

Exports, Gender Wage Gaps and Poverty in Honduras

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Abstract

This paper identifies and estimates the reduction in poverty attributable to the improved opportunities that international trade integration offered to women in Honduras. The expansion of the export-oriented *maquila* sector has brought gender equality both in terms of employment and labour earnings. A simulation exercise shows that, at a given point in time, poverty in Honduras would have been 1.5 percentage points higher had the *maquila* sector not existed. Of this increase in poverty, 0.35 percentage points is attributable to the wage premium paid to *maquila* workers, 0.1 percentage points to the wage premium received by women in the *maquila* sector, and 1 percentage point to employment creation.

JEL Classification: F16, I32, J24, J31

Keywords: trade liberalization, maquila, poverty, gender wage gap, Honduras

1. Introduction

The main objective of this paper is to identify and estimate the strength of the reduction in poverty caused by the improved opportunities trade expansion offers to women in the case of Honduras. Introducing the gender dimension into the empirical analysis of the links between trade and poverty, which has not been prominent in the available literature,¹ sheds light on the trade and poverty debate and, in turn, may improve policy making.

Gender disparities, an important component of overall inequality, may limit the poverty reduction impact of trade expansion. As in the general case of growth, gains from trade are more likely to be pro-poor when initial inequality is low (Bourguignon, 2002; Ravallion, 2001). Besides, by hampering growth, high inequality also directly lowers the rate of poverty reduction. Ample evidence shows that, in spite of recent improvements, there are still large gender disparities. Due to social norms and discrimination outside as well as inside the household, women and men differ not only in terms of education but also in terms of access to labour markets, remuneration, sectoral employment, control over resources, and roles within households. Because of these disparities, men and women cannot take similar advantage of the opportunities created by trade liberalization.

The case of Honduras is especially interesting in this context: it is a poor small open economy that has recently experienced significant changes both in terms of poverty reduction and integration with international markets. Between 1991 and 2006, the proportion of the population living in extreme poverty fell from 61.5 per cent to 47.5 per cent. This large decrease in extreme

¹ A large literature describes in detail the globalization-growth-inequality-poverty nexus. See for recent examples Nissanke and Thorbecke (2006), Ravallion (2001) and Bussolo and Round (2006). This literature, however, does not focus on gender. In their exhaustive survey on trade and poverty, Winters, McCulloch and McKay (2004) mention just a few case studies where gender plays a role, indirectly highlighting the limited attention that the recent literature has dedicated to the gender topic.

poverty can be almost entirely explained by progress in urban areas, where the headcount ratio fell from 52.2 per cent in 1991 to 27.9 per cent in 2006.²

This poverty reduction took place in a period of unstable and relatively low economic growth during which the external sector experienced major changes. Tariff protection was greatly reduced and, perhaps more importantly for identifying the links between trade, gender and poverty, Honduras adopted a series of export-friendly tax incentives and benefited from increased market access due to external shifts in trade regimes (Caribbean Basin Initiative). These tax incentives and improved market access helped establish a *maquila* industry³: in 1990 *maquila* exports were almost non-existent but, by 2006, they comprised almost one-third of all export flows, basically replacing shrinking traditional exports of coffee and bananas.

Given the large expansion of the export-oriented *maquila* sector, the close relation between the performance of this sector and women's income, and the significant poverty reduction that occurred, a study of Honduras in this period could shed some light on how gender shapes the relationship between trade expansion and poverty. More specifically, this study tests the hypothesis that the reductions in poverty attributed to the *maquila* expansion are, to some extent, explained by gender effects.

An important feature of the Honduran case is that its *maquila* sector has some strong gender biases. In terms of employment mix, during the 1991–2006 period, close to seven out of ten *maquila* employees were women. The results presented here show that, controlling for worker's observables such as education, years of experience, industry of occupation, among others, the

² Authors' computations based on data from INE (2006).

³ A manufacturing firm is defined as a *maquila* when it operates within a fiscal regime that allows it to import intermediate goods on a duty-free or tariff-free basis, process or assemble them (labour value-added), and then re-export the final good, usually to the originating country.

maquila sector gender wage gap was about 16 percentage points smaller than the gap observed in other industries.⁴ These results are in line with previous studies showing an increase in female labour demand brought about by trade liberalization in Latin America. For instance, Ver Beek (2001) finds that wages for women in the *maquila* industry are higher in Honduras; and De Hoyos (2011) finds that female labour participation in Mexico increased as a result of the North American Free Trade Agreement.⁵

The econometric analysis and partial equilibrium simulations presented below show that, at a given point in time, poverty in Honduras would have been 1.5 percentage points higher had the *maquila* sector not existed. Of this increase in poverty, 0.35 percentage points is attributable to the wage premium paid to *maquila* workers, 0.1 percentage points to the wage premium received by women in the *maquila* sector, and 1 percentage point to employment creation.

The paper is organized as follows. The next section presents an overview of the Honduran economy between 1991 and 2006. It describes the country's macroeconomic performance, poverty and inequality indicators, and trends in international trade in general and the *maquila* sector in particular. The following section describes the methodology used to identify the poverty impact of an expansion in the *maquila* sector as well as the gender effects embedded in this relationship. The third section presents the results. The last section summarizes the paper's main findings.

⁴ Note that both men and women working in the *maquila* sector earn more than their peers employed outside this sector. This means that the gender equalizing effect of the *maquila* is not at the expense of lower wages for men.

⁵ For a summary of the poverty and inequality effects of trade liberalization in Latin American see De Hoyos and Lustig (2009).

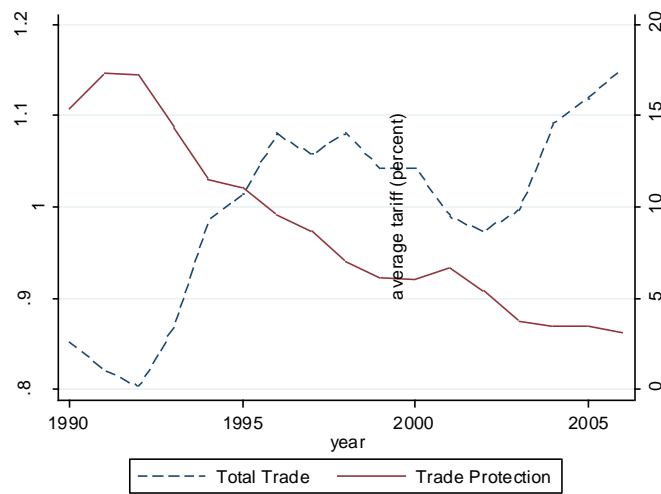
2. Trade Expansion and Poverty Alleviation in Honduras, 1990–2006

This section includes a brief description of international trade and its composition, the importance of the *maquila* industry, and poverty trends in Honduras since 1990. The data suggests that the increasing integration with international markets, and its potential poverty-alleviating effect, is associated with Honduras' trade-liberalizing policies and the unilateral trade preferences conceded by the United States under the Caribbean Basin Initiative.

2.1 Trade Policy and the Booming Maquila Sector

In 1990, Honduras began the implementation of pro-trade reforms by unilaterally reducing tariffs, and in 1994 it joined the General Agreement on Tariffs and Trade (GATT). The multilateral agreement became the base for Honduras' trade policy, granting, at least, Most Favored Nation (MFN) treatment to all its trading partners. Honduras is an active member of the Central American Common Market. It has signed about a dozen bilateral investment treaties and free trade agreements with countries including Canada, Colombia, Chile, the Dominican Republic, Mexico, Panama, Switzerland, Taiwan (China), and the United States. Trade-oriented policies continue to be at the centre of the development agenda in Honduras, which is participating in the negotiation of a trade agreement between the European Union and Central America.

Figure 1 Trade Openness in Honduras, 1990–2006



Source: Authors, based on data from the Banco Central de Honduras and Secretaría de Finanzas.

As a result of trade policy, the Honduran economy is developing into a more open and liberalized economy. Its tariff structure is low and more uniform than it used to be, and the application of non-tariff measures is very limited. The simple average of implicit tariff rates decreased from more than 16 per cent in 1991–92 to about 3.3 per cent in 2005–06 (Figure 1).⁶ In 2002, after the damaging effects of Hurricane Mitch, international trade supported a rapid recovery led by the exports of *maquila* manufacturing and agroprocessing industries.

Between 1999 and 2006, exports and domestic markets became more diversified, and employment and investment (domestic and foreign) grew, particularly in some non-traditional export activities. The United States remains the country’s principal trading partner, with Central America, particularly El Salvador and Guatemala, representing the second most important

⁶ The average implicit tariff was calculated as import tariff revenue/imports fob (free on board), excluding oil.

market. The European Union is third, with exports to Germany particularly high. In recent years, exports to Mexico and Canada have also increased significantly.

Maquila has become the single most important export activity in Honduras. In 2006 it represented 27 per cent of total exports of goods and services, up from virtually zero in 1990. Between 1990 and 2006, the value added of exports by the sector rose from US\$16 million to US\$1,062 million, growing at an impressive average annual rate of 33 per cent (Table 1). According to data from Honduras' Central Bank (Banco Central de Honduras, 2006), in the same period, the average annual real wages paid by *maquila* firms increased steadily during the 1990s, stabilizing after 2000, partly due to high inflation rates, at around 40,000 lempiras or around US\$3,000 (Table 1). This evolution indicates an improvement in the living standards of these workers.

Table 1 Dynamic Performance of the *Maquila* Sector in Honduras, 1990–2006

<i>Measure</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>
Number of firms	24	135	218	230	252	273	294	306	313
Number of employees (thousands)	9.0	55.0	106.5	94.4	105.5	114.2	119.9	125.2	130.1
Average real wage (lempiras of 1999)	14,350	24,997	43,191	42,695	39,709	43,089	42,510	42,410	41,374
Average real wage (US dollars of 1999)	989	1,557	3,063	3,113	2,880	3,102	3,083	3,106	3,107
Value added	16	163	575	560	613	710	815	969	1,062

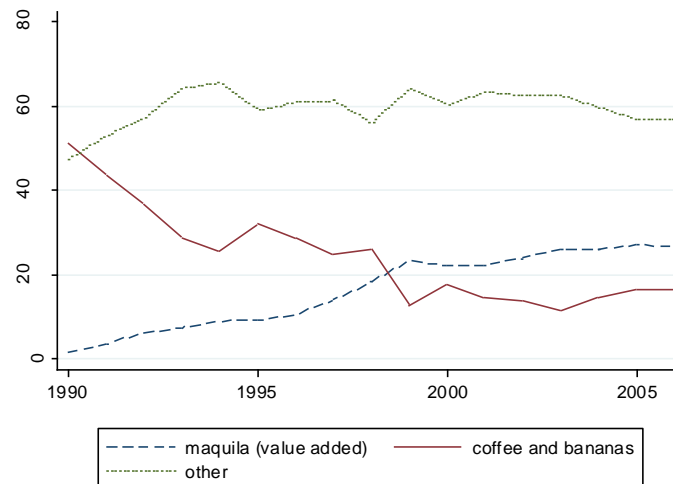
Source: Authors, based on data from Banco Central de Honduras and US Department of Labor.

*Notes: (1) Average wage corresponds to annual figures. (2) Value added is measured in millions of current US dollars.

Additionally, the percentage of total exports accounted for by the *maquila* sector rose from 1.5 per cent in 1990 to 26 per cent in 2006 (Figure 2). During the same period, the share of

traditional export crops, such as coffee and bananas, declined from 51 per cent to 16 per cent. In contrast to the sluggish evolution of coffee and bananas, exports of other non-traditional products – particularly farmed shrimp, minerals, palm oil, and other agroindustries –expanded.⁷

Figure 2 Composition of Exports in Honduras, 1990–2006



Source: Authors, based on data from the Banco Central de Honduras

The unilateral trade preferences conceded by the United States under the Caribbean Basin Initiative established in 1983, and a variety of other factors (such as logistics, abundant and low cost of labour, and the granting of export incentives) consolidated the situation of Honduras as a major exporter of textiles and apparel to the United States.⁸ In 1995 the value added of the *maquila* industry represented 2.2 per cent of GDP and 14.5 per cent of total manufacturing production; by 2006 the sector accounted for 6.5 per cent of GDP and 36.3 per cent of manufacturing production (Banco Central de Honduras 2007). During this period the number of *maquila* firms more than doubled, the number of employees working in the sector increased by

⁷ For an estimation of the *ex-ante* poverty effects of trade liberalization in Honduras focusing on the agricultural sector, see República de Honduras (2005).

⁸ For a brief description of the main factors behind the increase in Honduras' *maquila* exports, see Annex 1.

140 per cent, and average annual wages in the sector rose from US\$1,454 to US\$3,823 (see Table 1). In 2001 the expansion of the *maquila* sector came to a halt, mainly as a result of the slowdown in the US economy. The sector resumed growth in subsequent years.

Honduras' *maquila* sector is highly concentrated on the production of textiles and apparel. In 2006, 313 firms belonged to the sector, 51 per cent of which produced textiles and apparel. These firms employed 77.2 per cent of the total workers in the *maquila* sector. The rest of the *maquila* sector is made up of firms engaged in manufacturing electronic components for automobiles, furniture, and wood products (23.3 per cent of all firms); trade-related activities, such as the import and sale of spare parts for machinery (18.8 per cent); and services, such as data processing (6.7 per cent) (Banco Central de Honduras 2007).

2.2 Poverty and Workers in the Maquila Sector

In 1990 more than 60 per cent of Honduras' population lived in rural areas; by 2006 this figure had fallen to 54 per cent. Over the same period, GDP grew at the moderate annual rate of 3.2 per cent, and the average annual increase in per capita household expenditure was 0.4 per cent. Although Honduras' growth achievements are far from remarkable, and disparities in the distribution of income are growing, the proportion of the population classified as poor fell almost 13 percentage points between 1991 and 2006 (Table 2).

Notwithstanding a nationwide reduction in the poverty rates, there has been little poverty alleviation in rural areas, particularly in the number of households below the extreme poverty line.⁹ In contrast, urban areas in Honduras have made substantial progress against poverty, with

⁹ People in rural areas, particularly poor small-scale farmers, were seriously affected by Hurricane Mitch.

the extreme poverty headcount ratio plummeting from 52.2 per cent in 1991 to 27.9 per cent in 2006.

Table 2 Poverty Headcount Ratio and Gini Coefficient in Honduras, 1991–2006 (per cent)

<i>Welfare measure</i>	<i>1991</i>	<i>1995</i>	<i>2001</i>	<i>2006</i>
<i>Extreme poverty</i>				
Rural	68.0	65.1	69.2	65.1
Urban	52.2	41.9	32.7	27.9
National	61.5	55.1	51.2	47.5
<i>Moderate poverty</i>				
Rural	80.3	75.6	78.1	73.6
Urban	79.4	74.4	63.5	59.6
National	79.9	75.1	70.9	67.0
<i>Gini coefficient</i>				
National	52.4	55.5	56.6	58.6

Source: Authors' computation based on data from Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM).

How much of the significant reduction in poverty can be explained by the *maquila* boom? The answer depends on the proportion of households in the neighbourhood of the poverty line whose incomes depend on the *maquila* sector; the change in real wages of *maquila* workers living in households near the poverty line; and the possibility for people near the poverty line to get jobs in the *maquila* sector. The share of Honduras' workforce working in the *maquila* sector increased from 1.3 per cent in 1991 to 4.4 per cent in 2006; during this time the prevalence of poverty among *maquila* workers fell 22 percentage points (from 54.6 per cent to 32.9 per cent, or

a 40 per cent reduction), an achievement well above the national level (Table 3).¹⁰ This is an indicator that the overall poverty reduction documented in Table 2 was at least partly caused by fast-growing labour participation and earnings in the *maquila* sector. The potential contribution of the *maquila* sector to poverty alleviation in Honduras is significant: in 1991, only 3.3 per cent of the total households above the poverty line had a member working in a *maquila*; in 2006 this proportion increased to 10.8 per cent.¹¹ This is hardly surprising given the high number of jobs created in the *maquila* industry, which had a direct positive income effect for those workers who found a job in this sector, and an indirect effect via the effect on the general equilibrium wages in the economy (Table 3).

Table 3 *Maquila* Performance and National Poverty Rates, 1991–2006

<i>Item</i>	<i>1991</i>	<i>1995</i>	<i>2001</i>	<i>2006</i>
Total number of workers in the <i>maquila</i> sector	19,400	45,327	90,016	106,501
Percentage of active population working in the <i>maquila</i> sector	1.3	2.6	4.3	4.4
Percentage of <i>maquila</i> workers living under the poverty line	54.6	58.0	37.6	32.9
Percentage of non-poor households with family member working in the <i>maquila</i> sector	3.3	4.4	10.7	10.8

¹⁰ Note that *maquila* workers living in poverty does not mean that they are getting wages below the poverty line. Indeed, *maquila* workers get salaries above the poverty line, but this income source, by itself, is not enough to push a family of five in Honduras out of poverty. Therefore, in those cases where the *maquila* wage is the only income source in a typical Honduran household, the worker and his/her family would still be poor (see Ver Beek 2001 for details).

¹¹ Although there is some wage dispersion among *maquila* workers that contributes to the explanation of why some of these workers still live in households below the poverty line, earnings in this sector are relatively well distributed. For instance, in 1991 the Gini coefficient for wages was 43.3 per cent compared to 18.5 per cent in the *maquila* sector. By 2006, after a significant increase in the number of *maquila* workers, the Gini coefficient grew to 28.8 per cent.

Source: Authors' computation based on data from Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM) with the moderate poverty line set by Instituto Nacional de Estadísticas (INE).

An important component of the welfare effect brought about by an increase in *maquila* sector activity is its capacity to create new jobs. The proportion of total employment in the *maquila* sector increased steadily from 1991 (Table 4). Although the change in the gender mix in the sector favoured men, in 2006 still more than half of all *maquila* workers were women. Two other important aspects highlighted in Table 4 are the increase in the working-age population and the increase in under-employment. These trends suggest that the Honduran economy was unable to create the new jobs needed to satisfy the demographically driven increase in labour supply, contributing to the proliferation of part-time jobs, most of which are in the informal sector. In addition, unable to find jobs in their home country, many young Hondurans have migrated, mainly to the United States.

Table 4 Labour Participation and the *Maquila* Contribution, 1991–2006 (per cent)

<i>Item</i>	<i>1991</i>	<i>1995</i>	<i>2001</i>	<i>2006</i>
Working-age population (15–65) as a percentage of the total population	51.7	52.1	53.4	56.1
Percentage of the working-age population that is active	59.4	61.0	60.8	58.3
Percentage of the active population that is employed	81.1	76.3	78.5	75.1
Percentage of the employed population	0.5	0.9	1.9	2.7

that are men in <i>maquila</i>				
Percentage of the employed population that are women in <i>maquila</i>	1.1	2.4	3.5	3.1
Percentage of active population, under-employed	14.4	19.4	17.1	22.6
Percentage of active population, unemployed	4.5	4.3	4.3	2.3

Source: Authors' computation based on data from Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM).

3. Methodology

The trade reforms introduced in Honduras during the 1990s together with the unilateral trade preferences conceded by the United States under the Caribbean Basin Initiative could be seen as an external shock redistributing resources to the *maquila* sector. Redistribution of productive factors occurs through price mechanisms. That is, increases in labour demand in the *maquila* sector (particularly female labour) cause a rise in the relative wages of labour, an increase in labour participation, or both (again, with a strong bias favouring female workers). The poverty impact of the changes brought about by trade reform can be analysed using the empirical framework developed in this section.¹²

¹² A similar methodology, with an application to Mexico, can be found in Artecona and Cunningham (2002) and De Hoyos (2009; 2011).

Household h is defined as poor if its per capita household income (or expenditure), y_h , is below a predetermined poverty line, z . At the national level, poverty indices can take into account the proportion, depth, and severity of poverty. These three aspects of poverty (the poverty headcount, the poverty gap, and the distance from the poverty line) are estimated using the poverty measures developed by Foster, Greer, and Thorbecke (1984):

$$P_\alpha = \frac{1}{N} \sum_{h=1}^N \left(\frac{z - y_h}{z} \right)^\alpha \quad \forall (y_h \leq z) \quad (1)$$

where N is the total population and α is a parameter that penalizes the differences between the income of the poor and the poverty line. Let us define the income of household h as the sum of incomes of all household members derived from various sources:

$$y_h = \frac{Y_h}{G_h} = \sum_{g=1}^G w_{g,h} + Y_h^o \quad (2)$$

where $w_{g,h}$ is the wage of member g in household h and Y_h^o represents income from other sources of household h . Hence y_h measures per capita household disposable income, the welfare measure used here. The *maquila* sector is linked to household welfare – and hence poverty – by changes in wages and employment attributable to the sector's performance. Following human capital theory, the log of wages is defined as a function of personal characteristics and a random component. In order to identify the conditional gender wage gaps and the wage effects resulting from the *maquila* sector, we introduce a dummy variable for women and for workers in the *maquila* sector:

$$\ln(w_i) = \sum_j \beta_j x_{i,j} + \delta_1 D_w + \gamma D_m + \varepsilon_i . \quad (3)$$

According to equation (.3), the wage of worker i is a function of j personal characteristics, $x_{i,j}$; a dummy variable, D_w , which takes the value 1 when the worker is a woman; a dummy variable for workers in the *maquila* sector, D_m ; a set of parameters; and a random component, ε_i .¹³ To test the hypothesis that part of the relation between the *maquila* expansion and poverty operates through gender, let us decompose the wage effects brought about by the expansion of the *maquila* sector and express this as a linear function of gender:

$$\frac{\partial \ln(w_i)}{\partial D_m} = \gamma = \delta_2 + \delta_3 D_w . \quad (4)$$

Substituting equation (8.4) into equation (8.3) yields

$$\ln(w_i) = \sum_j \beta_j x_{i,j} + \delta_1 D_w + \delta_2 D_m + \delta_3 D_w D_m + u_i . \quad (5)$$

Parameters δ_1 and δ_2 in equation (5) measure the gender and *maquila* premium, respectively; δ_3 captures the wage effects of the *maquila* sector that operate through gender. An alternative interpretation for the interactive effect, δ_3 , can be found in the literature on the economics of discrimination, which posits that the gender wage gap tends to be smaller in export-oriented sectors (Becker 1971). The gender wage gap is affected by the export-oriented *maquila* sector by the increased competition brought about by trade integration (Artecona and Cunningham 2002; Arbache and Santos 2005). The interactive effect, δ_3 , is equal to the difference in the gender

¹³ Given data restrictions, the textile and apparel industry is used as a proxy for the *maquila* sector. In 2006, the textile and apparel industry comprises 77 per cent and 79 per cent of the total labour force and value added of the *maquila* sector, respectively (Banco Central de Honduras 2007). For more details see Annex 2.

wage gap in and out of the *maquila* sector (Table 5). If the *maquila* sector is more competitive (and hence employers care more about workers' productivity rather than their gender) and there is some degree of discrimination in the labour market, the wage gap between male and female workers in the *maquila* sector should be smaller than in other sectors; δ_3 should thus be greater than zero.

Table 5 Wage Premia by Subgroup

<i>Item</i>	<i>Sector of employment</i>	
	<i>Maquila</i>	<i>Non-maquila</i>
Men	δ_2	Control
Women	$\delta_1 + \delta_2 + \delta_3$	δ_1
Wage gap (men/women)	$-(\delta_1 + \delta_3)$	$-\delta_1$

Source: Based on equation (8.5)

The excluded category in equation (5) is men outside the *maquila* sector; the three parameters capturing the gender, *maquila*, and interaction effects are interpreted as shifts in wages with respect to this control group. To clarify these effects, we show the wage premia assigned by equation (5) to the different population subgroups. A woman working in the *maquila* sector, for example, will receive a market premium equal to $\delta_1 + \delta_2 + \delta_3$ (with respect to men outside the *maquila* sector) controlling for the market remuneration to her personal characteristics $\sum_j \beta_j x_{i,j}$.

The wage premium of women working in the *maquila* sector with respect to women in the other sectors will be equal to $(\delta_1 + \delta_2 + \delta_3) - \delta_1 = \delta_2 + \delta_3$.

So far the analysis has not incorporated any time dimension. As noted earlier, from a theoretical point of view, trade reforms can be seen as a shock redistributing resources across the different sectors of the economy. This redistribution process occurs through price changes or changes in market returns to personal characteristics. We are interested in the welfare effects brought about by a change in *maquila* employment, a change in the premia given to workers in the *maquila* sector, and changes in the overall gender gap, and, in particular, the interactive effect capturing the gender wage gap differential between the export-oriented sector and other sectors. The change in the wage premia can easily be measured by introducing a time dimension to equation (5). Define t as time dummies, and redefine $D_w = D_1$, $D_m = D_2$, and $D_w D_m = D_3$ as follows:

$$\ln(w_i^t) = \sum_{j=1}^J \beta_j x_{i,j}^t + \sum_{k=1}^3 \delta_k D_k^t + \sum_{t=2}^T \phi_t + \sum_{k=1}^3 \sum_{t=2}^T \lambda_k^t D_k^t + v_i^t . \quad (6)$$

The first term on the right-hand side of equation (6) captures the returns to personal characteristics; the second term captures the effects shown in Table 5; the third term shows time controls or year-dummies that capture overall macroeconomic changes; the fourth term allows for time-varying gender, *maquila*, and interactive effects; and the last term is a normally distributed random component. Parameters λ_k^t (called difference-in-difference estimators) reveal how the premia shown in Table 5 vary over time.¹⁴ If the trade reforms in Honduras had a greater positive effect on women in the *maquila* sector (making their real wages increase faster than wages in other categories over time), λ_k^t should be significantly different from zero and positive.

¹⁴ In a strict sense, these are triple difference estimators, because they capture differences between men and women, between workers inside and outside of the *maquila* sector, and over time.

4. Results

The poverty effects of a boom in the *maquila* sector are estimated using data from the Encuesta Permanente de Hogares de Propósitos Múltiples (EPHPM) – Honduras’ nationally representative household survey – for 1991, 1995, 2001, and 2006. The time span covered by these surveys (1991–2006) captures a period of significant tariff reduction and strong growth of the *maquila* industry (see Figure 1).

All the regression results for the four specifications of equation (6) account for EPHPM’s survey design (that is, clustering, stratification, and expansion factors on point estimators and standard errors); all the results presented show heteroskedastic-robust standard errors and control for year and industry fixed effects (Table 6).¹⁵ The first specification shows the result of a standard human capital equation, with the log of wages a function of years of schooling and its squared form, experience and experience squared, and a dummy variable for urban workers. The results of this specification are as expected. One additional year of schooling yields a 10 per cent increase in wages; experience has a positive, though marginally decreasing, effect on earnings; and urban wages are about 16 per cent higher than rural wages. Female wage-earners in Honduras earn 27 per cent less than men, once differences in education, experience, industry of occupation and location (rural vs urban) are taken into account. Regardless of their gender, *maquila* workers earn a conditional wage premium of 31 per cent over workers outside the sector. These results are robust, both qualitatively and quantitatively, to differences in model specification.

¹⁵ The industries included are mining; manufacturing; electricity, gas, and water; construction; commerce; restaurants and hotels; transport and communication; financial services; and other services. The excluded category is the agricultural sector.

Table 6 Regression Results

<i>Item</i>	<i>Specification 1</i>	<i>Specification 2</i>	<i>Specification 3a</i>	<i>Specification 3b</i>
<i>Core variable</i>				
Schooling	0.0953**	0.0954**	0.0956**	0.0956**
Schooling squared	0.0020**	0.0020**	0.0019**	0.0019**
Experience	0.0192**	0.0185**	0.0185**	0.0185**
Experience squared	-0.0000**	-0.0000**	-0.0000**	-0.0000**
Urban dummy	0.1630**	0.1632**	0.1635**	0.1635**
<i>Maquila and women control</i>				
Women dummy (δ_1)	-0.2710**	-0.2871**	-0.3684**	—
Maquila dummy (δ_2)	0.3139**	0.2157**	0.2276**	—
Women * maquila (δ_3)		0.1664**	0.2578**	—
<i>Dynamic effects</i>				
<i>Women</i>				
1991			—	-0.3684**
1995			0.0447	-0.3237**
2001			0.0727**	-0.2957**
2006			0.1650**	-0.2034**
<i>Maquila</i>				
1991			—	0.2276**
1995			-0.1815*	0.0461
2001			0.0117	0.2393**
2006			0.0367	0.2643**
<i>Women * maquila</i>				
1991			—	0.2578**
1995			0.0799	0.3377**
2001			-0.0742	0.1836**
2006			-0.2280**	0.0298
Year controls	Yes	Yes	Yes	Yes
Industry controls	Yes	Yes	Yes	Yes
Constant	6.4083**	6.4260**	6.5318**	6.1634**
R-squared	0.47	0.47	0.47	0.47

* Significant at 5 per cent; ** significant at 1 per cent. *Note:* The dependent variable is the log of wages. Schooling is measured as the years of formal education. Industry controls include dummy-variables for each of the nine industries at the one-digit level of industrial aggregation; the agricultural sector was chosen as the base category. Specifications 3a and 3b are two different ways of presenting the same equation. Sample size is 43,268.

The second specification includes three dummy variables capturing the gender wage gap, a *maquila*-specific wage premium, and a premium associated with women in the *maquila* sector,

respectively. Recall that the interactive term measures the difference in the gender wage gap inside and outside the *maquila* sector. Between 1991 and 2006, women earned average wages that were 28.7 per cent lower than those of men. The average wage of workers in the *maquila* sector was more than 20 per cent higher than those of workers outside the sector. Controlling for observable characteristics, female workers in the *maquila* sector earned 9.5 per cent ($\approx -28.7 + 21.6 + 16.6$) more than men working outside the *maquila* sector, and 38 per cent ($\approx 28.7 + 9.5$) more than women working outside the sector (Table 7).¹⁶

Table 7 Wage Premium Results from Specification (2) (per cent)

<i>Item</i>	<i>Maquila</i>	<i>Non-maquila</i>
Men	$\delta_2 = 21.5$	Control
Women	$\delta_1 + \delta_2 + \delta_3 = 9.5$	$\delta_1 = -28.7$
Wage gap (men/women)	$-(\delta_1 + \delta_3) = 12$	$-\delta_1 = 28.7$

Source: Authors' estimates. Note: All the parameters are significant at the 1 per cent level.

The results for specification 2 reveal another important feature of the *maquila* sector: the fact that the gender wage gap is 16.6 percentage points smaller than the gap observed in industries outside the sector. For this reason, the increase in the importance of the *maquila* industry in total employment had a gender-equalizing effect.

The wage premia shown in Table 7 are the average over the entire period of analysis; these estimates do not consider any time dimension, as observations from the four household surveys are pooled in a single sample. One of the hypotheses outlined earlier was that the *maquila* boom

¹⁶ Consider the case of a woman employed outside the *maquila* sector. According to specification 2 of Table 6, she earns 28.7 per cent less than men outside the *maquila* sector. Because she is not working in the *maquila* sector, she does not benefit from the 9.5 per cent premium that women in that sector enjoy. Therefore, on average a woman employed outside the sector earns 38 per cent less than a woman employed in the *maquila* sector.

of the 1990s resulted in a growing wage premium for workers in the sector. To test this hypothesis, we formulate specification (3a) in Table 6, which allows for dynamic effects (the wage premia related to gender, the *maquila* sector, and the interaction between these two can take different values over time). All the time-interacting terms, or difference-in-difference (DID) estimators, take 1991 as the base year, capturing the change in the parameter over time with respect to the initial year. Consider first the DID estimator for the premium received by workers in the *maquila* sector. The lack of statistical significance for this estimator indicates that the *maquila* premium remained constant during the time period analysed here, except in 1995. This is not the case for the gender wage gap, which decreased over time (significantly so in 2001 and 2006). The reduction in the gender wage gap outside the *maquila* sector partly explains the lack of significant dynamic effects on wage premia for women working in the *maquila* sector. In fact, the DID estimator on the interactive term is negative and significant in 2006, implying that women did not receive an extra wage premium for working in the *maquila* sector in 2006 (that is, the gender wage gap was the same in and out of the *maquila* sector).

The lack of significant dynamic effects deserves some explanation. Although the results on *maquila* wage premia suggest some level of labour market segmentation, a minimum degree of labour mobility would be enough to offset any long-term trend in wage differentials between the *maquila* and other sectors. As shown by the identical specifications (3a) and (3b), *maquila* workers earned wages that were about 24 per cent higher than workers outside the sector in all years but 1995. This differential may be enough to attract the workers the industry needs,¹⁷ creating no incentives for entrepreneurs to raise it over time. With some labour mobility, the trade-mandated increase in female labour demand would not only manifest itself as an increase

¹⁷ In fact the proportion of the active female labour population employed in the *maquila* sector rose from 4.3 per cent in 1991 to 12.4 per cent in 2001.

in wages of women in the *maquila* industry but also have an impact on the rest of the economy, thereby reducing the overall gender wage gap. The long-term reduction in the gender wage gap (which had fallen 7.3 per cent from the 1991 baseline by 2001 and 16.5 per cent by 2006) can thus be at least partly explained by an increase in female labour demand in the *maquila* sector.¹⁸

4.1 The Poverty Impact of a Growing Maquila Sector

To measure the poverty effects of the *maquila* boom documented above, we construct a distribution of hypothetical household per capita income that captures what the poverty level in Honduras would have been if the *maquila* industry had ceased to operate in any given year. The short-term income effect of a sudden elimination of the sector can be decomposed into two separate impacts: wage premia and employment. This section presents two simulations, one examining what the poverty level in Honduras would have been had the *maquila* industry not paid a wage premium, and one examining what the poverty level would be if all *maquila* jobs had been eliminated. These counterfactuals illustrate the short-term poverty impact of income changes originating in the *maquila* sector. We ignore the long-term or general equilibrium effects of the *maquila* boom.¹⁹

To formalize the simulation process, we redefine equation (2) in terms of the results from specification (3b) in Table 6:

$$Y_h = \sum_{g=1}^G w_{g,h} + Y_h^o$$

$$w_i^t = \exp \left\{ \sum_{j=1}^J \hat{\beta}_j x_{i,j}^t + \sum_{t=2}^T \hat{\phi}_t t + \sum_{k=1}^3 \sum_{t=1}^T \hat{\lambda}_k^t D_k^t t + \hat{\nu}_i^t \right\} . \quad (7)$$

¹⁸ The results presented in this section are only indicative of the potential effect of the *maquila* expansion on the economy-wide gender wage gap and should not be taken as conclusive evidence.

¹⁹ Using a dynamic Computable General Equilibrium (CGE) model, Morley et al.(2008) estimate the *ex-ante* general equilibrium poverty effects of the Central American Free Trade Agreement (CAFTA) in Honduras.

The wage equation in equation (7) allows for different gender, *maquila*, and *maquila*–gender effects for each year.²⁰ Hypothetical wages can be constructed based on expression (7), assuming that, say, the premia for workers in the *maquila* sector, λ_2^t $t = (1991, 1995, 2001, 2006)$ are equal to zero or that wages for all *maquila* workers are set to zero. In 1991, for example, the simulated wages for workers in the *maquila* sector would have been 22.7 per cent lower than their observed level (see specification 3b in Table 6). Adding the simulated wages to the exogenous household incomes (Y_h^o) and dividing this by the number of household members yields the simulated household per capita incomes, $y_h^t = Y_h^t / G_h$. These values are used to compute hypothetical poverty indices:

$$P_\alpha^t = \frac{1}{N} \sum_{h=1}^N \left(\frac{z - y_h^t}{z} \right)^\alpha \quad \forall (y_h \leq z). \quad (8)$$

The difference between the observed and simulated poverty, $P_\alpha^t - P_\alpha$, can be thought of as the amount of poverty reduction attributed to the *maquila* premia, employment, or both, depending on the simulation.²¹ Because both the *maquila* premia and the jobs created by this sector had positive income effects, it will not come as a surprise that these impacts reduce poverty. The aim of the exercise is to quantify the importance of the *maquila* industry for poverty alleviation in Honduras.

Three simulations are run, two of which capture the poverty effects attributable to the *maquila* wage premia (as shown in specification 3b in Table 6) and one of which creates a hypothetical

²⁰ The wage equation in equation (8.7) includes the estimated individual-specific residuals \hat{v}_i^t using the results from specification 3a in Table 6.

²¹ Nicita and Razzaz (2003) estimate a model with enough economic structure to capture the employment effects associated with a boom in the textile and apparel industry. The authors find that for each new job created in the textile industry, 4.5 individuals experience an increase in their purchasing power.

world in which Honduras has no *maquila* jobs. In the first simulation, the year-specific *maquila* sector wage premia are subtracted from wages of all *maquila* workers (Table 8). This counterfactual captures the difference between the observed poverty headcount and the headcount ratio that would have prevailed in Honduras had *maquila* workers not enjoyed a premium like the one shown by specification (3b) in Table 6. The second simulation captures the poverty effects of the *maquila* sector wage premium, including its effect through gender. In this simulation both sets of *maquila* premia (the *maquila* effect and the *women*maquila* effect in Table 6) are subtracted from the wages of women in the *maquila* sector.²²

Table 8. Estimated Poverty Headcounts in the Absence of *Maquila* Effects, 1991–2006

<i>Headcount ratio, %</i>	<i>1991</i>	<i>1995</i>	<i>2001</i>	<i>2006</i>
Actual	79.9	75.1	70.9	67.0
Without <i>maquila</i> premium	80.0	75.1	71.5	67.6
Without <i>maquila</i> and gender premia	80.1	75.3	71.6	67.6
Without premia and <i>maquila</i> employment	80.5	75.9	73.0	69.4

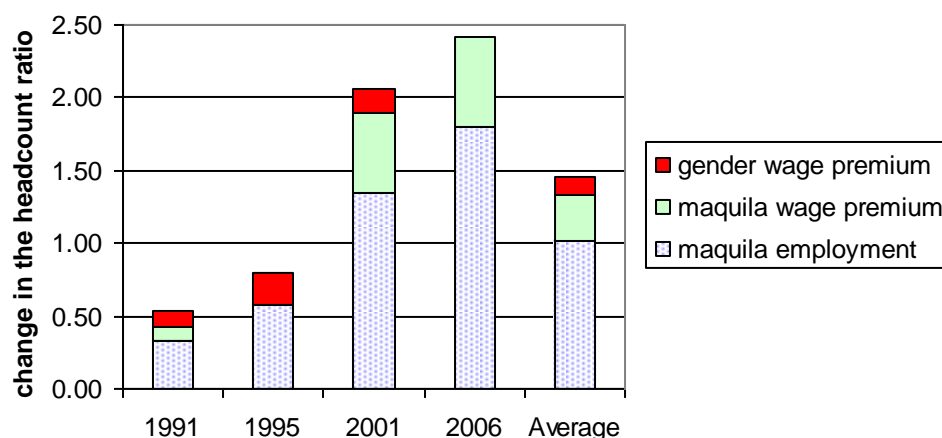
Source: Authors' estimates. *Note:* Poverty is measured using a moderate poverty line. Simulations are based on estimated parameters from specification (3b) in Table 6.

Given that all parameters measuring wage premia in the *maquila* sector are non-negative, it is not surprising that eliminating them increases poverty. If the *maquila* sector had not paid a premium, the moderate national poverty headcount in 2001 would have been 71.5 per cent instead of the observed level of 70.9 per cent; if the premium enjoyed by women in the *maquila* sector had also been eliminated (together with the interaction effect), the poverty headcount would have risen to

²² Because only significant parameters were taken into account in this micro-simulation, the *maquila* effect in 1995 is equal to zero.

71.6 per cent. By itself the *maquila* premium accounted for 0.31 poverty points in the national poverty level (0.44 when allowing for gender-specific effects).

Figure 3. Percentage of Total Poverty Headcount Attributable to Various Factors



Source: Authors' simulations, based on estimation results from specification 3b in Table 6. *Note:* Percentages are computed as the marginal difference in the poverty headcount shown by the cumulative effects displayed in Table 8.

A third simulation captures the cumulative poverty effects of *maquila* premia and employment. This simulation sets the wage of all *maquila* workers equal to zero in order to produce a rough idea of how important the *maquila* sector is for poverty alleviation in Honduras.²³ The results show that had there been no *maquila* jobs in Honduras in 2001, the moderate poverty headcount would have been almost 2 percentage points higher on average (73 per cent instead of 70.9 per cent).

The results presented in Table 8 are complemented by the presentation of the marginal contribution of each component (*maquila*, *maquila**women, and employment) shown in Figure

²³ This simulation is not a counterfactual of how the Honduran economy would have looked in the absence of a *maquila* sector. Creating such a scenario would require estimates of the general equilibrium effects of the sector. Therefore this simulation should be seen as an upper bound estimate of the poverty reduction effects of the *maquila* boom.

3.²⁴ On average the *maquila* sector accounts for an almost 1.45 percentage point reduction in the poverty headcount, of which 1 point is attributable to employment creation, 0.35 points to *maquila* wage premium, and 0.10 to the wage premium of women working in the *maquila* sector.

These poverty effects seem rather small. One has to bear in mind, however, the limited impact of the *maquila* sector in terms of overall household income. Wages paid in the *maquila* sector account for less than 4 per cent of total household income in Honduras. Furthermore, the incidence of poverty among *maquila* workers is lower than the national average (see Table 3). Finally, as shown by the results of the dynamic model, the premia paid in the *maquila* sector did not increase as a result of the boom. These factors explain why the reduction of poverty attributable to the additional premium paid to workers in the *maquila* sector (including the women's premium) is on average less than 0.5 per cent.

Over time this premium contributed more and more to poverty reduction: in 1991 it accounted for 0.2 per cent of the decline in poverty; by 2006 it had contributed 0.6 per cent. Expansion of the *maquila* sector means that more people benefit from the additional gender-*maquila* premia and more individuals escape poverty. Although the *maquila* boom of the 1990s did not have a significant effect on wage premia, given the jobs it created, particularly jobs for women, it certainly helped alleviate poverty in Honduras.

Two important qualifications of the results concerning the poverty effects of the *maquila* boom are necessary. First, these results represent an upper bound of the contribution of the *trade (maquila)-gender* link to poverty reduction given that the simulation considers the extreme situation in which no other jobs would exist without the *maquila* sector ones. A full general

²⁴ The poverty effects attributable to the different components are equal to the marginal difference in the poverty headcount shown by the cumulative effects presented in Table 8. There is an obvious problem of path dependency in our simulations.

equilibrium analysis is needed to overcome this limitation, but applied general equilibrium analysis has, in turn, other problems. The second qualification is that even if the effect is large *relative* to the small number of women involved, this does not imply that expanding the *maquila* sector is the most efficient policy for poverty reduction. Growth of *maquila* employment has some indirect gender equalizing benefits, but policies directly affecting inequality of opportunity in education access and other forms of gender discrimination are likely to produce larger effects.

V. Conclusions

Between 1990 and 2006, Honduras experienced significant poverty reduction and a booming *maquila* sector, a sector that intensively employed female workers. This article identifies and estimates the strength of the reduction in poverty caused by the improved opportunities the expanding sector offered to women.

The analysis shows that after controlling for observable characteristics, workers in the *maquila* sector earned wages that were about 30 per cent higher than those of workers outside the sector. This gap was fairly stable over time. Firms in the *maquila* sector appear to be less discriminatory, as suggested by a gender wage gap that is 16 per cent smaller than the gap outside the *maquila* sector.²⁵ This result is in line with the literature on labour market discrimination, which posits that firms operating in more competitive product markets should be less discriminatory in their hiring or remunerating policies. Given the intensity of its use of female labour, the expanding *maquila* sector contributed to the economy-wide reduction in the gender wage gap in Honduras.

²⁵ The difference declined in 2006.

With these econometric results, we ran a partial equilibrium simulation exercise showing that, at a given point in time, poverty in Honduras would have been 1.5 percentage points higher had the *maquila* sector not existed. This simulation is also useful for answering the main question posed at the outset of the paper: how important are gender effects in determining the relationship between trade changes (specifically *maquila* expansion) and poverty reduction? Of the total *maquila*-related poverty reduction of 1.5 percentage points, 1 point, or 69 per cent of the total, is due to employment creation; 0.35 percentage points, or 24 per cent, is attributable to the wage premium paid to *maquila* workers (both women and men); and 0.1 percentage points, or 7 per cent, to the wage premium received specifically by women in the *maquila* sector. Given the limited poverty effects of *maquila* expansion overall (around 1.5 percentage points) and despite its positive impact via gender equality, *maquila* promotion, by itself, has limited effectiveness and is not by itself an adequate solution to the problem of poverty in Honduras.

Annex 1: Main Factors behind Expansion of the *Maquila* Industry in Honduras

US Trade Preferences

Outward processing is essentially a preferential trade arrangement that exempts from import duties all the materials used in a sector whose products are entirely exported (i.e. a *maquila*). The outward-processing programmes in apparel and textiles under the Caribbean Basin Initiative (CBI) are among the most successful preferential trade arrangements; since the 1980s they have become an important part of US apparel imports. The CBI, established in 1983, originally left in place custom duties on a small group of products, including textiles and clothing. In 1986 the United States instituted the Special Access Program (SAP), which encouraged outward-processing trade in apparel and textiles with the beneficiary countries of the CBI. It also provided preferential market access and maintained the rules of origin. In 2000 the United States adopted the Caribbean Basin Trade Partnership Act of 2000 (CBTPA), which improved preferential treatment of outward-processing apparel from CBI countries. The new act eliminated all tariffs (which averaged 5.8 per cent in 1998–99) and maintained the SAP requirements of the usage of US-made materials from import duties (see Skripnitchenko and Abbott 2003). The CBTPA spurred the *maquila* industry in the CBI region, offsetting the effect of ‘NAFTA parity’.

Export Incentives, Logistics, and the Cost of Labour

The development of the *maquila* industry has been supported by a special legal framework that provides incentives such as temporary import and duty-free import on inputs for exports, originating in 1976 with the adoption of the law establishing the free zone of Puerto Cortés (Decree No. 356 of July 1976). A second law (the Decree No. 30 of December 20, 1984) created the temporary import regime. The law establishing export processing zones (Decree No. 37-87 of April 1987) enhanced the expansion of the *maquila* industry, providing incentives to develop large private industrial parks in which to establish *maquila* enterprises. Decree No. 130-98 of May 20, 1998, amended the law establishing the free trade zone of Puerto Cortés to allow the organization of free trade zones in any part of Honduras. These export-supporting schemes are subject to the disciplines of the World Trade Organization (WTO) Agreement on Subsidies and Countervailing Measures. However, as a developing country listed in Annex VII (b) of the Agreement, Honduras can apply to maintain these schemes beyond 2009 if per capita GNP does not surpass \$1,000 in constant 1990 US dollars for three consecutive years. Honduras’ relatively short end-to-end logistic time, good facilities in free export zones, the largest port in Central America, and fairly low wages are important assets for the continued growth of Honduras’ *maquila* industry. In March 2006 Honduran and US authorities signed the Container Security Initiative (CSI), a partnership that should help accelerate the entry of cargo from Puerto Cortés into the United States.

The DR–CAFTA Free Trade Agreement and the WTO

The DR–CAFTA spurred the *maquila* sector in Central America. However, the January 1, 2005 inclusion of textiles and apparel in the WTO rules has resulted in declining demand in the United States for CBI outward-processing apparel, which faces strong competition from countries such as Bangladesh, China, and Vietnam. In addition, the negotiations within the deferred Doha Round that are expected to reduce tariffs in the industrial sector (known as NAMA, for non-

agricultural market access) are likely to result in the erosion of the DR-CAFTA market access preference for textile and clothing. Low et al. (2005) argue that Honduras will be one of the developing countries most severely affected by the erosion preferences in NAMA, indicating that an important part of the erosion would come from the textile and apparel sector.

Annex 2: Identifying Employees in the *Maquila* Industry from Honduras' Household Surveys (EPHPM)

Before 2006 the Honduras household survey (EPHPM) did not include information on *maquila* labour participation. This Annex shows how workers were classified into *maquila* versus non-*maquila* for years prior to 2006.

In 2006, the EPHPM shows that firms within the *maquila* regime and part of the textile and apparel industry are highly concentrated in a few departments (or provinces) in Honduras.²⁶ In all years, the EPHPM reports information on employees working in the manufacture of textiles, knitting mills, or the manufacture of apparel, except footwear, as classified by the UN International Standard Industrial Classification of all Economic Activities, Third Revision (ISIC Rev. 3).

For years other than 2006, when the question about working in a *maquila* was not included, a worker was classified as being part of the *maquila* industry when the following conditions were satisfied: currently employed, employed by the private sector, working in the textile and apparel industry, working in an establishment with ten or more workers, and located in departments where *maquila* operate.

In order to evaluate the 'goodness of fit' of these classification criteria, workers were classified into *maquila* and non-*maquila* in 2006 following the procedure described above and compared with the observed classification. In 98 per cent of the cases, this procedure correctly identified workers in the *maquila* sector and part of the textile and apparel industry giving us a high level of confidence in the approach.

²⁶ The departments with a high concentration of *maquila* firms are: Cortes, Atlántida, Francisco Morazán, Yoro, Santa Bárbara, Comayagua.

References

- Arbache, J. S. and Santos, M. H. (2005). "Trade openness and gender discrimination", University of Brasilia, Brazil, available at SSRN: <http://ssrn.com/abstract=812564>
- Artecona, R. and Cunningham, W. (2002) "Effects of trade liberalization on the gender wage gap in Mexico", Policy Research Report on Gender and Development Working Paper Series no. 21, The World Bank.
- Banco Central de Honduras. 2006. *Balanza de pagos y comercio exterior de Honduras*. Tegucigalpa.
- . 2007. *Actividad maquiladora en Honduras 2006 y expectativas 2007*. Tegucigalpa.
- Becker, G. S. (1971) "*The economics of discrimination*", The University of Chicago Press, Chicago and London
- Bourguignon, François (2002) "The growth elasticity of poverty reduction : explaining heterogeneity across countries and time periods," DELTA Working Papers 2002-03, DELTA (Ecole normale supérieure).
- Bussolo, Maurizio and Round, Jeffrey (2006) *Globalisation and Poverty: Channels and Policy Responses*, Routledge/Warwick Studies in Globalisation
- De Hoyos, R. E. (2009) "Expansión comercial, pobreza y desigualdad en México después del TLCAN" in Flores, Treviño and Valero (editors) "*La economía Mexicana en 19 miradas*", Editorial Porrúa, México
- (2011) "Female labor participation and occupation decisions in post-NAFTA Mexico" *Research in Labor Economics*, vol. 33, pp. 85 – 127.
- De Hoyos, R. and Lustig, N., (2009) "Apertura comercial, desigualdad y pobreza. Reseña de los enfoques metodológicos, el estado del conocimiento y la asignatura pendiente," *El Trimestre Económico*, Fondo de Cultura Económica, vol. 0(302), pages 283-328, abril-jun
- Foster, J., J. Greer and E. Thorbecke (1984) "A class of decomposable poverty measures", *Econometrica*, 52, 761-766.
- INE (Instituto Nacional de Estadísticas). (several years) *Encuesta Permanente de Hogares de Propósitos Múltiples*, 1991, 1995, 2001, and 2006. Tegucigalpa.
- Jansen, Hans G.P. & Morley, Samuel & Kessler, Gloria & Pineiro, Valeria & Sánchez, Marco & Torero, Maximo (2007) "The impact of the Central America Free Trade Agreement on the Central American textile maquila industry," IFPRI Discussion Papers 720, International Food Policy Research Institute (IFPRI)
- Low, Patrick, Roberta Eiermartini, and Jurgen Richtering (2005) "Multilateral Solutions to the Erosion of Non-Reciprocal Preferences in NAMA." WTO Working Paper ERSD–2005–05, World Trade Organization, Geneva.

- Nissanke, Machiko and Thorbecke, Erik (2006) "The Impact of Globalization on the World's Poor, Transmission Mechanisms." Palgrave Macmillan
- Morley, S., Nakasone, E. and Piñeiro, V. (2008) "The Impact of CAFTA on Employment, Production and Poverty in Honduras", Discussion Paper No. 748, International Food Policy Research Institute, Washington, DC.
- Nicita, Alessandro & Razzaz, Susan (2003) "Who benefits and how much? : how gender affects welfare impacts of a booming textile industry," Policy Research Working Paper Series 3029, The World Bank.
- Ravallion, Martin, (2001) "Growth, Inequality and Poverty: Looking Beyond Averages," *World Development*, Elsevier, vol. 29(11), pages 1803-1815, November
- República de Honduras (2005) "Estimación del Impacto del DR-CAFTA en el Bienestar de los Hogares", Documento de Trabajo, Secretaria de Estado del Despacho Presidencial, Honduras
- Skripnitchenko, A., and P. Abbott (2003) *Trade in Apparel to the U.S. under the Caribbean Basin Initiative: A Dynamic Investment Approach*. Paper presented at the international conference "Agricultural Policy Reform and the WTO: Where Are We Heading?" Capri, Italy, June 23 - 26.
- Ver Beek, K. A., (2001) "Maquiladoras: Exploitation or Emancipation? An Overview of the Situation of Maquiladora Workers in Honduras," *World Development*, Elsevier, vol. 29(9), pages 1553-1567, September.
- Winters, L.A., McCulloch, N. and McKay, A. (2004) 'Trade Liberalization and Poverty: The Evidence So Far', *Journal of Economic Literature* 42.1:72-115