international transportation costs follow an "iceberg" model, which suggests that $Q\tau$ goods must be exported for the quantity Q to arrive ($\tau > 1$). Firms in sector *a* that export, therefore, earn more than firms that produce only for the domestic market. The model can be simplified by assuming that the export price (P_x) is a fixed markup over the domestic sales price ($P_x = \tau P$). The model easily accommodates foreign tariffs in that τ = premium divided by tariff. Higher foreign tariffs reduce the premium and, eventually, reduce exports to zero. Assuming away corner solutions, firms will choose to export if

$$(3) \quad P_x y - \frac{C(w^m, w^f, m, f)}{\varphi} - S_d - S_x > Py - \frac{C(w^m, w^f, m, f)}{\varphi} - S_d > 0 .$$

The result of the additional fixed cost is that firms that export are more productive and larger than firms that do not export.

B. General Equilibrium

Sector *b* produces exclusively for the domestic market with homogeneous technology. Assume that the second sector is characterized by decreasing returns to scale. Factor demand in sector *b* can be characterized by

$$(4) \qquad y(m, f) = f(\kappa, \lambda, w^f, w^m),$$

in which the parameters κ and λ characterize the implied factor demand functions. Under the assumption of full employment, employment of males and females in the second sector is equal

to the total population of each worker type minus employment of each type in the first sector. Homogenous firms implies that we can represent aggregate relative factor demand with a single demand function, and that all workers of a given type receive the same labor income. The result is that wages of each factor are determined in the aggregate labor market and equalize across sectors.

It is important at this point to distinguish wages, which we have used so far, from income. In sector *b*, decreasing returns to scale implies that the total factor payments are less than the value of production. The remainder of the value of production is shared equally among the workers. In other words, income is the integral of the marginal revenue product from zero to total employment in sector *b* divided by total employment in sector *b.* Income is equal to the wage, which is determined competitively in the factor demand market, plus the "profits" that accrue to the firms from having the marginal revenue product being less than the total value generated by the workers.

The income in sector *b* effectively defines the reservation wage because sector *b* is the residual sector. If workers are perfectly mobile between sectors, income in sector *b* (rather than wages) becomes the minimum income in the heterogeneous sector. Workers have the chance to earn more in sector *a* because profits are (potentially) higher in heterogeneous firms. Thus workers either work in the sector *b* for income I_b or in the heterogeneous sector for at least I_b. Workers in the heterogeneous sector queue for jobs in the sense that sector *a* can hire as many workers as they want as long as they offer at least the reservation wage. Employment decisions at the firm level in the heterogeneous sector are based on y_b because profits are realized ex post. In the heterogeneous sector, firms sort into three categories based on the productivity draw: those that close, those that produce for the domestic market, and those that export. In this way, the

model generates both inter-industry and intra-industry trade, which is qualitatively similar to Bernard et al. (2007).

Income for workers in the heterogeneous sector is then

$$I_{ai} = I_b + \frac{\pi_i}{E_i}, \tag{5}$$

which is the income they could earn in the homogenous sector plus an equal share of the firm-specific profits (note that E is equal to the sum of m plus f). Note that equation (5) has important implications for empirical work. A positive price shock will affect income by increasing the second component directly. The positive price shock will only affect the first component to the extent that factor markets clear. The first component is the economy-wide return to being a given factor. The second component is effectively industry specific. Our estimation approach decomposes these two terms and compares how these individual components are related to product-level prices in Cambodia and Sri Lanka.

Changes in prices generate general-equilibrium dynamics that are consistent with the predictions of the Heckscher-Ohlin model in the following sense: when workers are perfectly mobile, an increase in the relative price of the female-intensive good will increase the demand for females throughout the economy and thus will close the male-female wage gap. In the short run, however, increases in prices will only increase wages in the sector experiencing a price increase. In other words, in the short-run, a sector-specific shock will increase the sector-specific wage and will not affect the equilibrium wage differential because the wages of both males and females would increase. Once factors are able to move, the sector-specific price shock will result in a differential increase in the demand for the factor intensively used in the sector that experienced the price increase. Our empirical strategy, therefore, is to decompose wages into the

sector-specific and factor-specific wages and compare those with changes in industry output prices.

3. The Apparel Sector in Cambodia and Sri Lanka

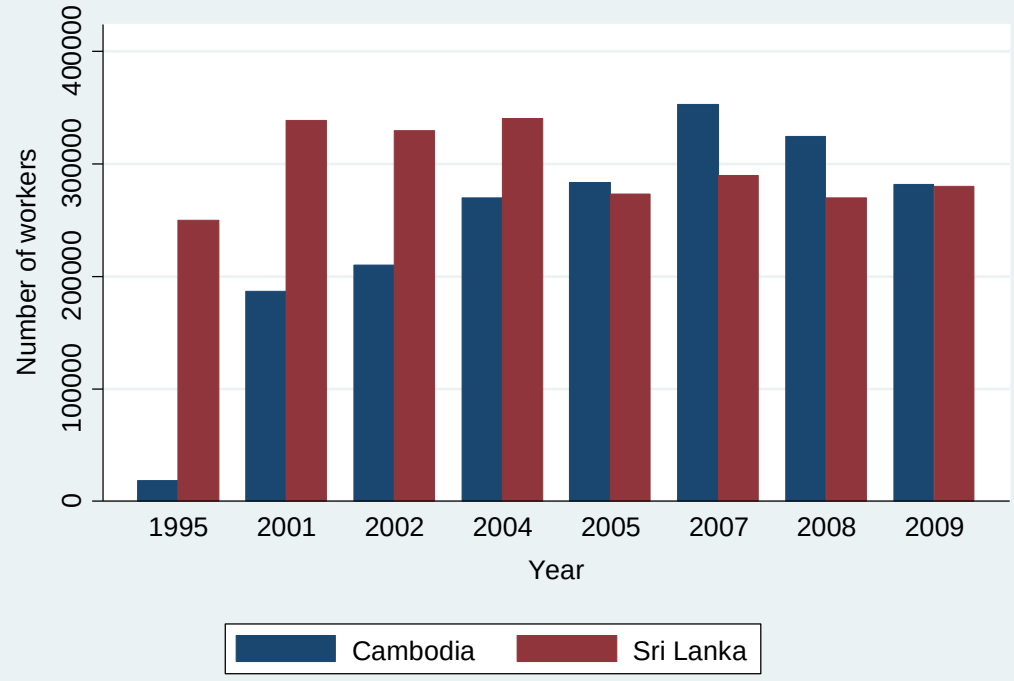
Sri Lanka has a long tradition in apparel. Before 1977 the Sri Lankan apparel sector was very small with a few locally owned firms working for the domestic market. Trade liberalization in 1977, however, immediately attracted foreign investors from East Asia to Sri Lanka. Over time, Sri Lankan owners started dominating the apparel sector; in 1999 approximately 80 to 85 percent of factories were locally owned (Kelegama and Wijayasiri 2004).

Due to its decades of political and civil unrest, Cambodia was a latecomer to the apparel industry. The modern Cambodian industry was established only in the mid-1990s by investors from Hong Kong SAR, China; Malaysia; Singapore; and Taiwan, China. In Cambodia, approximately 93 percent of apparel factories were foreign owned in 2009 (Natsuda, Goto, and Thoburn 2009). In this section, we provide context for our empirical results by examining the trends in exports, unit values, and the labor market.

In Cambodia the number of workers in the industry continued to grow because of industry expansion. In Sri Lanka, apparel employment declined because of industry consolidation. Given that women represent the major share of employment in apparel manufacturing, the general employment trends are directly applied to women. Employment in Cambodia's apparel sector mushroomed from fewer than 19,000 workers in 1995 to approximately 270,000 in 2004 (Staritz and Frederick 2011a). Growth continued after the MFA phase-out, with operating employment reaching 353,017 workers in 2007 (see figure 1). After 2007, employment dipped to 281,855 in 2009, but recovered to 335,342 in 2011. Employment levels in Sri Lanka's apparel sector increased from 102,000 in 1990 to 340,367 in 2004,

accounting for more than a third of manufacturing employment in 2004 (Staritz and Frederick 2011b). As the industry started consolidating[13] firms after the end of the MFA, employment declined by approximately 18 percent to 280,000 in 2009 (see figure 1).

Figure 1 Total Employment in the Apparel Sector in Cambodia and Sri Lanka



Source: Kelegama 2005a, 2005b, 2006, 2009; Tait 2008; Barrie 2009; Saheed 2010; Garment Manufacturers' Association in Cambodia (GMAC).
Note: Operating employment numbers are presented for Cambodia.

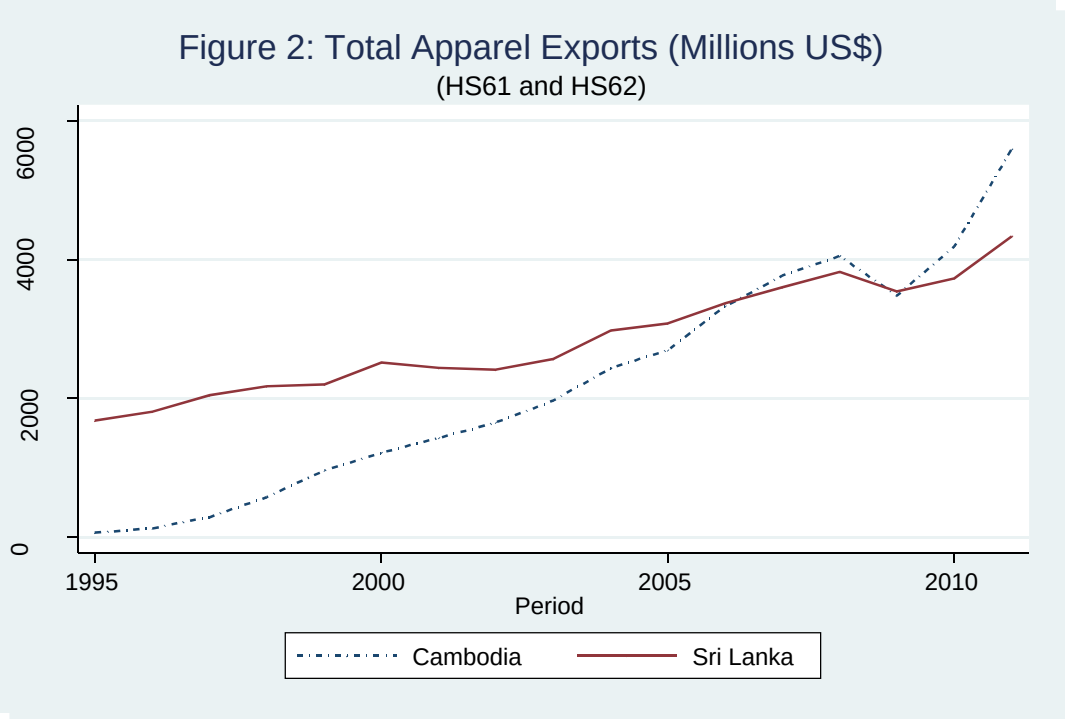
In addition to employment, working conditions directly impact a worker's well-being through the number of hours that are worked overtime, a hazardous work environment, social benefits, or workplace discrimination. But working conditions also have an indirect impact on employment and wage opportunities through the demand side: buyers might pay lower prices or refuse to buy at all if they know that producers exploit child labor or mistreat employees.

The Cambodian and Sri Lankan governments had different strategies to improve working conditions in the apparel sector. Sri Lanka, as a part of its Five-Year Strategy, designed international and local campaigns to improve the image of the apparel sector and working conditions. The 2006 international image-building campaign was called *Garments without Guilt*, and the 2008 local campaign was called *Abhimani* ("pride"). Despite these efforts, working conditions are still far from ideal. As mentioned earlier, labor costs in Sri Lanka are lower than in China and India. Besides low wages, other issues have been problematic in parts of the apparel sector, particularly in smaller firms. These issues include the lack of appointment letters, long working hours, high work intensity, and, in particular, denial of the right of association and collective bargaining (as many firms are reluctant to recognize trade unions) (Staritz and Frederick 2011b).

Cambodia has a good record of labor compliance because of the *Better Factories Cambodia* program that began in 1999. Through this program, compliance with international labor standards was directly linked to the apparel export quotas that Cambodia received from the United States. In the 2004 Foreign Investment Advisory Service survey of the 15 largest U.S. and European Union (EU) buyers of Cambodian apparel, Cambodia was rated the highest on "level of labor standards" and "protecting the rights of workers to organize unions" among Asian apparel-exporting countries, including Bangladesh, China, Thailand, and Vietnam (Staritz and Frederick 2011a). The MFA phase-out coincided with the expiration of the U.S. quotas in 2004, which eliminated the incentive motive of *Better Factories Cambodia* (Staritz and Frederick 2011a). Nevertheless, the Cambodian government encouraged the apparel sector to continue with the program to maintain its reputation for compliance with good labor standards in order to remain attractive to the foreign investors.

3.1. Exports

After the Cambodian apparel industry took off in the late 1990s, exports quadrupled within a decade, growing from US$578 million in 1998 to US$2.4 billion in 2004 (see figure 2). According to the Garment Manufacturers' Association in Cambodia (GMAC), apparel accounted for only 3 percent of Cambodia's total exports in the early 1990s, but by 2003 it constituted 76.4 percent. Sri Lanka, already a seasoned apparel exporter in the mid-1990s, experienced a healthy but more moderate growth than Cambodia, with exports rising from US$1.7 billion in 1995 to US$3 billion in 2004 (figure 2). In the late 1990s, however, export growth slowed, and exports even declined in 2001, 2002, and 2008 (figure 2).[14]



Source: United Nations Commodity Trade Statistics Database (UN Comtrade).
Note: Exports are represented by imports reported by partner countries. Apparel Classification: HS 1992: Woven: HS62; Knit HS61.

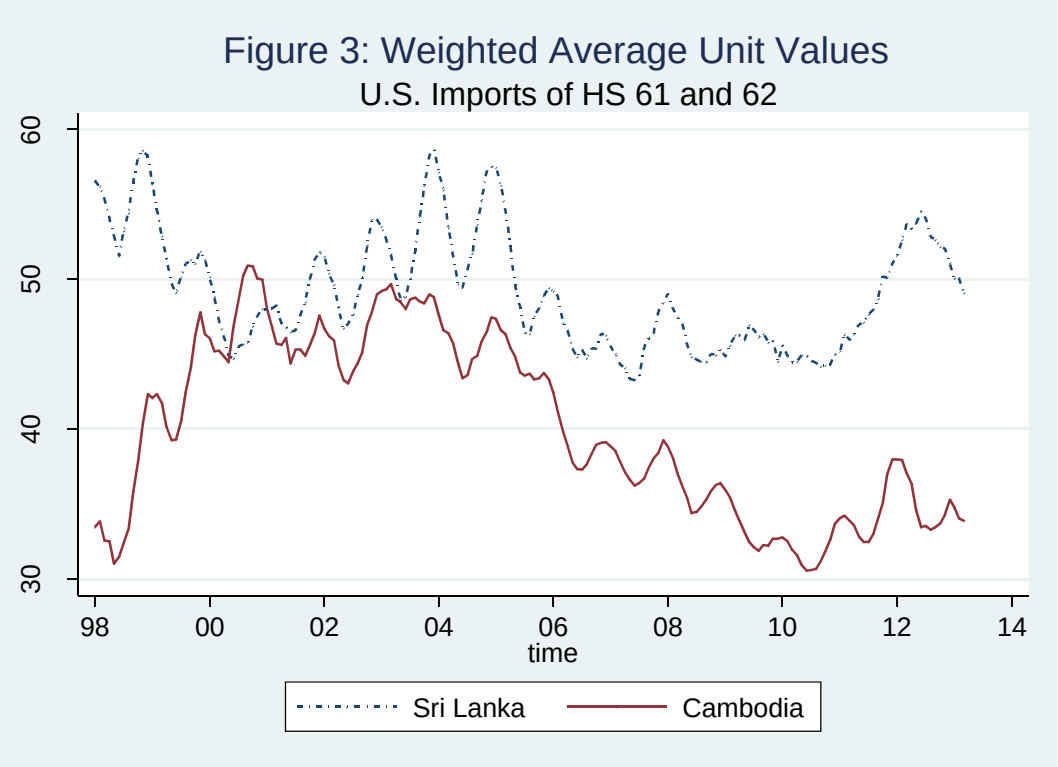
Despite pessimistic expectations for the apparel sectors post-MFA, both countries continued increasing apparel exports, though growth slowed somewhat. Sri Lanka expected that exports would decrease by half and that 40 percent of firms would close in 2005 (Kelegama and Epaarachchi 2002). Sri Lankan apparel exports, however, grew 6 percent annually on average, and their value increased by approximately US$1 billion over 2005–08. In Cambodia immediately after the MFA removal, total apparel exports increased to US$2.7 billion in 2005 and to US$5.6 billion in 2011, a rise of almost 14 percent annually. The fact that these two countries continued to be important apparel producers makes them interesting cases for our study.

3.2. Unit Values

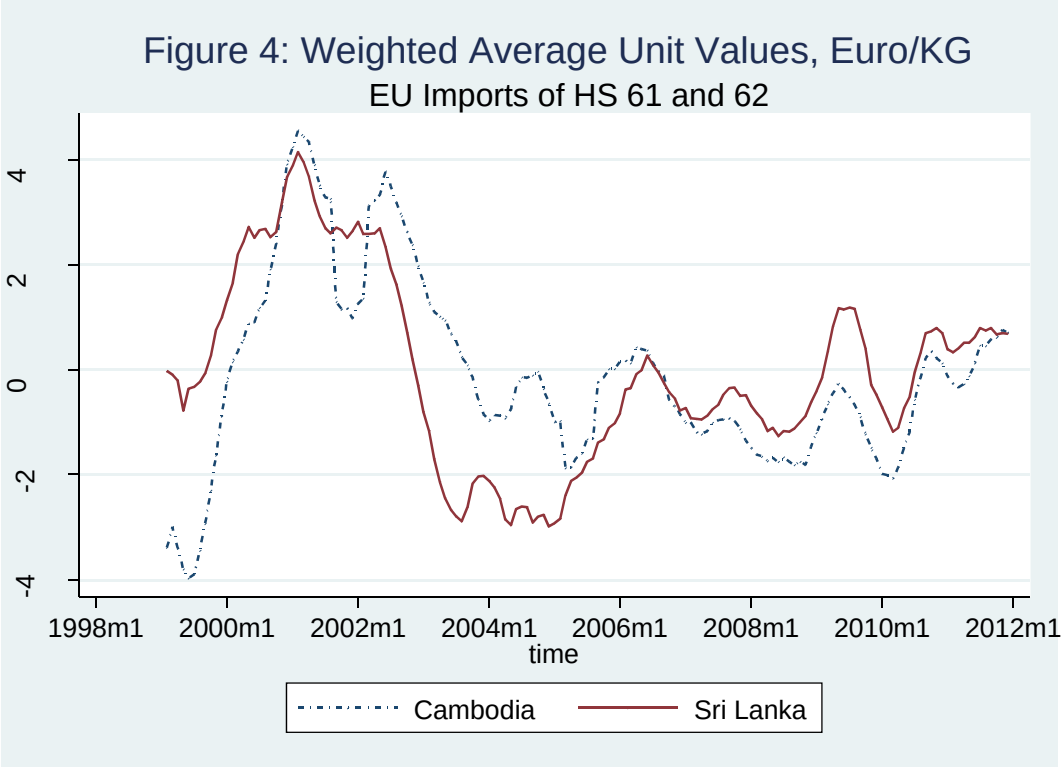
In the neoclassical model presented in section 2, output prices drive wages. We use unit values as a proxy for output prices,[15] following Harrigan and Barrows (2009). Our unit value data come from both OTEXA and Comtrade, two well-known official sources of apparel trade data. We compute weighted averages of unit values by dividing total value by a common quantity measure (square meter equivalent in the United States data and kilograms in the European data). We use data from both the United States and the EU because the end markets of both areas are highly concentrated, with 87 to 90 percent of total Cambodian and Sri Lankan apparel exports going to those two destinations. Export products in both Cambodia and Sri Lanka are highly concentrated in a few items. The Sri Lankan apparel industry focuses on higher value-added products, such as lingerie. Unit values of apparel exports from India and Sri Lanka to the EU are higher than those of Asian competitor countries, including Bangladesh, Cambodia, China, Pakistan, and Vietnam (Tewari 2008).

On the other hand, the unit prices of Cambodia's main export products are lower than the world average. For EU-15 exports, unit prices in 2005 were lower than in India, Sri Lanka, and Vietnam, but higher than in Bangladesh, China, and Pakistan (Tewari 2008). One of the reasons for the low prices of Cambodian apparel exports is that Cambodian apparel manufacturers concentrate on the production of basic products, while other countries export higher-value products.

In both Cambodia and Sri Lanka, unit values show declining trends following the end of the MFA. Figure 3 contains the weighted averages of the dollar-value square-meter equivalent apparel imports into the United States from Sri Lanka and Cambodia. The unit values for both countries fall after the end of the MFA, but recover after the great trade collapse of 2008. As Cambodia entered the global market (1998–2001), unit values rose sharply. They fell in Sri Lanka over the same time period. China's entrance into the WTO corresponds with a drop in unit values in Cambodia, while unit values rose in Sri Lanka. U.S. import prices experienced sharper declines than those of the EU. Between 2004 and 2008 the average price of apparel exports to the United States fell by 25 percent, from US$52 to US$39 per dozen. Sri Lankan apparel export unit prices to the United States declined from US$59 to US$42 per dozen items over this period. The average price of apparel exports to the EU-15 declined by 7 percent, from €13.4 to €12.5 per kilogram between 2004 and 2008 as shown in figure 4 (U.S. International Trade Commission (USITC) and Eurostat data; see Staritz and Frederick 2011a).



Source: Data from Office of Textiles and Apparel (OTEXA), U.S. Department of Commerce.
Note: Data represent the weighted U.S. dollar values per square meter equivalent of U.S. imports of HS 61 and HS 62 of each country. Data are smoothed using a six-month moving average.



Source: Eurostat data retrieved on 12/20/2012.
Note: Data represent the weighted unit values (euro per 100 kg) of EU-27 imports of HS 61 and HS 62 of each country. Data have means removed, are deseasonalized using monthly dummy variables, and are then smoothed using a six-month moving average.

The declining trends in unit values were expected. After the MFA phase-out, the competitive pressure in apparel exports increased, which inevitably led to a decrease in apparel prices. According to the simple model described in section 2, the decline in apparel prices should have resulted in apparel manufacturing wages decreasing in the short run and in female wages in all industries declining in the long run (in approximately three to five years). The next subsection provides empirical evidence for these theoretical results.

4. Data and Empirical Results

4.1 Data Description

We combine household and labor force surveys from each country. The Cambodian data come from the cross-sectional Cambodia Socio-Economic Survey (CSES), which is collected by the National Institute of Statistics. We use data from the 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011 surveys, which contain roughly 12,000 households each. These are cross-sectional household surveys that contain detailed household and individual information, including wage, education, age, marital status, gender, location, industry, occupation, some working conditions, and the hours worked.

For Sri Lankan data, we use the 1992–2002, 2008, 2011, and 2012 waves of the cross-sectional Sri Lanka Labor Force Surveys (LFS) and 2006 wave of the Sri Lanka Household Income and Expenditure Survey (HIES), which are carried out by the Sri Lankan Department of Census and Statistics. These surveys cover approximately 30,000–60,000 individuals each. They contain information about work-related activities (for example, employment status, occupation, industry, and wages); household characteristics (for example, size and location); and individual demographic characteristics such as age, gender, and education, among others.

Apparel workers in Cambodia and Sri Lanka share a number of characteristics. First, the share of the total labor force employed in the textiles and apparel industry was relatively small and remained stable after the end of the MFA: 5 percent in Cambodia and 6 percent in Sri Lanka (see table 1).

Table 1. Labor Force Characteristics for Cambodia and Sri Lanka

	Panel A: Cambodia							
	1996	1999	2004	2007	2008	2009	2010	2011
Employment and Education								
Labor force participation rate, all	33.3	56.6	17.0	27.0	21.2	20.8	25.5	27.6
Labor force participation rate, male	43.5	73.1	20.6	31.6	27.5	25.2	31.1	32.5
Labor force participation rate, female	24.1	41.0	13.9	22.3	15.5	16.8	20.4	23.3
Females in employment (percent)	52.3	51.5	50.1	49.2	48.6	49.7	50.8	51.2
Hours worked, all	39.3	45.7	37.1	39.7	39.2	36.0	39.5	39.4
Hours worked, male	41.3	46.1	38.0	41.0	40.6	37.3	40.8	40.9
Hours worked, female	37.5	45.4	36.1	38.3	37.7	34.7	38.3	38.0
Years of education	3.4	4.5	5.2	5.5	5.7	4.9	5.9	6.3
Years of education for females in T&G	4.5	5.5	6.1	6.1	5.7	5.9	6.3	6.9
Years of education for men in T&G	5	7.5	7.3	8.3	7.3	6.9	7.8	8.2
Average years of education in T&G	4.6	5.8	6.3	6.5	6.1	6.1	6.5	7.1
Employment Share of the Industry								
Agriculture (percent)	74.3	63.5	60.7	51	45.2	57.4	46.8	48.4
T&G (percent)	1.6	4.2	4.3	4.7	5.5	5.3	6.5	7.8
Share of female in T&G (percent)	81.7	82.8	81.1	82.3	78.7	82.6	85.2	84.9

Source: Calculations based on the Cambodia Socio-Economic Survey (CSES).
Note: T&G = textiles and garments.

Table 1 (cont). Labor Force Characteristics for Cambodia and Sri Lanka

Panel B: Sri Lanka

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2006	2008	2011	2012
Employment and Education															
Labor force participation rate, all	46.1	47.1	47.2	47.1	44.2	48.0	51.8	50.4	50.5	49.4	50.2	52.1	48.7	45.0	44.8
Labor force participation rate, male	63.1	64.6	64.9	65.1	61.2	64.3	67.2	66.7	66.6	66.7	67.8	72.1	67.4	63.9	64.5
Labor force participation rate, female	29.4	30.1	29.9	29.7	28.6	32.0	36.8	34.4	34.6	32.6	33.4	33.7	31.7	27.8	27.0
Females in employment (percent)	28.4	29	28.9	29.3	32.4	31.3	34.1	32.9	33.2	32.1	32.4	30.7	34.1	32.8	32.1
Hours worked, all	40.9	41.2	42.2	42.1	39.7	38.5	39.2	39.1	38.4	41.8	40.2	n/a	40.0	46.1	46.2
Hours worked, male	42.4	42.5	43.6	43.5	40.5	39.9	41.3	41.0	40.1	43.6	42.1	n/a	42.4	48.7	48.7
Hours worked, female	37.2	38.1	38.6	38.8	37.7	35.3	35.1	35.1	35.0	37.8	36.3	n/a	35.2	40.7	40.8
Years of education	7.7	7.8	7.9	8	7.5	7.7	7.9	8	8	8.3	8.3	8.4	8.5	8.7	8.8
Years of education for females in T&G	9	9.2	9.3	9.4	9.5	9.2	9.5	9.5	9.6	9.8	9.6	10	10.2	10.3	10.2
Years of education for men in T&G	9.3	9.1	9.2	9.4	9.7	9.4	9.3	9.6	9.7	10.1	9.7	10.3	10.4	10.4	10.3
Average years of education in T&G	9.1	9.1	9.3	9.4	9.6	9.2	9.5	9.6	9.6	9.9	9.6	10.1	10.2	10.3	10.2
Employment Share of the Industry															
Agriculture (percent)	29.61	29.7	27.11	25.66	39.54	39.43	40.76	39.23	38.45	33.34	33	24.89	32.27	32.62	29.95
T&G (percent)	7.1	7.2	8.12	8.31	8.72	8.37	8.17	8.23	9.04	8.99	5.82	5.8	6.03	4.93	5.46
Share of female in T&G (percent)	53.4	59.7	54.8	56.1	57.5	61.0	58.3	56.9	59.5	55.4	72.3	69.3	73.4	72.3	71.1

Source: Calculations based on the Sri Lankan 2006 Household Income and Expenditure Survey (HIES) and the 1992–2002, 2008, 2011, and 2012 Labor Force Surveys. Hours worked were not reported in the Sri Lanka HIES 2006.
Note: T&G = textiles and garments.

Second, the apparel sector is female dominated. The female share of employment in apparel was 71 percent in Sri Lanka (2012) and 85 percent in Cambodia (2011). In both countries, this share was much higher than the proportion of females in the total employment: 51 percent in Cambodia and 32 percent in Sri Lanka. Moreover, the share of females in apparel remained relatively stable in both countries after the MFA phase-out. By nearly any definition, the apparel sector is female intensive.

Third, the labor force working in apparel was more educated than the country average. In Cambodia in 2011, an average person had 6.3 years of education, while an apparel sector employee had 7.1 years of education. In Sri Lanka in 2012, where the population is more educated on average than in Cambodia, the average person had 8.8 years of education compared to 10.2 years for an apparel sector worker.

Fourth, men working in the apparel sector are more educated than women. In Cambodia in 2011, women had on average 6.9 years of education while men had 8.2 years. This gap was smaller for Sri Lanka in 2012, with 10.2 years of schooling for female workers and 10.3 years for male workers. But these differences are representative of the gender education gap in general in these countries, rather than a gap that is specific to the apparel industry. On average, wages were higher in textiles and garments than in agriculture in both countries (see table 2) but lower than the economy-wide average.

Table 2. Monthly Real Wage Levels in U.S. Dollars for Cambodia and Sri Lanka, 2005 prices

Panel A: Cambodia

	1996	1999	2004	2007	2008	2009	2010	2011
Mean wage in T&G, all	38	51	76	64	57	54	66	64
Male	48	71	85	73	54	55	81	66
Female	34	47	73	62	58	54	63	63
Mean wage in agriculture, all	41	28	78	35	37	32	34	45
Male	44	33	85	41	42	36	39	57
Female	34	21	71	30	32	27	30	34
Mean wage, all	67	46	77	79	78	57	77	82
Male	76	48	79	87	87	62	87	94
Female	55	43	73	67	64	50	63	67

Panel B: Sri Lanka

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2006	2008	2011	2012
Mean wage in T&G, all	91	85	92	96	85	81	74	70	71	61	59	68	58	65	75
Male	115	99	112	118	114	108	96	87	94	77	79	94	70	91	92
Female	80	79	84	86	72	71	64	61	62	53	54	60	53	56	67
Mean wage in agriculture, all	57	54	59	61	52	51	47	49	45	37	35	39	39	45	54
Male	63	59	66	69	58	57	53	55	50	42	39	44	46	50	60
Female	46	46	49	46	45	43	41	40	38	31	29	31	31	38	44
Mean wage, all	94	92	101	101	87	89	84	82	79	69	65	81	69	76	88
Male	99	96	106	105	93	96	90	87	84	73	68	85	72	80	92
Female	84	84	92	94	74	77	72	71	68	61	59	71	62	67	78

Source: Calculations based on Cambodia Socio-Economic Surveys, the Sri Lankan 2006 Household Income and Expenditure Survey, and the 1992–2002, 2008, 2011, and 2012 Labor Force Surveys.
Note: T&G = textiles and garments. The local currency was transformed into the U.S. dollars using the Consumer Price Index (CPI) and the exchange rate from the World Development Indicators Database.

4.2 Decomposing the Gender Wage Differential

The Oaxaca-Blinder decomposition is a very well-known technique that is generally applied in studies of gender wage differentials. Men and women may have different wages for

many reasons. Some are easily observable (such as differences in education, age, and occupation) and others, such as discrimination, are considered to be usually unobservable to the researcher. The decomposition technique separates the observed wage differences into the observable and unobservable components.

The decomposition involves estimating separate wage equations for men and women that include age, education, and other observable variables on the right-hand side. The estimated coefficients are therefore allowed to differ by gender. The approach then applies the estimated coefficients from, say, the male equation to the female data to estimate a possible counterfactual wage value for women. The difference between the two earnings can therefore be expressed as the part due to the differences in the observable and the unobservable characteristics.

The Oaxaca-Blinder decompositions shown in tables 3 and 4 include hours worked, age, age squared, and education as observable characteristics. The decompositions show that in Cambodia the gender differential falls between 11 percent and 32.5 percent, and that it grew, overall, between 1996 and 2011. About two thirds of the differential could not be explained by the observed characteristics that we included. In Sri Lanka, the wage gap also increased over time from 15.6 percent in 1993 to 23.5 percent in 2012. Similarly, unexplained characteristics accounted for a large portion of the differential. The large role of the unexplained component suggests that globalization generally, and apparel prices in particular, could be playing a significant role through the general equilibrium effects that apparel price changes have in the economy.

Table 3. Oaxaca-Blinder Decomposition for Sri Lanka

	1998	1999	2000	2001	2002	2008	2011	2012
VARIABLES	overall	overall	overall	overall	overall	overall	overall	overall
male	8.570***	8.588***	8.577***	8.575***	8.536***	8.712***	8.856***	8.933***
	(0.011)	(0.012)	(0.013)	(0.015)	(0.013)	(0.006)	(0.007)	(0.006)
female	8.294***	8.367***	8.366***	8.375***	8.324***	8.462***	8.609***	8.698***
	(0.016)	(0.017)	(0.018)	(0.020)	(0.019)	(0.011)	(0.013)	(0.011)
difference	0.275***	0.221***	0.210***	0.201***	0.212***	0.249***	0.247***	0.235***
	(0.020)	(0.021)	(0.022)	(0.026)	(0.023)	(0.012)	(0.015)	(0.013)
explained	0.051***	0.036***	0.040***	0.036***	0.018*	-0.005	0.004	-0.014*
	(0.008)	(0.008)	(0.008)	(0.010)	(0.009)	(0.007)	(0.008)	(0.007)
unexplained	0.224***	0.186***	0.171***	0.165***	0.194***	0.254***	0.243***	0.249***
	(0.018)	(0.019)	(0.020)	(0.024)	(0.021)	(0.010)	(0.012)	(0.011)

Source: Calculations based on Sri Lankan 1998–2002, 2008, 2011, and 2012 Labor Force Surveys.
Note: Standard errors are in parentheses. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.

Table 4. Oaxaca-Blinder Decomposition for Cambodia

	1996	1999	2004	2007	2008	2009	2010	2011
VARIABLES	overall	overall	overall	overall	overall	overall	overall	overall
male	11.498***	11.703***	11.850***	12.243***	12.156***	11.940***	12.326***	12.432***
	(0.024)	(0.020)	(0.016)	(0.024)	(0.040)	(0.019)	(0.019)	(0.017)
female	11.388***	11.740***	11.727***	12.072***	12.032***	11.777***	12.043***	12.107***
	(0.026)	(0.026)	(0.020)	(0.029)	(0.043)	(0.022)	(0.022)	(0.019)
difference	0.110***	-0.037	0.123***	0.172***	0.124**	0.164***	0.284***	0.325***
	(0.036)	(0.033)	(0.025)	(0.038)	(0.059)	(0.029)	(0.029)	(0.025)
explained	0.068***	0.014	0.054***	0.115***	0.114***	0.083***	0.135***	0.122***
	(0.013)	(0.014)	(0.011)	(0.019)	(0.031)	(0.016)	(0.016)	(0.015)
unexplained	0.041	-0.052	0.068***	0.057*	0.010	0.080***	0.149***	0.203***
	(0.033)	(0.033)	(0.025)	(0.034)	(0.057)	(0.025)	(0.025)	(0.021)

Source: Calculations based on Cambodia Socio-Economic Surveys
Note: Standard errors are in parentheses. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.

4.3. Estimation Issues and Specification

The Mincerian equation takes a hedonic approach to decompose earnings into components attributed to separate characteristics (equation 6). We use pooled cross-sectional data to regress the logarithm of the wages[16] for worker *k* on a set of worker characteristics such as gender (gen_k); age (age_k; age_k^2)*;* years of education (edu_k); hours worked[17] (h_k); industry dummies[18] (ind_k), including a textile and garment industry dummy (TG_k); occupation dummies[19] ($occup_k$); a year dummy (*year*) equal to the value of one for the year 2005 and beyond; an interaction term between TG_k and the *year* dummy; and a remaining match-specific component that is captured in the residual term ε_k.

$$\log(wage_k) = \beta_0 + \beta_1 gen_k + \beta_2 age_k + \beta_3 age_k^2 + \beta_4 edu_k + \beta_5 h_k + \sum_j \gamma_j ind_k + \beta_5 TG_{kt} + \sum_i \lambda_i occup_k + \alpha * year + \psi * year * TG_k + \varepsilon_k \quad (6)$$

We correct for the possibility of selection bias that comes from the censoring of female wages by using the two-step Heckman approach. Participation is defined as having positive wage value, and the variables used in the selection correction equation are gender, age, age squared, years of education, and a series of dummies for marital status, which serve as an exclusion restriction since they are not included in the wage regression.[20]

If adjustment costs matter, the effect of a decrease in industry *j*'s price would have separate short-run and long-run effects on wages. In the short run, the decrease in price would affect the industry-specific component of the wage and would show up as a contemporaneous decline in the estimated, industry-specific, textiles and garments (T&G) coefficient ψ as implied

by equation 6. The estimated coefficients on the industry dummy variables are interpreted as "inter-industry wage differentials" following Krueger and Summers (1987).

In the long run, the price decrease would affect the "general" component of wages. In our apparel industry application, as long as industry *j* is female-intensive (we assumed that T&G is female-intensive), any decrease in the price of industry *j* (T&G in our case) will affect β_1, which represents the gender wage gap. Of course, what time frame constitutes the "long run" is not clear at the start. Estimates of the relevant time frame for "long run" effects are rare. Robertson (2004) suggests that the Stolper-Samuelson effects begin to emerge in three to five years.

4.3. Main Results

Table 5 presents the results of wage regressions for Cambodia and Sri Lanka in the short run and table 6 presents the results of wage regressions for both countries in the long run. The regression analysis was carried out using the methodology described in section 2. For our analysis, we used eight rounds of the Cambodian Socio-Economic Surveys that covered the 1996–2011 period, and the 1992–2002, 2008, 2011, and 2012 Sri Lankan Labor Force Surveys.[21]

In both countries, working in apparel pays a premium compared to the economy average.[22] Column 1 of table 5 shows that the MFA-era wage premium was 39.2 percent in Cambodia and column 3 of table 5 shows that this premium was 6.7 percent in Sri Lanka. This result contrasts with table 4, which might be interpreted as demonstrating that the apparel sector is a low-wage "sweatshop" sector. In comparison to international wages, wages are indeed low in the apparel sector. But table 5 shows that relative to alternatives for similar individuals (generally younger, unmarried, less-educated females), the apparel jobs (T&G dummy) pay higher than average.[23]

Table 5. Wage Premium Regressions, Short Run

	Cambodia		Sri Lanka	
	1	2	3	4
Female dummy	-0.205***	-0.209***	-0.568***	-0.570***
	(0.016)	(0.016)	(0.023)	(0.023)
Hours	0.015***	0.015***	0.012***	0.012***
	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.042***	0.044***	0.149***	0.149***
	(0.004)	(0.004)	(0.006)	(0.006)
Education	0.026***	0.026***	0.046***	0.045***
	(0.001)	(0.001)	(0.001)	(0.001)
T&G dummy	0.392***	-0.136**	0.067***	0.088***
	(0.026)	(0.063)	(0.010)	(0.013)
1999–2004 dummy		0.033*		0.059***
		(0.019)		(0.007)
2005 and above dummy	0.280***	0.307***	0.066***	0.092***
	(0.013)	(0.020)	(0.007)	(0.007)
T&G* (1999–2004 dummy)		0.686***		-0.054***
		(0.075)		(0.020)
T&G* (2005 and above dummy)	-0.234***	0.383***	-0.043*	-0.067***
	(0.030)	(0.073)	(0.022)	(0.024)
Hazard ratio	0.002	0.010	0.681***	0.683***
	(0.051)	(0.051)	(0.045)	(0.045)
Constant	10.392***	10.246***	4.806***	4.783***
	(0.124)	(0.127)	(0.151)	(0.151)
Observations	31,768	31,768	153,155	153,155

Source: Calculations based on the Cambodian Socio-Economic Surveys 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011, and the Sri Lankan 1992–2002, 2008, 2011, and 2012 Labor Force Surveys.
Note: Standard errors are in parentheses. Standard errors are clustered at the industry level. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two. and three asterisks respectively.

The grand mean effects of the industries are calculated; post-MFA is a dummy equal to 1 for years 2005 and later; additional controls include age squared, industry, and occupation dummies. Occupation dummies are according to 1-digit ISCO-08; the omitted category is managers. Industry dummies include 15 categories: Agriculture and Forestry; Mining; Food, Beverage, and Tobacco; Textile and Apparel; Wood; Other Manufacturing; Utilities; Construction; Sales; Transport; Financial, Insurance, and Real Estate; Public Administration; Social Services; and Other Services. Log wages are measured as logarithm of real monthly individual labor income in 2005 prices. The omitted time category in cols (1) and (3) is 2004 and earlier; the omitted time category in cols (2) and (4) is 1998 and earlier.

Table 6. Wage Premium Regressions, Long Run

	Cambodia		Sri Lanka	
	1	2	3	4
Female dummy	-0.172***	-0.336***	-0.556***	-0.551***
	(0.019)	(0.030)	(0.023)	(0.024)
Hours	0.015***	0.015***	0.012***	0.012***
	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.041***	0.042***	0.148***	0.149***
	(0.004)	(0.004)	(0.006)	(0.006)
Education	0.026***	0.026***	0.046***	0.045***
	(0.001)	(0.001)	(0.001)	(0.001)
T&G dummy	0.281***	0.275***	0.060***	0.059***
	(0.021)	(0.021)	(0.010)	(0.010)
1999–2004 dummy		-0.005		0.059***
		(0.023)		(0.008)
2005 and above dummy	0.269***	0.272***	0.076***	0.101***
	(0.014)	(0.023)	(0.008)	(0.008)
Female* (1999–2004 dummy)		0.225***		-0.017
		(0.033)		(0.013)
Female* (2005 and above dummy)	-0.068***	0.099***	-0.044***	-0.050***
	(0.021)	(0.032)	(0.013)	(0.014)
Hazard ratio	-0.002	-0.001	0.678***	0.680***
	(0.051)	(0.051)	(0.045)	(0.045)
Constant	10.404***	10.389***	4.811***	4.787***
	(0.125)	(0.128)	(0.151)	(0.151)
Observations	31,768	31,768	153,155	153,155

Source: Calculations based on the Cambodian Socio-Economic Surveys 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011, and Sri Lankan 1992–2002, 2008, 2011, and 2012 Labor Force Surveys.
Note: Standard errors are in parentheses. Standard errors are clustered at the industry level. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.

The grand mean effects of the industries are calculated; post-MFA is a dummy equal to 1 for years 2005 and later; additional controls include age squared, industry, and occupation dummies. Sri Lanka Household Income and Expenditure Survey was excluded from the analysis as hours worked were not available in this survey. Occupation dummies are according to 1-digit ISCO-08; the omitted category is managers. Industry dummies include 15 categories: Agriculture and Forestry; Mining; Food, Beverage, and Tobacco; Textile and Apparel; Wood; Other Manufacturing; Utilities; Construction; Sales; Transport; Financial, Insurance, and Real Estate; Public Administration; Social Services; and Other Services. Log wages are measured as logarithm of real monthly individual labor income. Log wages are measured as logarithm of real monthly individual labor income in 2005 prices. The omitted time category in cols (1) and (3) is 2004 and earlier; the omitted time category in cols (2) and (4) is 1998 and earlier.

Figures 3 and 4 demonstrate that the unit values of apparel exports fell in both countries after the MFA phase-out. The theory predicts that the fall in apparel prices should translate into a drop in the apparel premium. Table 5 shows that in both countries we observe a short-run drop in the apparel premium following the end of the MFA. The interaction with post-MFA and the T&G sector (apparel) is negative and significant in both countries. In Cambodia, the apparel wage premium declined post-MFA by 23 percent compared to other industries, but still remained 16 percent higher than the economy average. In Sri Lanka the apparel premium fell by to 4.3 percent after the MFA phase-out.

An alternative specification separates the pre-MFA period using 1999 as a dividing year. This is especially important for Cambodia, which entered the international market around 1999. Figure 4, for example, shows a large increase in the unit value of apparel exports between 1998 and 2000 in Cambodia. The pattern of apparel wage premiums matches the price movements shown in figure 4. The wage premium increased 68.6 percentage points in the 1999–2004 period when the apparel price was increasing. In the MFA period, the premium fell but remained 38.3 percentage points higher than in the pre-1999 period. This pattern also matches the changes in unit values shown in figure 4.

In Sri Lanka, where the price movements were more moderate, we see smaller changes in the apparel wage premium. Figure 3 shows that the unit values in the 1999–2004 period were lower than in the 1998–1999 period, and that they continued to fall after the end of the MFA. The estimated apparel wage premiums in table 5 (column 4) follow the same pattern: they were lower in the 1999–2004 period than prior to 1999, and they continued to drop in the post-MFA period.

Table 5 also contains the results from the estimate of the male-female wage differential. Columns 1 and 3 shows that the male-female wage gap throughout the economy in both countries increased after the end of the MFA; this is consistent with the theoretic prediction that a drop in the price of the female-intensive good should reduce the wages of women throughout the economy. The change in the wage gap is very similar in the two countries.

When we divide the MFA period into two segments, again using 1999 as a break point, we see that the male-female wage gap closed considerably in Cambodia when the price of apparel increased between 1999 and 2004 (column 2, table 5), and widened again when the price of apparel dropped after 2004. In Sri Lanka, which did not experience the same dramatic change in unit values, the gender wage gap demonstrates no significant difference in the 1999–2004 period. The gap does increase, however, after the end of the MFA when the unit value of apparel dropped, as suggested by theory.

The results presented in table 7 combine the short-run and long-run effects in one empirical estimation. The results include interaction terms with both the T&G dummy and the female dummy. The results described above still hold: the returns to working in the apparel sector declined post-MFA in both countries and the male-female wage gap widened.

Table 7. Wage Premium Regressions, Short and Long Run

	Cambodia		Sri Lanka	
	1	2	3	4
Female dummy	-0.198***	-0.311***	-0.557***	-0.555***
	(0.019)	(0.030)	(0.023)	(0.024)
Hours	0.015***	0.015***	0.012***	0.012***
	(0.000)	(0.000)	(0.000)	(0.000)
Age	0.042***	0.043***	0.148***	0.149***
	(0.004)	(0.004)	(0.006)	(0.006)
Education	0.026***	0.026***	0.046***	0.045***
	(0.001)	(0.001)	(0.001)	(0.001)
T&G dummy	0.389***	-0.102	0.065***	0.084***
	(0.026)	(0.063)	(0.010)	(0.013)
1999-2004 dummy		-0.024		0.062***
		(0.023)		(0.008)
2005 and above dummy	0.284***	0.267***	0.077***	0.104***
	(0.014)	(0.023)	(0.008)	(0.008)
T&G* (1999–2004 dummy)		0.623***		-0.051**
		(0.076)		(0.020)
T&G* (2005 and above dummy)	-0.226***	0.350***	-0.027	-0.050**
	(0.033)	(0.074)	(0.023)	(0.024)
Female* (1999–2004 dummy)		0.157***		-0.010
		(0.033)		(0.013)
Female* (2005 and above dummy)	-0.015	0.099***	-0.040***	-0.043***
	(0.022)	(0.032)	(0.013)	(0.015)
Hazard ratio	0.002	0.001	0.679***	0.682***
	(0.051)	(0.051)	(0.045)	(0.045)
Constant	10.388***	10.316***	4.808***	4.784***
	(0.125)	(0.128)	(0.151)	(0.151)
Observations	31,768	31,768	153,155	153,155

Source: Authors' calculations based on the Cambodian Socio-Economic Surveys 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011, and Sri Lankan 1992–2002, 2008, 2011, and 2012 Labor Force Surveys.
Note: Standard errors are in parentheses. Standard errors are clustered at the industry level. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.

The grand mean effects of the industries are calculated; post-MFA is a dummy equal to 1 for years 2005 and later; additional controls include age squared, industry, and occupation dummies. Sri Lanka Household Income and Expenditure Survey was excluded from the analysis as hours worked were not available in this survey. Occupation dummies are according to 1-digit ISCO-08; the omitted category is managers. Industry dummies include 15 categories: Agriculture and Forestry; Mining; Food, Beverage, and Tobacco; Textile and Apparel; Wood; Other Manufacturing; Utilities; Construction; Sales; Transport; Financial, Insurance, and Real Estate; Public Administration; Social Services; and Other Services. Log wages are measured as logarithm of real monthly individual labor income.

Since we are using cross-sectional data pooled over time, we conduct robustness exercises to check whether there were changes in returns to other factors over time (such as age, education, or hours of work) that could potentially affect our results. Tables 8 and 9 present the results of log wage regressions over time for Cambodia and Sri Lanka respectively using a simple Mincer model with Heckman correction as described above.

Table 8. Wage Premiums Regressions, Cambodia

	1996	1999	2004	2007	2008	2009	2010	2011
	1	2	3	4	5	6	7	8
Female dummy	-0.314***	-0.203***	-0.183***	-0.216***	-0.183*	-0.142***	-0.303***	-0.216***
	(0.043)	(0.043)	(0.035)	(0.041)	(0.102)	(0.034)	(0.037)	(0.027)
Hours	0.010***	0.011***	0.016***	0.015***	0.020***	0.018***	0.015***	0.016***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Age	0.059***	0.049***	0.041***	0.062***	0.058***	0.052***	0.082***	0.054***
	(0.012)	(0.008)	(0.008)	(0.009)	(0.020)	(0.009)	(0.011)	(0.007)
Age squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education	0.052***	0.043***	0.011***	0.074***	0.061***	0.047***	0.063***	0.048***
	(0.005)	(0.011)	(0.002)	(0.010)	(0.014)	(0.004)	(0.005)	(0.004)
T&G dummy	-0.362***	0.543***	0.288***	0.296***	0.300**	0.102**	0.070	-0.024
	(0.134)	(0.067)	(0.049)	(0.072)	(0.123)	(0.051)	(0.051)	(0.044)
Hazard ratio	0.008	0.140	-0.035	0.549***	0.136	0.054	0.594***	0.100
	(0.131)	(0.124)	(0.102)	(0.158)	(0.297)	(0.109)	(0.131)	(0.091)
Constant	11.037***	10.017***	10.708***	9.540***	9.639***	10.076***	9.315***	10.335***
	(0.514)	(0.308)	(0.248)	(0.349)	(0.717)	(0.287)	(0.337)	(0.233)
Observations	4,723	3,448	8,358	2,553	1,402	4,488	3,276	3,520

Source: Calculations based on the Cambodian Socio-Economic Surveys 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011.
Note: Standard errors are in parentheses. Standard errors are clustered at the industry level. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively. The grand mean effects of the industries are calculated; additional controls include, industry, and occupation dummies. Occupation dummies are according to 1-digit ISCO-08; the omitted category is managers. Industry dummies include 15 categories: Agriculture and Forestry; Mining; Food, Beverage, and Tobacco; Textile and Apparel; Wood; Other Manufacturing; Utilities; Construction; Sales; Transport; Financial, Insurance, and Real Estate; Public Administration; Social Services; and Other Services. Log wages are measured as the logarithm of real monthly individual labor income. Log wages are measured as the logarithm of real monthly individual labor income in 2005 prices.

Table 9. Wage Premiums Regressions, Sri Lanka

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2008	2011	2012
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Female dummy	-0.479***	-0.624***	-0.675***	-0.497***	-0.391***	-0.633***	-0.564***	-0.591***	-0.548***	-0.457***	-0.542***	-0.576***	-0.631***	-0.526***
	(0.092)	(0.131)	(0.107)	(0.087)	(0.067)	(0.066)	(0.062)	(0.076)	(0.075)	(0.088)	(0.075)	(0.040)	(0.042)	(0.037)
Hours	0.012***	0.011***	0.010***	0.012***	0.012***	0.012***	0.013***	0.011***	0.014***	0.013***	0.013***	0.008***	0.010***	0.010***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Age	0.134***	0.194***	0.203***	0.138***	0.110***	0.170***	0.144***	0.154***	0.150***	0.118***	0.135***	0.113***	0.124***	0.103***
	(0.025)	(0.038)	(0.029)	(0.024)	(0.020)	(0.019)	(0.018)	(0.021)	(0.021)	(0.023)	(0.020)	(0.009)	(0.010)	(0.008)
Age squared	-0.002***	-0.002***	-0.003***	-0.002***	-0.001***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***	-0.002***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education	0.044***	0.060***	0.054***	0.051***	0.038***	0.036***	0.036***	0.041***	0.043***	0.043***	0.037***	0.037***	0.047***	0.048***
	(0.003)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.004)	(0.002)	(0.002)	(0.002)
T&G dummy	0.106***	0.047	0.086**	0.099**	-0.001	0.057**	0.067**	0.020	0.025	-0.021	0.017	0.014	0.070***	0.072***
	(0.034)	(0.052)	(0.039)	(0.039)	(0.032)	(0.028)	(0.027)	(0.031)	(0.031)	(0.037)	(0.039)	(0.016)	(0.022)	(0.019)
Hazard ratio	0.459***	0.918***	0.970***	0.571***	0.433***	0.872***	0.697***	0.771***	0.742***	0.535***	0.587***	0.552***	0.639***	0.438***
	(0.174)	(0.268)	(0.203)	(0.172)	(0.135)	(0.138)	(0.137)	(0.154)	(0.159)	(0.172)	(0.147)	(0.074)	(0.074)	(0.064)
Constant	5.070***	3.485***	3.786***	5.048***	6.126***	4.452***	5.101***	4.857***	4.963***	5.359***	5.055***	5.753***	5.705***	6.160***
	(0.598)	(0.922)	(0.707)	(0.593)	(0.451)	(0.467)	(0.448)	(0.511)	(0.527)	(0.584)	(0.493)	(0.243)	(0.250)	(0.217)
Observations	16,849	7,029	6,748	6,826	7,200	11,472	12,177	11,991	12,358	9,215	12,378	14,820	11,428	12,664

Source: Authors' calculations based on the Sri Lankan 1992–2002, 2008, 2011, and 2012 Labor Force Surveys.
Note: Standard errors are in parentheses. Standard errors are clustered at the industry level. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.
The grand mean effects of the industries are calculated; additional controls include industry, and occupation dummies. Sri Lanka Household Income and Expenditure Survey was excluded from the analysis as hours worked were not available in this survey. Occupation dummies are according to 1-digit ISCO-08; the omitted category is managers. Industry dummies include 15 categories: Agriculture and Forestry; Mining; Food, Beverage, and Tobacco; Textile and Apparel; Wood; Other Manufacturing; Utilities; Construction; Sales; Transport; Financial, Insurance, and Real Estate; Public Administration; Social Services; and Other Services. Log wages are measured as the logarithm of real monthly individual labor income. Log wages are measured as the logarithm of real monthly individual labor income in 2005 prices.

The coefficient of the female dummy variable, which is capturing male-female wage differentials, varies over time in both countries. This reflects changes in price of a specific factor—female labor—over time. Furthermore, the results show that wages in T&G are generally higher than economy-wide average wages. The changes in wages in T&G generally trace changes in global apparel prices with a lag (figure 4). Importantly, the coefficients for age, education, and hours worked were relatively stable over time in both countries.

The point of the industrial policy employed by Cambodia and Sri Lanka (encouraging T&G in particular) supports the policy prescriptions of the "old" Krueger and Summers literature. In addition, they found that the differentials were constant, but we show that they are correlated with industry prices (and are therefore not constant).

4.4. Labor Force Participation

Suarè and Zoabi (2014) find that women adjust along the extensive margin in response to labor demand shocks. To evaluate this possibility, we consider trends in women's labor force participation. Tables 10 and 11 report marginal effects (evaluated at the means of the regressors) of the independent variables on labor force participation in Cambodia and Sri Lanka. The likelihood of labor force participation for women is lower than that of men in both countries. The female-male labor force participation differentials are higher in Sri Lanka than in Cambodia. For example, while women were 9 percent less likely than men to participate in the labor force in Cambodia in 2008, in Sri Lanka this differential was 23.2 percent in 2011. In general, in Cambodia women were 9–10 percent less likely to participate in the labor force than men over the 1996–2011 period. The gap slightly narrowed in 2007 (post-MFA) to 7.7 percent, but then picked up to 12.6 percent in 2008. In Sri Lanka, the labor force participation of women was

about 20 percent lower than of men over the 1992–2002 period, but the difference increased to 28 percent in 2006 and remained around 22–23 percent between 2008 and 2012. Age and education were associated with a higher probability of labor force participation in both countries. On the other hand, married individuals were less likely to be economically active compared to the never married group.

Table 10. Marginal Effects for Labor Force Participation, Cambodia

	1996	1999	2004	2007	2008	2009	2010	2011
Female dummy	-0.086***	-0.108***	-0.089***	-0.077***	-0.126***	-0.087***	-0.105***	-0.090***
	(0.006)	(0.007)	(0.004)	(0.010)	(0.012)	(0.006)	(0.009)	(0.009)
Age (years)	0.018***	0.021***	0.027***	0.025***	0.030***	0.034***	0.041***	0.040***
	(0.001)	(0.002)	(0.001)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)
Age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (years)	0.004***	0.032***	0.003***	0.026***	0.017***	0.010***	0.013***	0.016***
	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Married dummy	0.091***	-0.108***	-0.101***	-0.118***	-0.097***	-0.104***	-0.099***	-0.137***
	(0.009)	(0.012)	(0.006)	(0.016)	(0.018)	(0.009)	(0.013)	(0.014)
Widowed dummy	0.255***	0.002	0.044	-0.002	-0.004	0.017	0.031	0.006
	(0.036)	(0.043)	(0.046)	(0.034)	(0.046)	(0.022)	(0.030)	(0.031)
Divorced dummy	0.258***	-0.002	-0.031***	-0.006	-0.027	-0.003	-0.012	-0.019
	(0.019)	(0.017)	(0.008)	(0.025)	(0.030)	(0.017)	(0.022)	(0.023)
Observations	21,629	15,368	46,118	8,934	5,595	19,940	11,801	11,696

Source: Calculations based on the Cambodian Socio-Economic Surveys 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011.
Note: Marginal effects of the labor force participation are evaluated at the mean of the independent variables. Standard errors are in parentheses. Never married is an omitted category for marital status. Standard errors are reported below the estimated coefficients. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.

Table 11. Marginal Effects for Labor Force Participation, Sri Lanka

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2006	2008	2011	2012
Female dummy	-0.199***	-0.190***	-0.206***	-0.194***	-0.197***	-0.187***	-0.182***	-0.199***	-0.195***	-0.205***	-0.212***	-0.280***	-0.222***	-0.232***	-0.237***
	(0.003)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Age (years)	0.056***	0.057***	0.059***	0.058***	0.062***	0.059***	0.059***	0.059***	0.060***	0.058***	0.059***	0.061***	0.054***	0.055***	0.055***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (years)	-0.000	0.002**	0.001*	0.001*	-0.003***	0.000	-0.000	0.002***	0.003***	0.006***	0.002***	-0.000	0.006***	0.005***	0.008***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Married dummy	-0.038***	-0.046***	-0.045***	-0.063***	-0.067***	-0.061***	-0.065***	-0.063***	-0.065***	-0.067***	-0.064***	-0.020***	-0.055***	-0.055***	-0.063***
	(0.004)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)	(0.006)
Widowed dummy	-0.030***	-0.035**	-0.020	-0.056***	-0.036***	-0.031***	-0.042***	-0.026**	-0.018	-0.013	-0.014	0.022*	0.012	0.014	0.014
	(0.009)	(0.014)	(0.016)	(0.013)	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)	(0.014)	(0.012)	(0.011)	(0.017)	(0.013)	(0.012)
Divorced dummy	0.043***	0.013	0.036	0.012	0.006	-0.009	-0.009	-0.006	0.005	0.043*	0.058***	0.084***	0.000	0.084***	0.051***
	(0.016)	(0.026)	(0.032)	(0.028)	(0.021)	(0.020)	(0.019)	(0.020)	(0.021)	(0.025)	(0.021)	(0.019)	(0.011)	(0.022)	(0.018)
Observations	73,503	29,285	28,009	27,419	49,094	46,201	47,898	47,467	47,021	35,789	46,517	60,097	57,135	44,345	48,502

Source: Calculations based on the Sri Lankan 1992–2002, 2008, 2011, and 2012 Labor Force Surveys, and the Sri Lankan 2006 Household Income and Expenditure Survey.
Note: Marginal effects of the labor force participation are evaluated at the mean of the independent variables. Standard errors are in parentheses. Never married is an omitted category for marital status. Standard errors are reported below the estimated coefficients. Statistically significant coefficients at the 10, 5, and 1 percent level are indicated by one, two, and three asterisks respectively.

Overall, the results show that women's labor force participation is relatively constant over time. This suggests that our results are not driven by adjustments along the extensive margin or are **not** affected by unaccounted selection bias.

4.5. Hours

Table 12 shows that from 1996 to 2011 substantial numbers of employees in Cambodia worked more than 40 hours a week. A slightly higher percentage of women worked overtime than men. The percentage of women working more than 40 hours a week increased post-MFA from 68 percent in 2004 to 77 percent in 2011. The proportion fell to 69 percent in 2009. The analysis shows that women who worked overtime on average worked 54 hours a week. There was no significant difference between men and women. Furthermore, table 12 shows that 95 percent of textile and apparel workers worked more than 40 hours a day in 2011. This number was significantly higher than the economy average of 75 percent. We also find that there was a very small percentage of workers below 14 years old—on average less than one percent from 1996 to 2011. The percentage of workers in apparel younger than 14 years old was slightly higher than the economy average, but lower than the agriculture average.

Table 12. Hours Worked in Cambodia

	Percent of workers working more than 40 hours a week							
	1996	1999	2004	2007	2008	2009	2010	2011
Male	60.55	70.82	63.98	72.59	75.09	65.15	70.41	74.04
Female	57.78	71.57	68.37	73.78	77.39	68.90	73.48	77.19
Agriculture	50.08	66.46	60.58	67.93	78.23	50.27	58.00	62.2
T&G	64.89	91.24	95.06	95.57	95.19	89.81	93.5	95.1
All sectors	59.5	71.1	65.8	73.01	75.97	66.73	71.7	75.4

	Percent of children less than 14 years old in the employed population							
	1996	1999	2004	2007	2008	2009	2010	2011
Male	0.27	0.29	0.89	0.51	0.11	0.99	0.73	0.46
Female	0.99	0.28	2.07	1.4	0.37	1.32	1.3	1.08
Agriculture	0.5	0.35	4.42	2.92	0.68	2.35	2.44	2.12
T&G	1.91	0.18	0.34	0.55	0.48	0.87	0.78	0.89
All sectors	0.54	0.29	1.38	0.87	0.21	1.13	0.97	0.74

Source: Calculations based on the Cambodian Socio-Economic Surveys 1996, 1999, 2004, 2007, 2008, 2009, 2010, and 2011.
Note: T&G = textiles and garments.

Table 13 shows that on average in Sri Lanka a smaller percentage of people were working more than 40 hours a week than in Cambodia—47 and 76 percent in 2008, respectively. In Cambodia this share remained roughly the same from 2008 to 2012, while in Sri Lanka it went up to 59 percent by 2012. There was a big difference between the share of men and women working overtime in Sri Lanka—67 and 44 percent in 2012, respectively. Similar to Cambodia, people who worked overtime worked on average 55 hours a week. Also, similar to Cambodia, more people worked overtime in the apparel industry than in the economy overall—75 and 59 percent in 2012, respectively. The percentage of workers less than 14 years old in Sri Lanka is lower than in Cambodia—0.08 and 0.74 percent in 2011, respectively. There were no workers under 14 years old in the textile and apparel industry in 2012. Moreover, the percentage of girls

and boys under 14 years working in Sri Lanka in 2012 was approximately the same—0.05 and 0.06 percent, respectively.

Table 13. Hours Worked in Sri Lanka

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2008	2011	2012
Percent of workers working more than 40 hours a week														
Male	52.34	52.64	54.26	54.05	49.23	46.31	49.48	49.79	48.16	55.43	51.39	52.23	65.80	66.59
Female	38.59	40.31	40.57	40.84	42.89	35.15	36.07	36.64	36.99	41.16	37.60	35.75	43.33	43.61
Agriculture	35.86	36.25	37.17	35.08	37.49	29.68	32.56	33.58	30.36	33.81	30.21	32.35	43.00	43.27
T&G	57.02	65.56	63.69	68.76	64.36	59.46	63.60	63.08	62.03	68.57	66.60	62.28	72.99	74.78
All sectors	48.60	49.06	50.24	50.13	47.24	42.82	44.98	45.46	44.44	50.86	46.91	46.61	58.51	59.30
Percent of children less than 14 years old in the employed population														
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2008	2011	2012
Male	0.26	0.17	0.23	0.11	0.26	0.15	0.47	0.49	0.23	0.18	0.15	0.15	0.10	0.05
Female	0.50	0.47	0.31	0.21	0.24	0.10	0.63	0.61	0.38	0.33	0.29	0.10	0.05	0.06
Agriculture	0.21	0.15	0.2	0.11	0.38	0.22	1.02	1.07	0.55	0.49	0.5	0.43	0.22	0.05
T&G	0	0	0	0	0	0	1.1	0	0.75	0	0.24	0	0	0
All sectors	0.32	0.26	0.26	0.14	0.25	0.14	0.53	0.53	0.28	0.23	0.2	0.14	0.08	0.06

Source: Calculations based on the Sri Lanka 1992–2002 2008, 2011, and 2012 Labor Force Surveys.
Note: T&G = textiles and garments.

Employment fluctuates with changes in labor demand, suggesting imperfect mobility between industries. Working conditions fluctuate less over time, suggesting that our model which focuses on wage changes in the context of imperfect labor mobility is not at odds with the labor market characteristics of Cambodia and Sri Lanka.

Table 14 shows the regression results using the hourly wages for both Cambodia and Sri Lanka. The qualitative results are similar. The higher apparel prices in the MFA period are characterized by higher industry-specific wage premiums and smaller male-female wage differences. After the MFA, when apparel prices were lower, the apparel wage premiums are lower and the male-female wage gap is larger. These results are consistent with the hypothesis

that changing apparel prices have general-equilibrium effects on the male-female wage differential and on women's wages throughout the economy (not just in apparel).

Table 14: Short and Long Run Using Hourly Wages

Short and Long Run	Cambodia		Sri Lanka	
	(1)	(2)	(1)	(2)
VARIABLES	log hourly wage	log hourly wage	log hourly wage	log hourly wage
female	-0.193***	-0.295***	-0.546***	-0.538***
	(0.020)	(0.031)	(0.022)	(0.022)
age	0.042***	0.043***	0.146***	0.147***
	(0.004)	(0.004)	(0.006)	(0.006)
age2	-0.001***	-0.001***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
education	0.026***	0.026***	0.045***	0.045***
	(0.001)	(0.001)	(0.001)	(0.001)
T&G dummy	0.334***	-0.055	0.005	0.021*
	(0.027)	(0.065)	(0.010)	(0.012)
1999-2004 dummy		-0.049**		0.070***
		(0.024)		(0.007)
2005 and above dummy	0.279***	0.241***	-0.002	0.028***
	(0.015)	(0.024)	(0.007)	(0.008)
T&G*(1999-2004 dummy)		0.492***		-0.042**
		(0.078)		(0.019)
T&G*(2005 and above dummy)	-0.237***	0.217***	-0.024	-0.042*
	(0.033)	(0.076)	(0.022)	(0.023)
female*(1999-2004 dummy)		0.144***		-0.025**
		(0.034)		(0.013)
female*(2005 and above dummy)	-0.020	0.085**	-0.010	-0.019
	(0.023)	(0.033)	(0.013)	(0.014)
Hazard ratio	0.073	0.068	0.682***	0.685***
	(0.053)	(0.053)	(0.043)	(0.043)
Constant	5.823***	5.792***	0.199	0.171
	(0.126)	(0.130)	(0.144)	(0.144)
Observations	31,729	31,729	146,635	146,635

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Conclusions

Our results contribute in several ways to the debate surrounding the value of apparel exports and employment for women in developing countries. First, we demonstrate that apparel workers earn significant wage premiums relative to their other options in the economy. Especially in Cambodia, these premiums increased significantly when Cambodia started exporting apparel. Second, we show that women's wages relative to men (the gender wage gap)

follow changes in apparel prices in ways consistent with theory. Third, we show that changes in apparel prices are not followed by significant changes in our measures of hours or adjustments along the extensive margin for women.

Our results also contribute to the broader debates surrounding trade and wages and the effects of globalization on women. We demonstrate that a Heckscher-Ohlin approach which differentiates males and females as separate factors may be a fruitful alternative to discrimination models or those that analyze the effects of globalization on women in terms of skill. Under the assumption that women comprise a more apparel-specific labor input than men and that the apparel sector is a female-labor-intensive sector, the simple theoretical model predicts that a negative price shock will translate into a relative decline in apparel wages compared to other industries in the short run and a relative decrease in female wages compared to male wages across all industries in the long run.

The increased competition in apparel exports after the MFA phase-out drove down the unit values of apparel both in Cambodia and Sri Lanka. The empirical results of the post-MFA changes support the theoretical predictions. Workers, the majority of whom are female, in the apparel industry were receiving a premium comparable to that of an average worker. This premium decreased in both countries right after the MFA phase-out, but it slightly recovered in the following years. Male-female wage differentials were declining under the MFA in both countries. The gap, however, widened right after the MFA phase-out but later decreased. Finally, in terms of a very narrow measurement of working conditions, we found that substantial numbers of people were working more than 40 hours a week in apparel in both countries—95 percent in Cambodia in 2011 and 75 percent in Sri Lanka in 2012. On average, people working overtime were working 55 hours a week. On the other hand, only 0.9 percent of apparel workers

in Cambodia were younger than 14 years and there were no apparel workers under 14 years in Sri Lanka.

The finding of significant apparel wage premiums that are linked to apparel prices suggests economic opportunities for women in the formal labor market. Further research is necessary to identify the potential development effects of such employment and to thoroughly compare the benefits documented in this paper with the costs that may come with apparel jobs.

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Notes

[1] Galor and Weil (1996) illustrate the positive feedback of women's labor force participation on development. Anderson and Eswaran (2009) show that women's employment apart from their husbands contributes to female autonomy. Duflo (2012) provides an overview of the academic literature. The 2012 World Development Report, *Gender Equality and Development,* argues that women's economic empowerment in the form of gender equality "contributes to economic efficiency and the achievement of other key development outcomes." U.S. Secretary of State Hillary Clinton stated at the APEC Women and the Economy Summit (September 16, 2011 at the Westin Saint Francis Hotel, San Francisco, California; see http://fpc.state.gov/172610.htm for the full remarks) that "the increase in employment of women in developed countries during the past decade has added more to global growth than China has."

[2] Previous papers took very different approaches to the question of trade and gender inequality, but also found contrasting results. The literature first built upon Becker's (1971) discrimination model, which predicts that trade liberalization will increase competition and reduce the employer's ability to discriminate, leading to a smaller gender wage gap. Black and Brainerd (2004) found that increased international trade in the United States led to falling gender wage gaps. Artecona and Cunningham (2002) studied Mexico and found results consistent with Black and Brainerd (2004) but not statistically significant at conventional levels. Berik et al. (2004), on the other hand, found evidence that increasing trade openness was associated with higher gender wage gaps in Taiwan, China and the Republic of Korea between 1981 and 1999. Menon and Rodgers (2009) add to this pool of evidence, finding that increasing openness to trade was associated with larger gender wage gaps in India's concentrated manufacturing industries between 1983 to 2004.

[3] Most studies find little support for the assumption that females could be treated as unskilled workers (Domínguez-Villalobos and Brown-Grossman 2010).

[4] http://www.cnn.com/2013/05/13/world/asia/bangladesh-building-collapse/index.html

[5] Prominent examples include Artuc et al. (2010) and Artuc (2012), Felbermayr et al. (2008), Davidson et al. (2008), Helpman (2010), and Dix-Carneiro (2010).

[6]Authors' calculations using data from World Development Indicators from 2009.

[7]Data from household surveys described later in the text.

[8]The goal of the MFA was to help industrialized countries adjust to the rising production capacity of developing countries. Under this arrangement, textile and clothing quotas were negotiated bilaterally. On January 1, 1995, the MFA was replaced by the Agreement on Textiles and Clothing (ATC), which brought the MFA under the rules of the World Trade Organization (WTO). As a transitional instrument, the ATC established a time frame to eliminate quotas and integrate clothing and textiles into the 1994

rules of the General Agreement on Tariffs and Trade (GATT). After the termination of the MFA in 1995 and the ATC in 2005, trade in textile and clothing was no longer subject to quotas, and is governed now by general rules of the WTO and the GATT.

[9] For example, in 2000 China's market share of world apparel exports was 24.8 percent, Cambodia's share was 0.6 percent, and Mexico's was 4.6 percent. In 2008, the Chinese market share of world apparel exports was 38.8 percent, an increase of 50 percent as compared to 2004. The Cambodian market share doubled over the same time period and accounted for 1.2 percent of world apparel exports. However, the Mexican share declined threefold in that period, and in 2008 it constituted only 1.4 percent of world apparel exports (Lopez Acevedo and Robertson 2012).

[10] The apparel wage premium is defined as the difference between the conditional mean wage in the economy and the conditional mean wage in the apparel sector.

[11] A common assumption for the productivity parameter is that it follows a Pareto distribution. The Pareto and the exponential distribution are closely related. If x has a Pareto distribution with a minimum of a then $y = \log\left(\frac{x}{a}\right)$.

[12] Juhn et al. (2014) allow for differences in technology to affect relative factor demands.

[13] Consolidating the apparel industry in Sri Lanka meant concentrating apparel production in a smaller number of plants, mostly the larger enterprises. This phenomenon was accompanied by a decrease in the number of small firms and overall employment.

[14]This decline in Sri Lanka's exports was related to lower demand in developed countries, but more importantly to the bomb attacks at the Colombo International Airport in July 2001 that triggered the imposition of war-risk insurance charges (Kelegama and Wijayasiri 2004). The reduction in orders and escalating insurance costs hit the industry severely, and as a result several small- and medium-sized enterprises closed in the early 2000s.

[15] Due to heterogeneity of textile and apparel products, there is no unique apparel or textile price. Following Harrigan and Barrows (2009), we use derived unit values to proxy for output prices. The unit values are derived by dividing total value of apparel exports by total volume of apparel exports.

[16] The logarithm of wages is measured as the logarithm of real monthly individual labor income in 2005 prices.

[17] The number of hours matters to explain earnings but it could be argued that this variable is endogenous. One approach is to use the information on hours to compute labor earnings on an hourly basis. However, the hours data are particularly poor in our survey data: many seem to be missing, and salaries are generally set as monthly earnings particularly in Cambodia.

[18] Industry dummies include 15 categories: Agriculture and Forestry; Mining; Food, Beverage, and Tobacco; Textile and Apparel; Wood; Other Manufacturing; Utilities; Construction; Sales; Transport; Financial, Insurance, and Real Estate; Public Administration; Social Services; and Other Services. An omitted category is Agriculture and Forestry.

[19] Occupation dummies are according to 1-digit ISCO-08; the omitted category is Managers.

[20] The possibility that the women choosing the T&G sector are different cannot be ruled out in principle, and deserves some empirical consideration. One way to approach this would be to identify variables that would condition the selection into T&G do not affect wages. Having siblings may be a good measure. We tried identifying the selection equation on siblings as a separate exercise. However, this variable is not available in the data for either country.

[21]Several papers split the sample (Blau et al. 2016) between male and females. This is the Oaxaca-Blinder (OB) decomposition that separates the wage gap into observed and unobserved components. We are not concerned with the unobserved portions. Combining the sample allows us to compare male and female wages directly before, during, and after the end of the MFA.

[22] Another important non-monetary dimension of a job that needs consideration is formality, such as benefits and type of contract. Not everybody working in a formal firm is a formal worker, and these other non-monetary dimensions are important to assess who is really better off. Unfortunately, our household surveys do not allow us to have more specific information on benefits and type of contract beyond the measurements of working conditions described in the previous section.

[23] The results present T&G relative to the "rest" using grand means. This makes the omitted category irrelevant, as it recalculates all of the industry dummy variables as the difference between each industry's mean wage and the overall average wage in the economy.