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# Global Apparel Production and Sweatshop Labor: Can Raising Retail Prices Finance Living Wages?

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***GLOBAL APPAREL PRODUCTION AND SWEATSHOP LABOR:  
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**GLOBAL APPAREL PRODUCTION AND SWEATSHOP LABOR:  
CAN RAISING RETAIL PRICES FINANCE LIVING WAGES?**

***ABSTRACT***

This paper provides some empirical evidence on issues raised by the global anti-sweatshop movement. We first consider the relationship between wage and employment growth, finding no consistent trade-off between them. We then measure the share of labor costs in the production of garments in the United States and Mexico. We find that the retail price increases necessary to absorb the costs of substantially raising wages are small, well within the range of price increases that polls suggest U.S. consumers are willing to pay. We close by considering some implications of these results.

**Keywords:** Global sweatshop labor; empirical analysis

**JEL Classifications:**

F0 (*International Economics: General*)

J3 (*Wages, Compensation and labor Costs*)

O19 (*International Linkages to Development; Role of International Organizations*)

## **1. Introduction**

A movement to oppose sweatshop labor in the production of clothing and footwear began in the United States in the mid-1990s.<sup>1</sup> The movement has been highly successful in raising awareness about harsh conditions experienced by apparel workers throughout the world, including the United States, but most especially less developed countries. Some basic facts are becoming increasingly well-documented. Concerning the United States itself, the Government Accounting Office reported in 1994 that “sweatshop working conditions remain a major problem in the U.S. garment industry, according to the experts contacted. They say working conditions, in many cases, have worsened over the last few years. In general, the description of today’s sweatshops differs little from that at the turn of the [20<sup>th</sup>] century (U.S. Department of Labor, n.d. p. 3).” As regards developing economies, recent studies sponsored by major U.S. universities as well as a major report issued by the International Labor Office have all found that serious workplace abuses and violations of workers’ rights are occurring in the garment industry throughout the world (see, for example, O’Rourke 2000, Appelyard et al. 2000, ILO 2000).

U.S. consumers have been responsive to these findings. Since 1995, three separate research organizations have conducted surveys on consumer attitudes towards purchasing products made under sweatshop conditions.<sup>2</sup> The surveys consistently find that most consumers have a strong preference to purchase products made under “good” working conditions as opposed to sweatshop conditions, and are generally willing to pay more to support their preferences. For example, the most recent of these surveys found that on average, consumers said they were willing to pay 28 percent more on a \$10 item and 15 percent more on a \$100 item in support of their preference for products made under good conditions (including as zeros the 19 percent of

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<sup>1</sup> The emergence of this movement is described in Shaw (1999) and, more briefly, Elliot and Freeman (2000). A parallel movement for “living wages”—that is, for minimum wages significantly higher than the sub-poverty level set in the federal law—has also spread widely throughout the United States, with various forms of living wage laws having passed in roughly 50 municipalities by mid-2001. See Pollin and Luce (2000).

consumers who said they were unwilling to pay extra for the assurance; Elliot and Freeman 2000, p. 2).

Reflecting these consumer attitudes, and in particular in response to pressure from student activists, many colleges and universities have taken positive steps toward regulating workplace conditions for the firms that produce their licensed logo apparel, establishing so-called “codes of conduct” for the firms that are awarded licenses. The broad aim of these codes of conduct is straightforward: to enable garment workers to work under decent conditions, exercise basic human rights, and earn living wages. These codes therefore espouse the same goals as the broader movement in favor of global labor standards (see, for example, OECD 1996).

But trying to put such measures into practice raises many difficult questions, especially as regards the setting of a “living wage.” Is the standard for a living wage a level that would apply to a single worker or to a family? Should the wage be set to bring the workers and their families only to a minimum subsistence level, or to a somewhat more generous, though still modest, basic needs standard? To what extent should the attainment of the minimum decent living standard, however defined, be achieved through increased social welfare spending as opposed to higher wages? Should codes of conduct be designed so that they benefit only the workers engaged in the manufacturing of the licensed apparel, or should the aim of such codes be to also raise general wage and workplace norms within a locality and region?

These questions, in turn, serve as background to perhaps the most vexing issue of all: whether implementing higher workplace standards and living wage policies would induce negative unintended consequences that would bring more harm than good to the very low wage workers these policies aim to benefit. Very much in the vein of considerations about the effects of raising minimum wages or taxes within a given region, three interrelated unintended consequences are of greatest concern: 1) apparel manufacturers would lay off a significant

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<sup>2</sup> Marymount University Center for Ethical Concerns (1999), University of Maryland Program on International Policy Attitudes (2000), and Elliot and Freeman (2000).

fraction of their now more costly workforce; 2) manufacturers would relocate from existing production sites in search of locations where they can maintain lower labor costs; and 3) developing countries that have been competing successfully in the global garment industry on the basis of low labor costs would lose this advantage. This loss, in turn, would damage the broader development strategy of these countries.<sup>3</sup>

Of course, to adequately address any of these questions is the work of a broad research program, not a single study. This paper has a more modest goal: to provide some basic empirical parameters for thinking about these issues, particularly the likelihood that the negative unintended consequences of establishing living wage standards in the global garment industry might prove to be the predominant outcome of any such interventions.

We focus on three specific issues in addressing this broad empirical question. In the next section, we present a range of multi-country empirical evidence on the relationship between wage growth and employment growth in the global garment industry. We examine this to address the concern that any given country or region would forfeit its competitiveness by allowing labor costs to rise relative to other countries or regions. The ILO study of the global garment industry cited above found that labor costs are an important but not decisive factor in establishing the competitiveness of a region in the global garment industry. The results of our formal investigation are consistent with the ILO's descriptive evidence. We find that, in examining the recent comparative national data on the garment industry, no statistically significant relationship exists in the relative growth rates of real wages and employment in the various national industries when other factors that can influence employment levels are allowed to vary along with wages.

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<sup>3</sup> Such concerns are at the heart of the letter to college and university presidents written by the Academic Consortium on International Trade (ACIT), which was signed by 352 economists and other academics (see the ACIT website <http://www.spp.umich.edu/rsie/acit/>, for further information). This letter generally reflects a mainstream pro-free trade perspective, derived from the Heckscher-Ohlin model of comparative advantage, on the benefits accruing to all countries engaged in international trade, and the corresponding losses that result from trade restrictions. However, concerns about possible negative effects from establishing labor standards in developing countries extend beyond such standard perspectives. See Singh

In section three, we attempt to measure the share of labor costs in the production of specific garments as they are produced in both the United States and Mexico. Based on this information, we then calculate the impact of a significant wage increase on the overall costs of producing these items, holding all else equal. We also calculate the extent of these cost increases relative to the average price at which these garments are sold in the U.S. retail market. We find in both the cases of U.S. and Mexican production, the cost increases resulting from even a 100 percent wage increase would be small relative to the retail prices of these items—ranging between about 2 and 6 percent, depending on the specific garment being produced, whether the garments are produced in the U.S. or Mexico, and which groups of workers are covered by the raise. These results are especially interesting when placed alongside the recent polling data discussed above that finds U.S. consumers generally willing to pay between 15-25 percent more to ensure that products not be made under sweatshop conditions. The overall point is that the retail price increases that would be necessary to fully absorb the costs of substantially raising wages and/or improving working conditions for production-level workers in the apparel industry are well within the range of price increases that polls suggest U.S. consumers are willing to pay.<sup>4</sup>

Of course, this result does not lead to a specific policy proposal, but only provides some empirical parameters for examining various policies. Indeed, establishing that retail price increases could fully cover the added costs of producing garment under significantly improved conditions still does not mean that using higher retail prices in this way is a realistic anti-sweatshop strategy. In section four, we therefore briefly consider three issues that arise when

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and Zammit (2000) for an alternative, but still critical perspective on the subject. Featherstone and Henwood (2001) provides a good overview of the controversy on the issue among academics.

<sup>4</sup> Of course, consumers may not be willing to help finance good conditions for garment workers when faced with the prospect of actually spending more money rather than just responding to a poll. However, as Elliot and Freeman argue, “a wide body of experimental data and market behavior in other domains suggests that people care enough about the conditions of others to behave as they say they would in surveys,” (2000, p. 3). Elliot and Freeman then cite a range of evidence to support this claim. Unfortunately, studies of actual price elasticity in the U.S. retail clothing industry are not helpful here. The most important reason is that these studies do not control in any way for the central issue at hand, which is whether people will pay more for the specific purpose of raising the well-being of apparel industry workers.

considering the viability of this strategy, including: 1) the likelihood that revenues generated by retail price increases would actually get passed back to the production-level workers as higher wages; 2) the effects of assuming that wage increases should be extended to all low-wage workers at all stages of the commodity chain, not just production-level workers; and 3) the effects on consumers in countries outside the U.S., and especially developing countries, of increases in garment retail prices.

In taking account of these considerations, it becomes clear that using retail prices as a redistributive mechanism is a more complex matter than our simple exercise, by itself, conveys. Nevertheless, we still argue that the approach is viable. Indeed, we suggest that to the extent the approach is inadequate in itself as a means of financing non-sweatshop working conditions in developing countries, it can still serve as a basis for affirming that the well-being of working people should be a central feature of a country's overall development strategy. The paper then concludes by briefly considering how our results may shed light on the issues of establishing labor standards beyond the apparel industry alone, and on possible ramifications for worker organizing efforts.

Before proceeding, one prefatory note is in order on the structure of the apparel industry and corresponding use of terminology in the paper. Firms known as “manufacturers” in the apparel industry—such as Nike, Levi-Strauss, and Reebok—generally are not themselves directly responsible for the production of apparel. Rather these firms hire contractors to produce garments, and the contractors in turn frequently hire subcontracting units. Given this, for the sake of clarity, we refer in the paper to the “production” rather than the “manufacturing” of garments. Our references to “manufacturers” are therefore to firms, such as Nike, that are responsible for the design and promotion of apparel items, but not generally their production.<sup>5</sup>

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But in addition, recent elasticity estimates vary widely, with short- and long-run estimates ranging by a factor of 10 between -0.19 and -1.9 (Bryant and Wang 1990, Mokhtari 1992, Norum 1990).

<sup>5</sup> See Bonacich and Appelbaum (2000), Elliot and Freeman (2000), and Abernathy et al. (1999) for discussions of the industrial organization of the apparel industry.



## **2. Wage and Employment Growth in a Global Setting**

Labor markets broadly operate in conditions of a downward-sloping demand curve in wage/employment space. That is, all else equal, if wages rise, the demand for labor will fall. If this simple relationship were the only factor determining employment levels, it would follow that raising wages for apparel workers in any region of the world—or even raising labor costs by improving the workplace environment alone—should lead to job losses in that region.

However, even at the level of theory, it does not follow that wage increases must engender employment losses. This is because we would not necessarily expect everything else to be equal when wage increases occur. Indeed, wage increases are likely to arise in correspondence with other changes in workplace or labor market conditions that can cause the labor demand curve to shift. These include increases in productivity, improvements in the quality of products, improvements in firms' marketing capacity, and overall expansion of product market demand. All of these broad influences can also be combined in various ways. The overall result is that, even holding to the assumption of a normal downward sloping labor demand curve, the actual relationship between wage increases and employment growth will be indeterminate when factors other than wages alone are allowed to vary. This will hold true for a given country or region over time or between countries and regions cross-sectionally.<sup>6</sup>

To consider this general perspective more formally as it applies to the global apparel industry, we present below some evidence on the relationship between real wages and employment growth for a range of 43 countries throughout the world.<sup>7</sup> The sample is limited to these 43 countries because they are the only ones with adequate data for conducting our analysis. Nevertheless, these 43 countries represent a broad sampling of regions and levels of development. For example, 19 of the countries in the sample are members of the OECD and 24 are non-

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<sup>6</sup> Abernathy et al (1999) provide an extensive discussion of the increasing importance of “lean” manufacturing and retailing in the garment industry as a primary determinant of competitive success. This theme is also discussed in ILO (2000).

members. In terms of the range of employment levels, 12 of the countries have over 100,000 workers employed in the apparel industry, 15 countries have been 10-99,000 apparel workers, and the remaining 16 have between 1,000 – 9,999 apparel workers.<sup>8</sup> There is also a wide dispersion by region: 17 are from Europe and North America, 10 are Asian, 11 are from Latin America, and 5 are African.

We begin in Table 1 by presenting regression results with four specifications of a bivariate equation testing employment growth as a function of real wage growth. We tested this relationship over two time periods, 1993-97 and 1988-97; and by considering all countries in the sample, and the non-OECD countries alone. Sample sizes fell somewhat for the 1988-97 period due to gaps in the data set.

#### TABLE 1 BELONGS HERE

As we see, in three of the four specifications, the coefficient value on real wage growth is negative, while in one case, the non-OECD countries over 1988-97, the coefficient is slightly positive. In all cases, however, the t-statistics on the coefficient are not close to being significant according to standard significance thresholds. At most, then, we are observing a weakly negative relationship between real wage and employment growth over our sample of countries, as any potential wage-growth/employment-growth trade-off is clearly subject to change as one moves between countries, regions, and time-periods.

This finding from the regression results become even more evident in Figure 1, where we examine the scatter diagrams derived from each of our four data samples. The plotted lines running through these graphs are the fitted values derived from “nearest neighbor regressions,” a non-parametric technique which generates clear visual perspectives on the relative movements of

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<sup>7</sup> The full list of countries in the sample and the employment and wage growth data from which the figure are derived are available from the authors.

<sup>8</sup> We excluded from the sample countries whose apparel industries employed less than 1000 workers in 1997.

variables across a data sample.<sup>9</sup> Considering first the regions of negative growth rates in each of the data samples, we broadly observe direct co-movements between employment and real wage growth, as we proceed from higher to lower negative growth rates of both employment and real wages. Moving into the region of positive real growth rates in each of the graphs, employment and real wage growth vary between inverse and direct co-movements at different points and to different degrees. At the highest rates of real wage growth, employment growth does decline sharply for the full sample and the non-OECD sample over 1993-97. But this relationship does not hold up in the 1988-97 samples. Thus, again, we observe no strong and consistent pattern even at high rates of real wage growth. Still the data do suggest a weak relationship in which very rapid rates of real wage growth occur in correspondence with declining rates of employment growth.

#### FIGURE 1 BELONGS HERE

These findings are further supported by the summary statistics presented by region and size of industry in Table 2. Considering first the countries with over 100,000 employees, in all but one of the cases, the mean values for wage and employment growth are both positive. However, in most cases, standard deviations around these mean values are larger than the means—conveying, again, a wide variety of country experiences among those with relatively large apparel industries. The general patterns for mean values by regions change when we examine countries with smaller-sized industries. In countries with apparel employment both between 10,000 – 99,000 and 1,000 – 9,999 workers, we do observe some cases where the mean values of wage and employment growth vary inversely. But again, standard deviations around these means are generally large.

#### [TABLE 2 BELONGS HERE]

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<sup>9</sup> The nearest neighbor regression fits a regression utilizing only a subset of observations which lie in a neighborhood of the point to fit the regression model. The bandwidth span for the regressions presented was 0.3. However, the basic visual image does not change through changing the bandwidth span to 0.15 or

We do not attempt here to sort through how various influences combine in different countries such that no statistically significant inverse relationship between employment and wage growth exists in our sample. But as one simple point among other considerations, we observe in our sample of countries that wide differences also exist in terms of the share of total value added received by labor (measured as total labor costs/value added). In Table 3, we provide summary statistics on this ratio for the full sample and broken down according to OECD membership; full data for all countries is shown in the appendix. The key set of figures here are the large values for standard deviations. This means that the various national apparel industries operate with wide differences in labor shares and, correspondingly, profit shares. In other words, there is no fixed value, or even a narrow range of values, as to what constitutes a reasonable rate of return among national apparel industries. Moreover, these differences did not narrow over the decade between 1987-97.

[TABLE 3 BELONGS HERE]

For the purposes of this study, it is thus sufficient that we have established that countries that experience relatively rapid wage growth in their garment industry do not necessarily suffer in terms of employment growth. This suggests, more broadly, that living wage/anti-sweatshop stipulations can be implemented in the apparel production industry within any given country or region without necessarily creating employment losses for that country or region. What will happen in any given situation will rather depend on other factors. We now consider one such potential factor: how much retail prices would have to rise to fully absorb wage increases at the point of production.

### **3. Production-level Wage Increases and Retail Price Mark-ups**

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0.45. See Quantitative Micro Software (2000) and Cleveland (1994) for clear presentations on this technique.

We present here figures from the official economic censuses of both the U.S. and Mexico. These sources enable us to calculate labor costs as a share of total inputs in the production of garments in both countries. From these figures, along with data on retail prices for garments, we are able to generate rough order of magnitude estimates of production-level labor costs in the garment industry as a share of retail prices. Based on this ratio, we are then able to consider how much flexibility exists for wage increases for production-level workers that could be absorbed mostly, if not fully, through retail price increases.

By conducting this exercise, we are making no judgments as yet about specific policy interventions—for example, whether wage increases should apply to any given country, or to all countries; or what a viable wage increase should be for a given setting. Rather, we are attempting here simply to provide some sense of the relevant empirical parameters that might help inform the formation of policies.

We begin in Table 4 by considering the production of casual shirts in the United States in 1997.<sup>10</sup> The table first shows that the average non-supervisory worker in the industry earned \$8.53 an hour in 1997. We also see that the unit price of shirts shipped from production was \$7.58.

[TABLE 4 BELONGS HERE]

The rest of the table then shows the shares of all inputs used in generating the total value of the produced shirt. We present these figures both as a proportion of total value, and as a share of the total \$7.58 unit price of the shirt. As the table shows, at the given average wage of \$8.53/hour, the contribution of non-supervisory workers is 11.2 percent of the total value of the produced shirt. This amounts to 85 cents of the shirt's total value at production of \$7.58.

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<sup>10</sup> This definition of “men’s casual shirts” is the average for woven sports shirts, knit t-shirts and tank tops made for outerwear, sweatshirts and other knit shirts, as reported in the U.S. economic census. This category excludes work shirts, because the wage figures for this category are reported separate from the other men’s casual shirt categories.

Supervisory labor contributes another 7.8 percent, or 59 cents, to total value. Overall then, total production-level labor inputs amount to 19.1 percent, or \$1.45 in total value.

Table 5 presents similar figures for production of shirts in Mexico. Though the Mexican census provides less detail on the various factor inputs contributing to total value added, we are able to extract sufficiently detailed figures on wages, labor contribution and unit prices of shirts shipped from the point of production to make direct comparisons with the comparable U.S. figures. As the table shows, the average hourly wage in Mexico for non-supervisory workers was \$0.85 in 1997 dollars,<sup>11</sup> i.e. about 1/10 the average wage rate in the U.S for producers of casual shirts. However, the unit price of the shirt shipped from production is \$4.45, i.e. only about 40 percent less than the U.S. figure for shipment price from production. This disparity between relative U.S./Mexican wages and output prices can be explained by differences in both productivity and domestic input prices. Drawing upon both countries' census figures, we find, as rough measures of relative productivity levels between the U.S. and Mexico, that the rates of both output per employee and value added per employee in Mexican shirt apparel production is only about 12 percent that in the United States. Based on purchasing power parity measures, input prices in Mexico are roughly half those in the United States.<sup>12</sup>

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<sup>11</sup> The 1997 dollar figures for Mexican hourly wages and unit cost of shirts are derived from a 3-year centered moving average of the Mexican wholesale price index divided by the peso/dollar exchange rate. We have performed the currency conversion in this way to smooth out the effects of annual peso/dollar exchange rate and Mexican inflation rate fluctuations. This adjustment is similar to a purchasing power parity (PPP) adjustment. But it differs primarily in its use of the wholesale price index rather than a measure of inflation relevant for a basket of consumption goods. Our main concern here is to measure the costs of Mexican goods for U.S. exporters, and thus the concern with the wholesale price index. The PPP index would be appropriate if we were primarily interested in measuring changes in living standards for Mexican workers.

<sup>12</sup> We note, though, that differences in *levels* of productivity—as opposed to measures of differences in productivity *growth rates*—are highly sensitive to exchange rate conversion issues, so we report these figures only to provide a sense of the issue. A more accurate measure of productivity level differences would be one based on square-meter equivalents or some similar physical measure of productivity. But such measures are not available at the level of industry detail we are presenting here. In addition, it is not precisely accurate to use purchasing power parity measures—which consider price differences for comparable consumption baskets—to measure price differences in inputs of production goods. We make this comparison here only because no better measure exists for the question, while recognizing, again, that we are making only a rough comparative calculation here. Data on productivity growth are from the UNIDO ISIC database.

## [TABLE 5 BELONGS HERE]

The table then shows that non-supervisory workers contribute 11.2 percent to total value of production, which amounts to \$0.50 of the shirt's \$4.45 in total value. Supervisory labor then contributes another 9.1 percent to total value. Total labor, then amounts to 20.3 percent of total value, or \$.90 of the total \$4.45.

The exercise we then perform in Table 6 with these data is simple. For both the U.S. and Mexico cases, we assume a wage increase of 100 percent for production-level workers, then measure the size of that increase on the unit cost of producing the shirt relative to the shirt's retail price. This enables us to calculate a new, marked-up retail price for the shirt, after allowing that the wage increase at the point of production is fully absorbed by consumers at the point of retail sale, and all else remains constant. Considering this exercise from a slightly different angle: Because the wage increases for production-level workers would be fully financed by retail price increases, no other income-earners in the entire garment industry—i.e. neither workers at other stages in the industry nor business owners at any stage of operations—would need to experience an income decline to help finance the production level workers' raises.<sup>13</sup>

## [TABLE 6 BELONGS HERE]

We perform this exercise in two ways. We first assume that only non-supervisory production workers receive the 100 percent wage increase, and then assume that all workers, including supervisors, receive the 100 percent raise.

With this second calculation, we are able to capture the potential "ripple effects" of a wage increase that might be formally extended to the non-supervisory workers only. The ripple effect refers to those wage increases that employers give to employees beyond what might be legally or otherwise formally mandated. Employers give such ripple effect increases to maintain

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<sup>13</sup> We should note, however, that production-level workers would be receiving a *larger relative share of the growing pool of revenue*. Under current industry practices, retailers frequently determine their mark-ups over wholesale prices based on a practice called "keystoning," which generally refers to a doubling of

some measure of pay hierarchy between the lowest-paid workers receiving the mandated increase, and those earning something above the new minimum. In this garment industry case, most supervisory employees—and especially professional and managerial staff—would generally be earning significantly above the minimum received by non-supervisory workers. Yet one cannot know how large their potential ripple effect raises are likely to be, precisely because such increases are non-mandated. But by extending the 100 percent wage increase to all employees at the point of production—regardless of their status within the firm—we are necessarily establishing an outer bound estimate of the potential ripple effect.

By estimating a wage increase at 100 percent, we do not mean to imply that wage increases could readily be increased this much at one time. Nor are we suggesting that a wage increase of 100 percent is the amount needed to bring non-supervisory workers up to a “living wage” standard. We are simply conducting this exercise to observe the extent of such a large wage increase, measuring this impact relative to the size of retail prices.

Starting with the U.S. case in the second column, we see that unit labor costs in production would rise by 85 cents, raising the total cost at production from \$7.58 to \$8.43. Assuming this 85 cent unit cost increase is completely passed through to the point of retail sale, and all else remains constant, that would mean the new retail price of the shirt is now \$32.85, a 2.7 percent price increase.

If we now allow for the ripple effect wage increases that extend the 100 percent raise to supervisory workers as well, this would raise total production costs by \$1.45 to \$9.03. Again, assuming that these increased labor costs are fully absorbed at the retail level, this would entail a new retail price of \$33.45, a 4.5 percent retail price increase.

In the third column, we present the same exercise for the case of production in Mexico, assuming that the Mexican shirts are then being exported to the U.S. market. In this case, the

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wholesale prices by retailers. Under our exercise, the *percentage markup* through keystoneing would have to decline somewhat for the *level of revenue* to remain constant.



retail price in the U.S. rises to \$32.50, assuming the 100 percent wage increase for non-supervisory workers only. When we extend the 100 percent raise to supervisory workers as well, the total retail price in the U.S. rises to \$32.90, a 2.8 percent price increase.

Are these results for the production of shirts applicable to other garments as well? To provide evidence on this, we present in Table 7 the results of estimating the same 100 percent wage increase for production-level workers relative to U.S. retail prices for seven garments in addition to men's casual shirts. The table first reproduces the figures on casual shirts for the wage increase/retail price ratio, and then shows the same ratio for the seven other garments. In the last row of the table, we then present the average of this wage increase/retail price ratio for all eight garments.

[TABLE 7 BELONGS HERE]

These findings show that our results for casual shirts are consistent with figures for the seven other garments. In the case of U.S. production, the average figure for the wage increase/retail price ratio is 3.0 percent when only non-supervisory production workers receive the 100 percent raise, and 6.0 percent when supervisors are included. Both of these average figures are slightly higher than those for men's casual shirts. We observe similar results with the Mexican data for all eight garments. The wage increase/retail price ratio is 1.8 percent if only non-supervisory production workers receive the 100 raise, and 3.4 percent when raises are extended to supervisors as well. Again, both of these average figures are slightly higher than those for men's casual shirts.

With all of these results, the crucial overall finding is straightforward: that the price mark-ups needed to fully finance 100 percent wage increases for production-level workers are well within the range of price mark-ups that, according to polling data, U.S. consumers say they would be willing to pay to assure that non-sweatshop conditions prevail at the level of garment production.

#### **Section 4. Are Retail Price Mark-ups a Viable Redistributive Strategy?**

Even allowing that only modest retail price increases for garments are needed to finance 100 percent wage increases for production level workers, and that most U.S. consumers tell pollsters that they would be willing to pay somewhat more to insure that garments are made in non-sweatshop conditions, we still are not yet able to conclude that raising retail prices is a realistic anti-sweatshop strategy. Several questions need to be sorted out before we can reach that conclusion. We briefly consider here three such questions: 1) the likelihood that revenues generated by retail price increases would actually get passed back to the production-level workers as higher wages; 2) the effects of assuming that wage increases should be extended to all low-wage workers at all stages of the commodity chain, not just production-level workers; and 3) the effects on consumers in countries outside the U.S., and especially developing countries, of increases in garment retail prices as the basis for financing production-level workers' wage gains.

#### Will Revenues Actually Get Passed Back?

The links between the production and the retail marketing of garments are complex, often occurring among business entities operating in different parts of the world. Nevertheless, if workable methods for monitoring production sites can be established, it is correspondingly realistic to expect that price increases at the level of retail could be consistently passed through to production-level workers.

The garment industry operates through three core links: the contractors, responsible for production; the manufacturers, responsible for design and distribution; and the retailers. Note, again, that the "manufacturers" such as Polo, Ralph Lauren, or Nike, create and maintain labels, but they generally are not directly involved in the actual production of clothing and footwear.

In the contemporary U.S. garment industry, retailers operate with substantial market power, especially relative to manufacturers and contractors rather than with consumers. This is primarily because of the high degree of concentration in the retail industry, with the "lean retailing" revolution, beginning in the late 1970s, only having increased the extent of concentration. For example, as reported by Abernathy et al., between 1977 and 1992, the

percentage of total sales through general merchandising outlets accounted for by the 50 largest general merchandising firms rose by 14.5 percentage points, from 77.3 to 91.8 percent. The four largest general merchandising firms—Sears, Wal-Mart, K-Mart, and J.C. Penny's—themselves accounted for 47.3 percent of sales in 1992 (1999, pp. 75-76). By 1999, the share of total sales of the four largest chains—with Wal-Mart now the largest and Target moving just ahead of JC Penny as fourth largest—rose still further, accounting for 73.2 percent of total general merchandising sales, i.e. an increase of nearly 25 percentage points above the 1992 level (see Fortune Magazine 4/17/00, p. F-64). Measured by sales, Wal-Mart ranked as the second largest corporation in the United States in 1999, and Sears was the 16<sup>th</sup> largest. These major retail firms substantially eclipse even the best-known manufacturers in terms of sales—Wal-Mart's 1999 sales of \$166.9 billion are 19 times larger than the \$8.8 billion in sales by Nike, the largest apparel manufacturer.

While the major U.S. retailers clearly possess substantial market power, the oligopolistic structure of the industry does not preclude strong price competition within this industry. None of the major retailers can expect to raise prices significantly without experiencing consumer defections. This competitive environment could limit the ability of any given retailer to raise prices. But even recognizing this, it is also true that the competitive success of the major retailers depends less on its specific pricing strategies than on other factors, including quality of service, advertising, responsiveness to consumer demands, adoption of information technologies, and managing supply chains.<sup>14</sup> The recent bankruptcy of K-Mart Corporation is instructive in this regard. Analysts point out that K-Mart lost market share to Wal-Mart not because it ignored price

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<sup>14</sup> These issues are discussed at some length in Abernathy et al. (1999), pp. 39-54. See also the trade journal *Retail Merchandiser* (March 2002, pp. 23-25) which states that Wal-Mart's success has been largely due to its innovations in distributive systems which, in turn, have generated productivity improvements.

competition, but rather because it did not keep pace along the other crucial dimensions, such as inventory control and responsiveness to customers.<sup>15</sup>

Another aspect of the competition among retailers needs to be especially emphasized here, which is their distribution arrangements allowing them to carry merchandise of the most popular manufacturers.<sup>16</sup> This provides the popular name-brand labels with a significant degree of market power as well, which they fight to maintain and strengthen through massive expenditures on image-enhancing advertising<sup>17</sup>

All of this would suggest that price mark-ups could be sustainable at the retail level. However, it still would not necessarily follow that the additional revenues generated by these mark-ups would get passed back to production level workers, rather than absorbed at either the retail or manufacturing levels. This is especially so, given that business owners would of course prefer that they, rather than production workers, receive the extra revenues generated by higher retail prices.

At the level of production, contractors and subcontractors exert generally no market power. They compete substantially on the basis of price. But as we discussed in Section 2 and as Abernathy et al. (1999) consider at length, labor costs and price are not the only factors in establishing a competitive production site in the garment industry. Other crucial considerations are quality, ability to switch production lines quickly, and proximity to retail markets. Of course production costs remain central for establishing competitiveness, and unit labor costs, as figures from our previous section document, are a major component of overall production costs. Moreover, contracting firms will generally try to drive down unit labor costs to the maximum

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<sup>15</sup> See, for example, *Business Week*, 1/28/02, p. 106, “K-Mart: The Flood Waters are Rising.”

<sup>16</sup> This was well-illustrated by the lawsuit settled in January 2001 between the clothing designer Calvin Klein and Warnaco, the firm that manufactures and distributes Calvin Klein jeans. Klein had sued Warnaco on the grounds that Warnaco had hurt his brand by distributing jeans to warehouse clubs, such as Costco and Sam’s. The suit was settled when Warnaco agreed to primarily distribute Klein jeans through midprice distribution channels, such as department stores (*New York Times*, 1/23/01).

<sup>17</sup> According to *Women’s Wear Daily*, total advertising expenditures for the apparel, footwear and accessories industry in 1997 was \$1.4 billion (5/15/98, p. 4). These figures do not include the

extent, especially when the firms are relatively less competitive on product quality, proximity to markets and related non-price considerations.

Considering all of these factors in the industry, establishing a framework for revenue pass-backs from retail to production workers still appears feasible. Two factors appear crucial here: that retailers and manufacturers do exert market power over contractors; and that much of the success of business at these levels is determined by creating positive brand images. If the retailers and manufacturers conclude—no doubt with reluctance—that their marketing efforts are damaged by negative associations between themselves and sweatshop labor conditions, they have the market power to impose a system of regulation on their contractors. This is the process that is now occurring with the U.S. college logo apparel market in setting up so-called “codes of conduct,” and financing the operations of agencies that monitor compliance with these codes. The arrangements that evolve in this could be generalized to other retailers and manufacturers. In short, the rising concentration of retailing power, combined with importance of positive brand images to the retailers, creates an increasingly favorable environment for establishing codes of conduct that reach back to the level of apparel production<sup>18</sup>

Perhaps the most challenging issue here is whether contractors would adhere to such codes of conduct in practice, regardless of whether they have accepted them in writing. For the college logo apparel market alone, somewhere between roughly 3,000 and 6,000 production sites operate throughout the world.<sup>19</sup> It is not practical to expect that monitoring agencies could

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manufacturers’ expenditures on endorsements, such as Nike’s \$20 million arrangement with Michael Jordan.

<sup>18</sup> The importance for manufacturers of effective methods of monitoring was expressed by Doug Cahn, director of Reebok’s Human Right’s Program, as follows: “Paying money up front (for monitoring) helps protect against criticisms of your brand image...because the brand image stands for something that can’t be (allowed to) erode,” (quoted in Burnett and Mahon 2001, p. 71).

<sup>19</sup> The actual number of sites in the college logo apparel market is difficult to establish with confidence. As one solid piece of evidence, the University of North Carolina-Chapel Hill alone contracts with 2,502 separate sites throughout the world, while the Collegiate Licensing Company—one of the two major firms licensing collegiate logo apparel—contracts with approximately 5,725 sites. But there is likely to be considerable overlap in the production sites used by a major university, such as North Carolina, and other institutions. We are grateful to Rutledge Tufts, Director of Auxiliary Enterprises and General

maintain contact with all of these sites on a regular enough basis to assure compliance with the codes at all, or even most, of them. What this implies is that production sites will need to be monitored largely by the on-site workers themselves; that is, monitoring agencies need to develop effective procedures to hear the voices of the on-site workers. Such an approach to monitoring is in the process of being implemented by the Workers Rights Consortium, the recently formed monitoring entity that has emerged out of the anti-sweatshop protest movements. The success of this monitoring methodology is likely to be crucial to the success of the entire anti-sweatshop monitoring enterprise.<sup>20</sup>

#### Extending Wage Increases Beyond Production Workers

While it may be realistic that retail price increases could be passed back to production-level workers, another question necessarily follows: why should only the workers at the level of garment assembly receive wage increases rather than all low-wage workers at all stages of input production and sales? Of course, there is no logical reason to exclude low-wage workers at different points in the commodity chain from a wage increase financed by higher retail prices. Moreover, production workers in textile manufacturing are likely to make at least as large a contribution to the total value of a fully-assembled garment as those at the point of garment assembly and production. Throughout most of the developing world, wages for textile production workers are also roughly comparable to those in garment assembly.<sup>21</sup> At the level of retail sales in the U.S., the total number of low-wage employees—including sales staff and service employees—is lower, but compensation levels for these employees are roughly comparable to those of U.S. garment workers.

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Administration at the University of North Carolina, for supplying the above information and providing illuminating guidance on this issue.

<sup>20</sup> Burnett and Mahon emphasize the importance of open methods to the success of establishing credible monitoring techniques. They conclude, “Credible arrangements for the monitoring of overseas labor standards will have to be more intrusive, unpredictable, and expensive for the firms being monitored. With spot verification by nonmonitors being so important to consumer trust, openness to this verification becomes a key foundation for ex-ante credibility,” (2001, p. 67).

One simple way to address this concern is simply to allow that, for the case of the U.S., retail prices would have to be raised beyond the 2 – 6 percent increases (depending on whether supervisory workers also receive raises and garments are produced domestically or imported) in order for all low-wage workers at all levels of the commodity chain to receive a 100 percent raise. But even if retail price increases doubled—to a range of between 4 –12 percent—they would still remain within the levels that, according to polling data, U.S. consumers would be willing to pay to insure that garments are made under non-sweatshop conditions.

At the same time, the assumption under which we have been operating thus far—that wage increases should be set at 100 percent across the board—is of course arbitrary. We introduced it simply as a means of illustrating the broad parameters of what is feasible in terms of raising retail prices as a means of financing corresponding wage increases. Again, for the sake of illustration, let us instead assume that wage increases for low-wage workers at all stages in the industry were rather on the order of 50 percent. It is probable that the revenues generated from the roughly 2 – 6 percent retail price increase would themselves be more than sufficient to cover such smaller wage gains for the greater number of low-wage workers now covered. And while such wage increases are obviously only half those for a 100 percent raise, they would still be large enough to significantly raise living standards for most low-wage workers and their families.

#### Raising Retail Prices Outside the U.S.

The exercise we have conducted in the previous section builds on polling data showing that U.S. consumers would be willing to pay higher prices to guarantee that garments not be produced under sweatshop conditions. But even assuming these polling figures are accurate (see footnote 4), they apply to U.S. consumers only. How should we incorporate the situation for consumers in other parts of the world into the exercise?

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<sup>21</sup> In the United States and Europe, textile workers earn, on average 1/3 more than garment assembly workers (ILO, 2000, p. 43; and Statistical Abstract of the United States 2000, Table 1230).

One narrow response is that the price increases needed to cover the higher wages for production workers would apply only to those workers producing for the U.S. market—either domestic U.S. workers or those employed by non-U.S. firms that export to the U.S. This may be a workable, albeit limited, solution to the matter. But it is also the case that many contractors producing for export would expect to operate in more than one national market, not just the United States. Let us also assume, for the sake of argument, that European consumers would hold preferences similar to those in the U.S. regarding garments produced by exporters.<sup>22</sup> This would then mean that contractors producing for the European market would also be able to count on higher revenues to cover wage increases at the point of production.

But it is not realistic to expect that consumers in developing countries would also hold comparable preferences for somewhat higher retail prices to assure non-sweatshop production conditions. Since, by definition, average living standards are much lower in developing countries than the U.S., shifting the burden of the wage increase onto them through higher retail prices might entail a noticeable reduction in their overall living standard.

In fact, however, this is not likely to be a significant consideration. This is because the purchase of garments in developing countries constitutes a relatively small proportion of a household's overall consumption basket. In the case of South Africa, for example, clothing purchases in 1995 amounted to about 4 percent of total expenditures for an average household, and about 5 percent for the poorest 20 percent of households.<sup>23</sup> If we assume that the necessary retail price mark-up is also on the order of five percent to cover the higher wages for production workers—this figure being well on the high end of our estimates of the retail price increases needed to fully cover 100 percent wage increases for production workers—that implies that the

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<sup>22</sup> This assumption is certainly consistent with the core labor standards established by the ILO and, in principle at least, honored by all OECD countries. See OECD (1996).

<sup>23</sup> These data are from "Income and expenditure of households 1995." Statistical Release P0111. September 1997. Pretoria: Statistics South Africa (formerly Central Statistical Service). Table 1. page 5.



even relatively poor households in South Africa would experience a decline in their overall consumption basket of approximately 0.25 percent through the price increase.

More generally though, if contractors in developing countries did face pressure to raise wages for production workers in the garment industry, this likely would be part of a broader movement for higher wages, and more broadly, downward income redistribution in these countries. We would expect some inflationary pressures to emerge under such conditions, even after allowing that output and productivity growth are also necessary for downward redistributions to be sustainable. But this increase in consumer prices would then be accompanied by greater mass purchasing power in real terms and an expansion of the domestic market. In short, a wage increase for garment workers producing for developing countries' domestic markets is likely to occur only as part of a general shift in economic strategy—i.e. away from an approach depending primarily on a low-wage, export-led growth model, and towards a framework that includes rising mass living standards and an expanding domestic market as a major source of growth. Of course, rising global integration places new constraints on such an alternative strategy. But constraints due to globalization are not insurmountable.<sup>24</sup> In fact, a movement for living wages in the global garment industry offers an important opportunity to explore the real limits of these constraints.

## **Section 5. Conclusion**

The evidence we have presented in this paper shows two basic things:

1. There is no relationship between wage and employment growth in considering the individual country evidence for the global apparel industry. This result is robust across regions, the size of countries' apparel industries, and whether they are OECD members.

2. Large mandated wage increases, as a feature of a decent labor standards regime in the apparel production industry, could be financed through increases in retail prices—certainly

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<sup>24</sup> See Baker, Epstein and Pollin (1998) for a range of perspectives on overcoming these constraints.

through price increases within the range that U.S. consumers say they are willing to accept to ensure “good” working conditions in apparel production.

Of course, we have reached this conclusion on the basis of highly simplified empirical exercises. Still, we have layered complexity onto the story in Section 4, considering whether 1) revenues received in retail would actually get passed back to businesses at the level of production to pay for these mandated wage increases; 2) the mandated wage increases could be applied to a broader set of workers in the apparel industry; and 3) the retail price increases would be viable in the context of less developed economies. Even allowing for these complexities, we still conclude that decent labor standards would be workable in the global apparel industry, in the specific sense that the increased labor costs resulting from such standards will not necessarily induce negative unintended consequences.

These conclusions offer more general lessons for understanding the broader issue of global labor standards. First, they suggest that global labor standards would be sustainable beyond the apparel industry alone, again, in the sense that, if carefully applied, the standards need not induce strong negative collateral effects. A key consideration here is how firms would adjust to the higher labor costs associated with improved labor standards. We have explored only retail price adjustments in this paper. But firms could also adjust through improving the marketing of their products; raising productivity; or accepting somewhat lower profits before they would decide to lay off workers or relocate. Beyond these adjustments that firms themselves can make, the availability of decent jobs—and thereby the sustainability of decent labor standards—will also depend on macroeconomic policies, as we briefly suggested at the end of section 4. Allowing for these various adjustment possibilities suggests that no single adjustment would need to be onerously large to cover the increased costs of implementing decent labor standards. Indeed, it is very likely that this range of possibilities open to firms and government policy makers for absorbing increased labor costs can explain the absence of any pattern between wage

and employment growth across national apparel industries. However, we have not explicitly demonstrated this point in this paper, so it remains as an issue for further research.

The other key consideration in whether the anti-sweatshop movement will be sustainable as long as its main basis of support continues to be students and other “human rights vigilantes,” to use Elliot and Freeman’s term (2000), as opposed to the workers themselves and their direct union representatives. This issue is closely related to the question of monitoring the enforcement of standards in an effective way: should this be done primarily by outside organizations or by the workers themselves and their unions? In fact, it will be crucial for workers and unions to become increasingly active in this movement, especially if monitoring practices are going to reasonably address their workplace concerns. At the same time, there are many countries in which workers’ freedom to associate and organize collectively are not adequately protected. As such, having students and other human rights activists organize in behalf of global labor standards can also create a focal point for supporting workers’ broad efforts to win basic rights and union representation (see the discussion on this by Gereffi, Garcia-Johnson, and Sasser 2001).

Overall then, because the demands of the anti-sweatshop movement should not generally generate significant negative unintended consequences, and are therefore sustainable over the longer term, the movement could also influence worker organizing efforts to an extent not yet envisioned by the movement itself.

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**Table 1. Regression Results Examining Employment And Real Wage Growth In The Global Garment Industry**

***Employment Growth Is Dependent Variable***

	<i>1993-97</i>		<i>1988-97</i>	
	All countries	Non-OECD countries	All countries	Non-OECD countries
<b>Real Wage Growth Coefficient</b>	-0.22	-0.33	-0.22	0.02
<b>T-Statistic</b>	-.1.1	-1.3	-0.8	0.1
<b>Number of countries in sample</b>	43	24	40	21

Sources: United Nations Industrial Development Organization (UNIDO, ISIC database; International Monetary Fund, International Financial Statistics).

**Table 2. Apparel industry wage and employment data  
by industry size and region**

**A) Countries with over 100,000 employment in 1997**

Country	Wage and Employment Growth			
	1993-97		1988-97	
	<u>Employment growth</u>	<u>Wage growth</u>	<u>Employment growth</u>	<u>Wage growth</u>
<b>Europe and N. America</b>				
<i>Mean</i>	+2.2	+3.5	+1.1	+2.3
<i>S.D.</i>	4.8	4.7	6.1	1.9
<i>Asia</i>				
<i>Mean</i>	+0.7	-1.1	+8.5	+1.4
<i>S.D.</i>	8.2	5.8	15.0	4.5
<i>Africa</i>				
<i>Mean</i>	+3.4	+0.6	+4.9	+2.2
<i>S.D.</i>	1.8	0.8	7.6	0.1

**B) Countries with between 10,000 – 99,999 employment in 1997**

Country	Wage and Employment Growth			
	1993-97		1988-97	
	<u>Employment growth</u>	<u>Wage growth</u>	<u>Employment growth</u>	<u>Wage growth</u>
<b>Europe and N. America</b>				
<i>Mean</i>	+2.2	+1.3	-2.0	-0.1
<i>S.D.</i>	3.0	3.3	1.8	0.6
<i>Asia</i>				
<i>Mean</i>	-7.9	+3.3	+1.6	+5.4
<i>S.D.</i>	8.0	1.5	4.0	2.3
<b>L. America and Caribbean</b>				
<i>Mean</i>	-3.6	+1.5	0.6	1.1
<i>S.D.</i>	3.1	4.6	3.1	4.2
<i>Africa</i>				
Zimbabwe	-27.7	+18.6	-0.4	-5.4



C) Countries with between 1,000 – 9,999 employment in 1997

Country	Wage and Employment Growth			
	1993-97		1988-97	
	<u>Employment growth</u>	<u>Wage growth</u>	<u>Employment growth</u>	<u>Wage growth</u>
<b>Europe and N. America</b>				
<i>Mean</i>	-8.4	2.3	-9.5	2.5
<i>S.D.</i>	6.8	1.5	3.0	1.9
<i>Asia</i>				
<i>Mean</i>	-7.4	+1.7	-1.4	+0.7
<i>S.D.</i>	16.5	4.0	14.3	5.7
<b>L. America and Caribbean</b>				
<i>Mean</i>	+0.1	3.3	2.8	-5.3
<i>S.D.</i>	7.0	11.7	8.9	5.3
<i>Africa</i>				
<i>Mean</i>	+2.5	+4.3		
<i>S.D.</i>	1.3	0.4		

Source: United Nations Industrial Development Organization (UNIDO), ISIC database; International Monetary Fund, International Financial Statistics

**Table 3. Labor Costs as a Share of Value Added in Global Apparel Industry**

	<b>1987</b>	<b>1997</b>
<i>All countries (39 in total)</i>		
<b>Mean</b>	<b>53.3%</b>	<b>51.5%</b>
<b>Standard deviation</b>	<b>14.8</b>	<b>15.4</b>
<i>OECD countries (19 in total)</i>		
<b>Mean</b>	<b>54.3%</b>	<b>52.8%</b>
<b>Standard deviation</b>	<b>13.9</b>	<b>12.8</b>
<i>Non-OECD countries (20 In total)</i>		
<b>Mean</b>	<b>52.3%</b>	<b>50.2%</b>
<b>Standard deviation</b>	<b>15.6</b>	<b>17.5</b>

Source: United Nations Industrial Development Organization (UNIDO) ISIC database

**TABLE 4. United States Production of Casual Men's Shirts, 1997**

*Average Wage For Non-supervisory Workers-- \$8.53*  
*Unit Cost of Shirts Shipped from Production--\$7.58*

(in 1997 dollars)

	<b>Share of Total Value of Production</b>	<b>Share of total \$7.58 unit cost</b>
Labor Inputs in Production		
Non-supervisory labor <i>Average Wage is \$8.53/hour</i>	11.2%	\$0.85
Supervisory labor	7.8%	\$0.59
<i>Total Labor Inputs</i>	<i>19.1%</i>	<i>\$1.45</i>
Materials and Service Inputs	57.8%	\$4.38
Surplus = Profits of firm, interest, taxes	23.1%	\$1.75

Source: U.S. Economic Census (1999) Data for "Casual Men's Shirts is average for woven sports shirts, knit t-shirts and tank tops made for outerwear, sweatshirts, and other knit shirts. The category excludes work shirts because the Department of Commerce does not include wage data for work shirts in deriving the overall wage figure.

**Table 5. Mexican Production of Casual Men's Shirts, 1997**

*Average Hourly Wage For Non-supervisory Workers: \$0.85*  
*Unit Cost Of Shirts Shipped From Production--\$4.45*

	<b>Share of Total Value of Production</b>	<b>Share of total \$4.45 unit cost</b>
Labor Inputs in Production		
Non-supervisory labor	11.2%	\$0.50
<i>Average Wage is \$0.85/hour</i>		
Supervisory labor	9.1%	\$0.40
<i>Total Labor Inputs</i>	<i>20.3%</i>	<i>\$0.90</i>

Source: Mexico National Economic Census

Note: Dollar figures for Mexican hourly wage and unit cost of shirts are derived from 3-year centered moving average of the Mexican wholesale price index divided by the peso/dollar exchange rate.

**Table 6. Living Wage Cost Increases Relative To Retail Prices**

*Average Retail Price in U.S. for Men's Casual Shirt--\$32  
Assumption is 100 percent wage increase for production-level workers*

(Figures are for 1997)

	<b>U.S. production, Domestic sale</b>	<b>Mexico production, Export sale in U.S.</b>
<b><u>Non-supervisory workers only 100% wage increase:</u></b>		
A) Production labor cost increase per shirt	\$0.85	\$0.50
B) Total production costs after wage increase	\$8.43	\$4.95
C) Retail shirt price with full mark-up for wage increase	\$32.85	\$32.50
D) Wage increase as share of retail price	2.7%	1.6%
<b><u>Non-supervisory and supervisory workers 100% wage increase:</u></b>		
A) Production labor cost increase per shirt	\$1.45	\$0.90
B) Total production costs after wage increase	\$9.03	\$5.35
C) Retail shirt price with full mark-up for wage increase	\$33.45	\$32.90
D) Wage increase as share of retail price	4.5%	2.8%

Source: Same as Table 1

**Table 7. Living Wage Cost Increases Relative To Retail Prices  
in U.S. and Mexico**

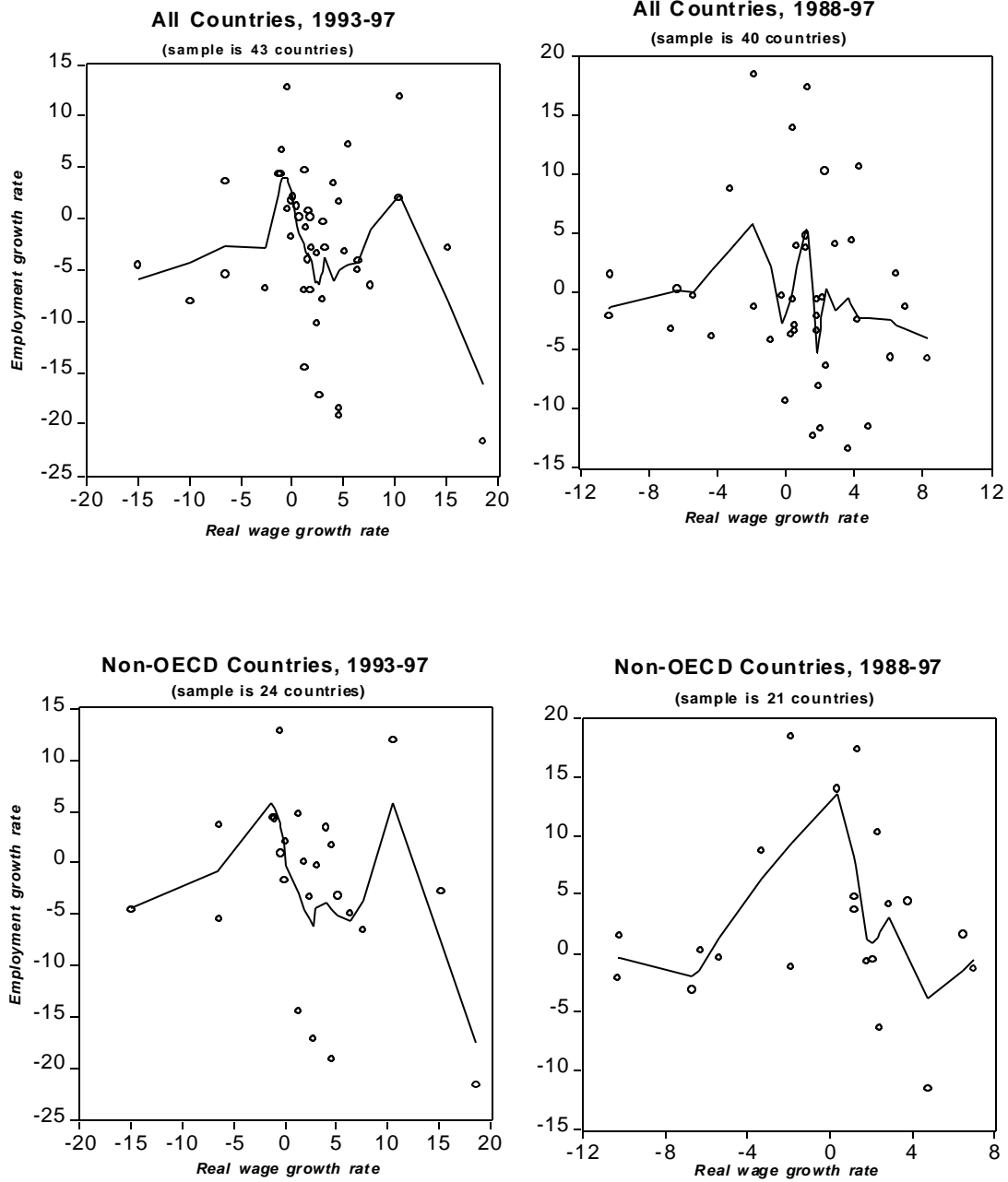
*Percentage retail price increased associated with a 100% wage increase for  
production-level workers*

<b>Apparel Item</b>	<i>United States</i>		<i>Mexico</i>	
	<b>Non-supervisory Workers Only</b>	<b>All Workers</b>	<b>Non-supervisory Workers Only</b>	<b>All Workers</b>
<b>Men's casual shirt</b>	2.7	4.5	1.6	2.8
<b>Men's dress shirt</b>	4.2	7.2	2.8	5.0
<b>Men's suits</b>	3.9	7.1	2.2	3.9
<b>Men's jackets</b>	3.5	6.4	1.3	2.3
<b>Women's dresses</b>	2.8	6.5	1.2	2.5
<b>Women's blouses</b>	2.2	4.4	1.3	2.7
<b>Women's skirts</b>	2.2	5.3	1.1	2.5
<b>Girl's skirts</b>	2.8	6.8	2.6	5.6
<b><i>AVERAGE—ALL GARMENTS</i></b>	3.0	6.0	1.8	3.4

Sources: U.S. Economic Census (1999); Mexico National Economic Census (1999)

Note: Figures for Men's Jackets are the average of those for tailored and non-tailored jackets, as reported in the U.S. Economic Census.

**Figure 1. Global Apparel Production:  
Real Wage and Employment Growth by Country**  
(figures are average annual percentages)



Sources: United Nations Industrial Development Organization (UNIDO);  
International Monetary Fund, International Financial Statistics