

FOREIGN DIRECT INVESTMENT AND WAGES: A BARGAINING POWER APPROACH

Ramya M. Vijaya
Department of Economics
Richard Stockton College of New Jersey
vijayar@stockton.edu

Linda Kaltani
World Bank
lkaltani@worldbank.org

ABSTRACT

This paper presents a cross-country empirical investigation of the impact of Foreign Direct Investment (FDI) on manufacturing wages. Our results indicate that FDI-Flows have a negative impact on overall wages in the manufacturing sector and this impact is stronger for female wages. We argue that one possible explanation for such an impact may be a decrease in the bargaining power of labor due to new labor market arrangements in a global economy where capital is free to move across countries in search of more favorable conditions. This decline in labor power also tends to have a greater impact on the more vulnerable workers female workers whose bargaining positions have been traditionally lower than male workers.

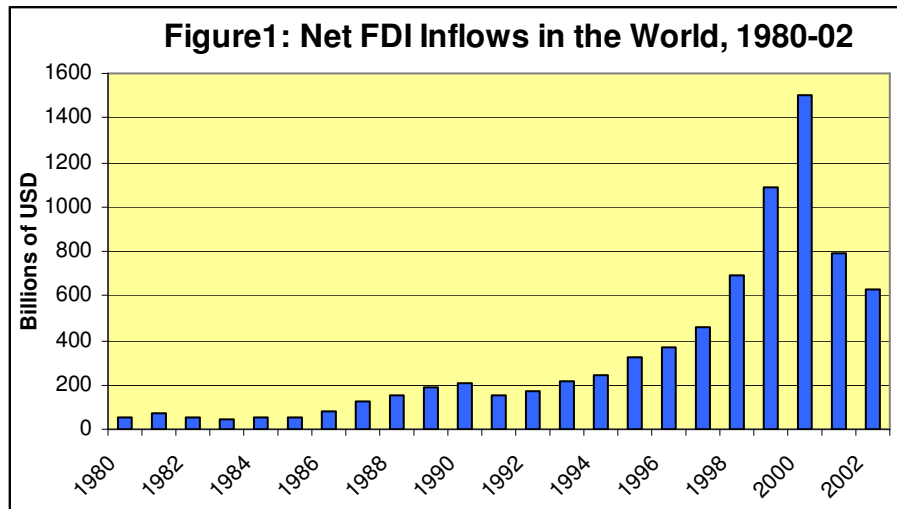
INTRODUCTION

Foreign direct investment (FDI) has gained considerable attention as a channel of knowledge diffusion and a source of accelerated growth in the economics literature. On the other hand a substantial literature in sociology has critiqued increased foreign capital penetration into developing economies as leading to debilitating economic dependency and slower economic growth. However in both the economics and sociology literature, there is very limited exploration of the impact of FDI on workers' wages across countries. In this study we combine elements of both streams of literature to investigate the impact of foreign direct investment on manufacturing wages for a panel dataset of both developed and developing economies.

We find that FDI-flows have a negative impact on average manufacturing wages and on female manufacturing wages. We argue that this negative impact can be understood in the context of a political economy framework where wages determination is based on a bargaining process between labor and capital. Increased capital mobility causes a decrease in the bargaining power of labor and can therefore have a negative impact on wages in both developed and developing economies. Moreover incorporating insights from feminist economics literature we also argue that existing inequalities in the labor market experiences of female workers make it more bargaining abilities make it more likely that the impact of the decline in bargaining decline in bargaining power is felt more strongly cause a gender differentiated pattern in the way in which FDI impacts worker's wages.

FDI TECHNOLOGY SPILLOVER AND ECONOMIC GROWTH

In the past two decades, FDI flows have increased to unprecedented levels and have become one of the major sources of financing for many countries in the world (Figure 1). The World Bank definition of foreign direct investment is the acquisition of “a lasting management interest (10 percent or more of the voting stock) in an enterprise operating in an economy other than that of the investor.” Due to the relative stability and long-run commitment to the firm, FDI is perceived as the type of capital that entails the greatest amount of direct and indirect benefits (spillovers) for the host economy¹.



The indirect benefit or spillover from FDI that has received wide attention in the economic literature is the potential access that domestic firms might get to new technologies that can improve their productive capacity¹. From a theoretical point of view, in order for foreign firms to compete effectively with locally networked firms, they must possess certain special characteristics in the form of cost advantages, advanced technologies or product superiority that justify their investment in a foreign country (Dunning, 1977)². For this reason FDI can imply an introduction of previously non-existent technologies and/or organizational patterns into the host economy. Moreover factor mobility in the host economy may lead to the spillover of these new technologies. That is, as the labor force moves from foreign firms to domestic ones they take away some of the knowledge previously acquired and spread it to the rest of the economy.

Dunning also argues that as local firms experience the presence of foreign firms, additional spillovers may also be triggered due to demonstration effects (i.e. copying the MNCs), backward linkages with the foreign firm, the opening of foreign markets for domestic suppliers, and the creation of better infrastructure due to the clustering of foreign firms in certain locations (i.e. agglomeration).

Measuring the size of such spillovers has been a major focus of the economics literature on FDI. The empirical studies however have in general been inconclusive and thus of little help to policymakers. For instance, Caves (1974), Globerman (1979), Blomstrom and Person (1983), Blomstrom (1986), and

¹ While the indirect benefits are discussed in more detail below, direct benefits from FDI come in the form of increased capital and the more rapid restructuring of the newly acquired firm

² Dunning (1977) in his OLI paradigm describes the conditions under which a firm chooses foreign investment over exports. These conditions in turn can justify the expectation of spillovers from FDI for the host economy.

Aitken, Harrison, and Lipsey (1995) all find positive evidence of productivity spillovers in Australia, Canada, Mexico and the U.S. On the other hand Aitken and Harrison (1999) find that the increase in the presence of foreign firms leads to lower productivity in Venezuelan firms and Konings (2000) finds no evidence of positive spillovers in firm level data for Bulgaria, Romania and Poland.

In the sociology literature on the other hand FDI has been viewed as part of the process of neo-colonial oppression where capital from the core developed countries continues to exploit the periphery. This dependency literature examined in the influential study by Bonschier and Chase-Dunn (1985) and in later works, suggests that through the repatriation of profits and interests to the core developed economies FDI continues to extract surplus from the periphery economies. In addition increased penetration of foreign capital also increases the focus on the exporting sector thereby preventing the development of a cohesive internal economic structure. In the same vein the power that foreign capital wields in an underdeveloped country can prevent the implementation of independent domestic policy intended to nurture new and fledgling domestic industries. Therefore FDI stunts long-term growth prospects in developing economies.

Like the economics literature on spillovers, the empirical evidence for the dependency theories has also been mixed. There has been considerable debate about the relevance of using different measures of FDI such as, flow, stock or the rate of FDI where the latter is the ratio of the flows to the stocks. For example Dixon and Boswell (1996) find a positive impact of the flow variable on GDP growth and a negative impact of the stock variable. This they argue is consistent with the long-term structural distortions caused by accumulating FDI. However Firebaugh (1996) questions this flow vs. stock distinction by showing a positive coefficient for the FDI rate in a growth regression. Firebaugh argues that if the rate has a positive impact on growth then the value in the denominator of the rate which is the stock, will have a negative coefficient as demonstrated by Dixon and Boswell.

FDI AND INEQUALITY

While the evidence for the impact of FDI on economic growth is mixed, there are also other channels through which FDI could have an impact on the host country. Specifically there is a strong potential for FDI to impact income patterns within the domestic economy. According to neo-classical economic theory the addition of new capital and the increases in knowledge brought about by the presence of foreign producers should lead to higher productivity of labor. This in turn should lead to higher wages since wages reflect the productivity of labor. Moreover with labor mobility, as workers move from foreign to domestic firms, they carry with them the knowledge they acquired and that is now embodied in them. Therefore labor productivity can increase in the entire economy. Thus there is a potential for wage increases to spillover to other sectors of the economy. Even if the technology is not directly embodied in the workers, the spread of disembodied ideas regarding new organizational and production methods and the higher levels of capital in the economy should increase the productivity of labor and therefore wages throughout the economy.

The few empirical studies on FDI and income in the economics literature have largely focused on measuring this wage spillover impact in case studies of developed economies. The results indicate positive spillovers for only a few developed economies. For example Girma, Greenaway, and Wakelin (2001) find FDI-related positive wage spillovers in the UK and Lipsey 1995 finds a positive wage impact of FDI for the US. There has been very limited focus in the neo-classical economics literature on the impact of FDI on incomes in developing economies. Moreover all the studies assume that there will be a positive or at best a neutral impact of FDI on wages due to the potential productivity increase that FDI brings about.

On the other hand theorists in the Marxist political economy tradition have long critiqued this assumption of a perfect link between productivity and wages. They argue that the wage is a result of the bargaining process between employees and employers and the outcome is dependent on the relative strengths of labor vs. capital (Reich 1985, Bowles and Gintis 1990). Extending this analysis the

diminishing power of labor when confronted with a capital that is highly mobile (FDI) might make it likely that the productivity gains are not passed on to labor.

Similarly the dependency literature in sociology also has a long tradition of examining the impact of FDI on inequality in developing economies. As foreign investments induce a distorted focus on the international (exporting) sector, an enclave of elite employment is created while at the same time displacing many workers by the adoption of capital-intensive technologies. This in turn increases income inequalities (Bornschiefer and Chase-Dunn 1985, and Evans and Timberlake 1980). Taking into account the critique of Firebaugh regarding the flow and stock variables later studies such as Alderson and Nielsen (1999) examine the impact of FDI on inequality by including the FDI stock as well as the FDI rate as explanatory variables. Alderson and Nielsen report that the FDI rate has a positive impact on income inequalities as measured by the gini-coefficient, therefore supporting the hypothesis of the dependency theories regarding FDI and increasing inequalities in developing economies.

The focus of the inequality and FDI literature in sociology is on developing economies and the dependent variable of choice is economy wide measures such as the gini-coefficient. Inequality here is viewed as a symptom of a country's position in the world system where the interaction of the core with the periphery causes inequalities in the periphery. Increasingly however globalization-related inequalities have also been a matter of concern in developed economies. While the tremendous growth in FDI inflows across the world (see figure 1) points to the heightened mobility that capital has been able to achieve, a majority of this movement continues to be between the developed economies. FDI inflows into developed economies continued to account for about 70 percent of total world FDI inflows in the years 2000-2003 (UNCTAD FDI statistics). This heightened mobility of capital has increasingly raised concerns about declining wages and declines in the bargaining capacity of relatively immobile labor in developed economies particularly in the manufacturing sector.

This suggests that in the new order of globalization in addition to the position of the country within the world systems, the position of (immobile) labor in relation to (mobile) capital also makes a difference to who benefits from globalization. It would therefore be valuable to extend this research on FDI and inequality to include both developing and developed countries.

Similarly the focus on wages as opposed to economy-wide measures such as gini-coefficients allow for a more nuanced understanding of the channels through which FDI can cause inequalities. It not only allows us to focus on specific sectors such as manufacturing, but it also makes it possible to focus on specific groups of workers. This is particularly important since feminist economics literature has provided strong evidence to suggest that one of the predominant trends in globalization has been the increasing dependence on and exploitation of female labor - a process referred to as the feminization of the labor force (Standing 1999, Cagatay, Ozler 1995). Thus focusing on wages as opposed to country-wide gini-coefficients allows for the comparison of the relative positions of female vs. male labor within the world system.

We therefore present an empirical analysis that extends the study of FDI and inequality by focusing on the impact of FDI on wages (male and female). We use the political economy bargaining power framework of wage determination to provide a theoretical basis for the specific impact of FDI on wages.

FDI-WAGES: A POLITICAL ECONOMY APPROACH

The importance of bargaining power in wage setting has gained attention in theoretical and empirical political economy analysis. For example, Reich (1985) and Bowles and Gintis (1990) lay the theoretical foundation for linking wages to bargaining power. They argue that while work contracts can specify the number of hours worked, they cannot guarantee the actual level of work effort during those hours. There is always the possibility that workers will display a "whistle-while-you-work" level of work effort. In other words, the labor contract is not automatically enforceable and is a "contested exchange". Therefore the employer and employees are always engaged in a process of bargaining to decide the actual work

effort and the wage. Reich (1985) finds that divisions amongst workers has a negative impact on wages in the U.S. since such divisions lower the collective bargaining ability of labor. Similarly Rodrik (1999) finds cross-country evidence to suggest that democracies pay higher wages. This is explained by the fact that there are greater collective bargaining opportunities for workers in a democracy.

The above political economy framework of wage setting can be used to question the neo-classical economic assumption that the technology gains from FDI will be passed on to the workers through increased productivity and wages. Different kinds of impacts can be expected on the wage bargaining process from the increase of foreign ownership in the economy. Elaborating on the wage bargaining process, Skillman (1991) summarizes three factors that influence the outcome (i.e. wage earned) - the cost of bargaining for each party (in this case the employer and the employee), the outside options of each party, and the rules governing the bargaining process. These factors can be useful in thinking about the influence of FDI. Since by definition FDI is mobile, it increases the outside options of capital (or employers). That is higher FDI presence in a sector could lead to lower bargaining power for labor vis-à-vis the capital that has the propensity to move to a lower cost destination. The final outcome may be that the weaker partner, in this case the worker, may have to accept a lower payoff (wage). Therefore wages may exhibit a tendency to remain low in sectors that have high capital mobility or high FDI.

In addition, rising competition that may stem from the new foreign firms may lead to increased pressure for domestic firms to engage in cost-cutting practices. This could lower workers' outside options even more and lower their bargaining power even further. Moreover the increased presence of FDI can also set into motion institutional changes that impact the rules governing the bargaining process. Blomstrom and Kokko (2003) survey several special incentives and changes in business rules that countries have undertaken in order to attract more FDI. These incentives range from special subsidies to foreign firms to changes in tax regimes and establishment of export processing zones (UNCTAD 1995). Each of these measures can have the dual impact of changing the bargaining rules in favor of capital and lowering the cost of bargaining for capital and therefore reducing the relative bargaining power of workers.

Another related and important empirical question that follows from the above political economy analysis is the differential impact of FDI on male and female wages. Feminist economic literature has provided strong theoretical arguments to suggest that bargaining power in labor markets has a distinct gender pattern and therefore leads to gender differentiated wage outcomes. Elson (1999) expounds a thesis that is similar to the contested exchange theory of Bowl and Gintis but with a gender perspective. Since employers have imperfect information about the actual work effort that potential employees will expend, they are more likely to favor specific groups who are historically perceived to be "better workers". Elson argues that employers "systematically underestimate the productive potential of women". In effect, men are more likely to be chosen to receive the higher wage in order to induce them to work harder. This underestimation of women's productive potential in the market economy stems from the largely unequal distribution of the burdens of 'non-market' household work. Feminist economists have argued that while household work is "non-market" only in the sense of not receiving the traditional market reward of wage, it is a vital input for the market economy. That is, it ensures the reproduction of the labor force. As Nancy Folbre (1994) argues, women "pay for the kids" (who then become the future labor force) through their greater participation in household labor or the care sector of the economy.

However since this work is not accounted for in the traditional free market analysis, it is not valued in the market. Instead women are penalized in the market for the time they spend in the care economy by the perception of low productivity. Moreover due to their greater participation in the care sector, women also have less mobility and time flexibility when taking up market work. This, in turn leads to lower outside options and therefore lower female bargaining power.

In this context increasing foreign presence need not necessarily have a uniform impact on men and women. While the increasing mobility of capital lowers both male and female bargaining power, it can have a greater impact on women's bargaining power since their options in the market economy are traditionally limited. On the other hand the potentially greater opportunities for skill advancements presented by FDI are more likely to be offered to men, given the perception of their greater productivity

vis-à-vis women. This pattern can therefore lead to a differential impact on male and female wages. In fact there is some empirical evidence suggesting that globalization increases the gender wage gap. Berik, et al. (2003) find that increased competition from foreign trade increases gender wage discrimination in Taiwan and South Korea. This has been attributed to the cost cutting pressures in female-intensive exporting industries and to women’s traditionally lower bargaining power in their wage negotiations.

As mentioned before very few studies examine the impact of FDI on wages, gender-differentiated or otherwise. In the economics literature, there are only a few case studies of a few economies such as Lipsey (1995) and Girma, Greenaway, and Wakelin (2001). These studies primarily focus on FDI in the manufacturing sector. In the sociology literature the focus is on overall measures of inequality such as the gini-coefficient and not on wages. Moreover the analysis is limited to developing economies. However the changes in bargaining power described above can occur in both developing as well as developed economies. There are no analyses that we know of that look at this possible impact of FDI on wages in both developed and developing economies.

In the following empirical analysis we test the impact of FDI on wages using a panel dataset that includes both developed and developing economies. We view FDI as having an impact on wages through the changes in the relative bargaining positions of labor and capital. Given the gender differences in bargaining experiences, we do also do a separate analysis of male and female wages. The analysis here is focused on manufacturing wages since this sector has been at the center of the globalization debate for most of the past decade. It is more recently that globalization in services has received considerably attention and consistent cross-country wage data for services are still not clearly defined or available. Moreover gender disaggregated average wage data is also most consistently available only for the manufacturing sector. The following section presents a derivation of the empirical equation followed by a description of the data.

EMPIRICAL MODEL

We start with the traditional economic specification of wages (Lipsey et al) where the wage is influenced by factors which impact productivity - the number of workers and the amount of (domestic) capital they have to work with and the general price level in the economy.

$$Wage = \alpha_1 Price + \alpha_2 Capital + \alpha_3 Labor..... (1)$$

The higher the amount of capital the higher the productivity and so capital should have a positive impact on wages. Similarly as the general price level rises, wages also tend to increase. On the other hand a larger number of workers (labor) lowers the productivity of labor and consequently has a negative impact on the wage.

This traditional approach however does not account for the possible impact of relative bargaining strengths of labor and capital. As discussed before bargaining power can be influenced in various ways by the presence of FDI. Since FDI represents greater capital mobility, it can have a negative impact on labor bargaining power in the foreign-owned firm. In addition, it can also lead to competitive pressures on local firms to look for lower labor costs, once again reducing worker bargaining power. We therefore expand the wage equation to include FDI.

We introduce the FDI variable as both a stock and a flow variable. Moreover in the empirical analysis we also introduce the FDI rate in order to test the Firebaugh critique, where a negative coefficient for the stock may be due to positive impact of the FDI rate. Since the empirical analysis is conducted on a diverse group of countries, it is important to also control for the relative size and level of development of the economies. We use the one period lagged value of GDP per capita as a control. Since wages in the current period are a component of the GDP in the current period, we used the lagged values of GDP per capita instead of current values in order to avoid causality and collinearity issues. We also log all the variables in order to account for non-linearities that are often present in a wage model.

DATA SOURCES

The empirical analysis is based on a panel dataset of a diverse group of countries. Since the surge in importance of FDI has been most evident since the late 80s, the panel ranges from 1987-2001 where the end year of the sample is determined by data availability.

Data on wages come from the International Labour Organization (ILO) database on labor statistics (LABORSTA). The database provides wage data disaggregated by gender and by economic sectors. In order to establish some consistency and given data availability, the average wage for the manufacturing sector is used for this analysis. The data used in this paper are female, male, and an average non-gender specific average manufacturing monthly wages for employees and wage earners.

Data on FDI is still sparse despite the growth of the phenomenon in the past decades. The only consistent source of sectoral FDI flows and stock is the series from the United Nations Conference on Trade and Development (UNCTAD). This dataset includes the total FDI from all source countries into the particular host economy, and therefore it is the ideal measure of sectoral (in this case the manufacturing sector) FDI. Unfortunately the overlap between the wage and FDI data is not complete and thus we are forced to leave out countries that only have data availability for FDI or wages. Price data come from the World Bank's World Development Indicators (WDI) consumer price index (CPI).

The total manufacturing employment data are from the ILO. Domestic capital data for total manufacturing are collected from the United Nations Industrial Development Organization (UNIDO). However, the cross-sectional coverage of such a variable is quite low, and thus we had to resort to a secondary measure of manufacturing capital. We therefore had to construct a proxy for manufacturing capital using total gross fixed capital formation data from the World Bank's World Development Indicators (WDI). We first converted the WDI capital data into a stock variable using the perpetual inventory method. We then multiplied total capital with the share of manufacturing value added

Table 1. Descriptive Statistics

Variables	Mean	St. Dev	Minimum	Maximum
Female wages (logs)	6.73	0.93	4.25	8.28
Male wages (logs)	7.12	0.86	5.30	8.47
Average wages (logs)	6.93	0.95	4.52	8.41
FDI-FLOW (logs)	6.91	1.8	1.8	10.82
Employment (logs)	13.4	1.03	11.51	15.68
Domestic Manufacturing capital (logs)	24.41	1.3	20.83	26.32
Price (logs)	3.23	4.46	-20.75	5.59
FDI-STOCK (logs)	22.52	1.54	18.18	25.08
GDP-Per Capita (logs)	9.32	0.99	6.86	10.50

Table 2. Country List

Australia	Mexico
Austria	Netherlands
Belgium	Norway
Brazil	Philippines
Costa Rica	Paraguay
Cyprus	United Kingdom
Denmark	Singapore
Finland	Korea(South)
France	Sweden
Ireland	

Table 3: Bivariate Correlations

	Wage	Male Wage	Female Wage	GDP	Capital	FDI-Flow	CPI	Emp.	FDI-Rate	FDI-stock
Wage										
Male Wage	0.48									
Female Wage	0.47	0.97								
GDP	0.93	0.59	0.58							
Percap										
Domestic Capital	0.50	0.04	0.03	0.53						
FDI-Flow	0.39	0.24	0.23	0.51	0.84					
CPI	0.09	0.19	0.19	0.23	0.42	0.52				
Employment	-0.02	-0.64	-0.66	-0.12	0.48	0.31	0.02			
FDI-Rate	-0.13	-0.07	-0.09	-0.09	-0.12	0.18	0.13	-0.08		
FDI-stock	0.53	0.38	0.83	0.63	0.83	0.82	0.3	0.22	-0.26	

in GDP for each country to arrive at the proxy for manufacturing specific capital. We found that the overall correlation between manufacturing capital from UNIDO and our created capital variable for countries that do have both variables available is very high at 95 percent.

Table 1 presents the descriptive statistics for each of the variables and Table 2 lists the countries used in the estimation. As mentioned earlier the list of countries is constrained by the availability of both the FDI and wage data. The bivariate correlations between all the variables are included in Table 3.

ESTIMATION AND RESULTS

To the basic estimation equation described before, we add the time and country indices i and t and introduce the constant and the error terms A and e_{it} .

$$\text{Log } W_{it} = A + \alpha_1 \ln \text{Price}_{it} + \alpha_2 \ln \text{Capital}_{it} + \alpha_3 \ln \text{GDP-percap}_{it} + \alpha_4 \ln \text{Emp}_{it} + \alpha_5 \ln \text{FDI-Flow}_{it} + \alpha_6 \ln \text{FDI-Stock}_{it} + e_{it} \dots (3)$$

As noted there are considerable differences in the trajectory of male and female bargaining power and therefore wages. Therefore separate equations are estimated for male and female wages.

For a panel dataset the two commonly used estimation methods are the fixed-effects and random effects models. In the fixed effects model, a separate constant term is estimated for each country in order to capture systematic differences that are unique to each country. In the random effects model, the differences between the cross-sections are treated as parametric shifts of the regression equation and so a common constant is imposed, with other country specific characteristics being treated as part of the random error term. The random effects model therefore allows the variation between countries to be used in the estimation of the regression coefficients and this could lead to more significant results. However since our dataset includes countries with different levels of development, the differences amongst them may be systemic, necessitating the fixed effects model (Greene 1990). In order to test whether such systemic difference exists the Hausman chi-square test (Hausman 1978) was implemented following Alderson and Nielson. For the male and female wage regressions, the test indicates that separate constant terms are necessary for each country and therefore the fixed effects model was adopted. For the average wage regression on the other hand, the test indicates that a common constant may be imposed, with country specific characteristics being treated as part of the random error term. Therefore the random effects model was adopted for the average wage regression. The Hausman test statistic is reported in the results tables.

Table 4 presents the results for the average manufacturing wage regressions. In Equation I the wage is a function of lagged GDP per capita, domestic capital, total employment, the price level, and FDI flow. Following Alderson and Neilson, equations II III are estimated with the FDI stock and the FDI rate and with the FDI-flow and FDI-Stock respectively. The coefficients of the per capita GDP is positive and statistically significant in all the equations indicating unsurprisingly that higher the level of development the higher the wages. The FDI-Flow is negative and significant in equation I. In equation II, neither the stock nor the FDI-rate is statistically significant. When we include both the FDI-flow and the stock in equation III, the flow remains negative and significant.

The next two tables present the results from the gender differentiated wage regressions. The influence of FDI on the female wage regressions reported in Table 5 is similar to the average wage regressions. The FDI-flow continues to have a negative and statistically significant impact on wages. The FDI-stock and rate on the other hand are not statistically significant. The GDP-per capita once again has a positive and statistically significant influence on wages. In the male wage regressions presented in Table 6, neither the FDI-flow nor the FDI-stock has a significant influence on the wage in any of the specification.

Table 4. Manufacturing Wage Regression, 1987-2000

Variable	<i>I</i>		<i>II</i>		<i>III</i>	
	0.410	**	0.683	**	0.688	**
Ln GDP-PERCAP	(3.89)		(9.44)		(9.78)	
	0.243	**	0.087		0.102	
Ln Capital	(2.25)		(1.13)		(1.36)	
	-0.078		.001		0.003	
Ln Employment	(-1.23)		(0.06)		(0.13)	
	0.051		-.045		-.021	
Ln CPI	(0.50)		(-.51)		(-0.24)	
	-0.045	**			-0.056	**
Ln FDI-FLOW	(-2.03)				(-2.36)	
			-0.027		0.007	
Ln FDI-STOCK			(-0.61)		(0.17)	
			-0.011			
Ln FDI-RATE			(-0.41)			
R-square	0.43		0.87		0.88	
Baltagi-Wu	1.76		1.65		1.68	

t-statistics in parentheses

Hausman Test HO: Difference in coefficients not systematic

Chi2: 6..35

Prob> Chi2: 0.273, HO: Cannot Reject HO

*Significant at 90% confidence interval

**Significant at 95% confidence interval

Table 5. Female Wage Regression, 1987-2000

Variable	<i>I</i>		<i>II</i>		<i>III</i>	
	0.232	**	0.223	**	0.244	**
Ln GDP-PERCAP	(2.41)		(2.24)		(2.50)	
	0.379	**	0.327	**	0.311	**
Ln Capital	(6.89)		(4.11)		(4.22)	
	-0.926	**	-0.906		-0.906	**
Ln Employment	(15.22)		(-12.83)		(-14.39)	
	0.268	**	0.266	**	0.277	**
Ln CPI	(2.11)		(2.00)		(2.71)	
	-0.021	*			-0.022	*
Ln FDI-FLOW	(-1.63)				(-1.67)	
			0.041		0.059	
Ln FDI-STOCK			(0.91)		(1.42)	
			-0.001			
Ln FDI-RATE			(-0.08)			
R-square	0.54		0.56		0.56	
Baltagi-Wu	1.65		1.66		1.64	

t-statistics in parentheses

Hausman Test HO: Difference in coefficients not systematic

Chi2: 12411.6

Prob> Chi2: 0.00, HO: Rejected

*Significant at 90% confidence interval

**Significant at 95% confidence interval

Table 6. Male Wage Regression, 1987-2000

Variable	<i>I</i>		<i>II</i>		<i>III</i>	
	0.311	**	0.297	**	0.317	**
Ln GDP-PERCAP	(3.42)		(3.18)		(3.41)	
	0.058		0.014		0.028	
Ln Capital	(0.80)		(0.15)		(0.32)	
	0.245		0.314	*	0.256	
Ln Employment	(1.45)		(1.82)		(1.53)	
	0.142		0.147		0.143	
Ln CPI	(1.02)		(1.01)		(1.02)	
	-0.013				-0.013	
Ln FDI-FLOW	(-0.83)				(-0.83)	
			0.017		0.024	
Ln FDI-STOCK			(0.38)		(0.57)	
			0.006			
Ln FDI-RATE			(0.33)			
R-square	0.26		0.32		0.26	
Baltagi-Wu	1.58		1.54		1.54	

t-statistics in parentheses

Hausman Test HO: Difference in coefficients not systematic

Chi2: 14.86

Prob> Chi2: 0.01, HO: Rejected

*Significant at 90% confidence interval

**Significant at 95% confidence interval

The above results provide support for the hypothesis that FDI could have a negative impact on wages in both developed and developing economies due to the changes it brings about in the relative bargaining positions of labor and capital. The FDI-flow variable can be particularly indicative of the volatile nature of global capital flows which increases options for capital which in turn reduces the bargaining position power labor.

The difference in the impact of FDI-flows on the male and female wage regressions is also supportive of the discussion presented in this paper. The changes in the relative strengths of labor and capital will have the most impact on the sections of the labor force that have the lowest bargaining abilities to begin with. As discussed before feminist economists have described the different gender constraints that create a disadvantage for female workers in the wage bargaining process. Therefore while male workers may be in a better position to benefit from the productivity improvements that FDI bring, it is women's wages that can be expected to experience the negative effects more strongly. This is also consistent with argument in the world systems literature that FDI can potentially increase inequalities by creating an enclave of elite employment.

CONCLUSION

The finding of a significant negative association between wages and the flow of FDI emphasizes the importance of questioning the distributional consequences of FDI. The link between FDI and wages cannot be assumed to be positive or at worse, neutral, as the productivity-based analysis in economic theory would indicate. Moreover the sectoral and gendered wage analysis presented here adds more detail

to the understanding of the mechanism through which FDI might impact inequality as compared to the gini-coefficient based studies in the world systems research literature.

As the emphasis on offering incentives to attract FDI is increasing, and FDI becomes an increasingly important component of economies, the potential changes to institutional structures within economies can be expected to increase. This analysis shows that even at current levels, FDI has had an impact on the wage setting process in the manufacturing sector. This negative impact of FDI can be explained if one looks at wage setting as a bargaining process. Since FDI represents more mobile capital, it lowers the bargaining capabilities of workers attached to the foreign firms. Moreover the foreign firms can also use the incentive of knowledge transfers as a tool to offer lower wages to their employees. This change in employee bargaining power can also spillover to the wage setting process in the domestic firms which face increasing pressure to cut cost and remain competitive with the foreign firms. As the above results do show a negative impact of FDI-flows on wages in the entire manufacturing sector, such a spillover does seem to have occurred.

Moreover the results also emphasize the different combinations of disadvantages within the world economic system. Besides the position of countries within the world system, the different positions of labor vs. capital indicates that even within developed economies there can be relative gains and losses. Similarly many feminist theorists have argued that gender adds to the dimensions disadvantages that are not always captured by class distinctions. For instance Hartmann (1981) points to the collusion between male workers and capital that keeps female wages low and ensures the supply of free household labor. In the case of FDI, while the overall bargaining position of labor might decline, groups of elite employees can gain from the contact with the foreign capital. These gains are also consistent with the economic analysis which focuses on the productivity gains from FDI. Given the gender history of labor market experiences, the elite groups are more likely to be male workers. The empirical analysis presented above indicates that this is indeed the case. The FDI-flow has a clear negative impact on female and overall average manufacturing wages but there is no corresponding significant impact on the male wages. As more sectoral wage and FDI data becomes available more such studies would be useful to emphasize the details that are often missing in the growth rate or overall gini-coefficient based studies.

REFERENCES

- Aitken, Brian, Ann Harrison, and Robert E. Lipsey. 1995. "Wages and Foreign Ownership: A comparative Study of Mexico, Venezuela, and the United States." *NBER Working Paper* No. 5102.
- Alderson, Arthur S. and Francois Nielsen. 1999. "Income Inequality, Development and Dependence: Reconsideration." *American Sociology Review* 64(4) 606-631.
- Berik, Günseli, Yana van der Meulen Rodgers, and Joseph Zveglic. 2003. "International Trade and Wage Discrimination: Evidence from East Asia." *World Bank Policy Research Working Paper* No. 3111.
- Blomstrom, Magnus. and Ari Kokko. 2003. "The Economics of Foreign Direct Investment Incentives." *NBER Working Paper* No. 9489.
- Bornschier, Volker and Christopher Chase-Dunn. 1985. *Transnational Corporation and Underdevelopment*. New York: Praeger.
- Bowles, Samuel. and Herb. Gintis. 1990 "Contested Exchange: New Microfoundations for the Political Economy of Capitalism." *Politics and Society* 18(2):165-242.
- Cagatay, Nilufer. and Sule. Ozler. 1995. "Feminization of the labor force: The effects of Long Term Development and Structural Adjustment." *World Development* 23(11):1883-1894.
- Dixon, William J. and Terry Boswell. 1996. "Dependency, Disarticulation, and Denominator Effects: Another Look at the Foreign Capital Penetration." *American Journal of Sociology* 102:543-62.

- Dunning, John. 1977. "Trade, Location of Economic Activity, and MNEs: In Search of an Eclectic Approach." Pp. 395-418 in *The International Allocation of Economic Activity*, edited by P. Heesselborn, B. Ohlin, and P. Wijkman. London, England: MacMillan.
- Elson, Diane. 1999. "Labor Markets as Gendered Institutions: Equality, Efficiency and Empowerment Issues." *World Development* 27(3): 611-627.
- Evans, Peter B. and Michael Timberlake. 1980. "Dependence Inequality, and the Growth of the Tertiary: A Comparative Analysis of Less Developed Countries." *American Sociology Review* 45: 531-51.
- Firebaugh, Glenn. 1996. "Does Foreign Capital Harm Poor Nations? New Estimates Based on Dixon and Boswell's Measures of Capital Penetration." *American Journal of Sociology* 102(2):563-575.
- Folbre, Nancy. 1994. *Who Pays for the Kids: Gender and the Structure of constraints*. New York: Routledge.
- Greene, William H. 1990. *Econometric Analysis*. New York: MacMillan.
- Hausman, Jerry A. 1978. "Specification Test in Econometrics." *Econometrica* 46:1251-1271.
- Hartmann, Heidi. 1981. "The Unhappy Marriage of Marxism and Feminism: Towards a More Progressive Union." Pp 1-41 in *Women and Revolution*, edited by L. Sargent Boston, MA: South End Press.
- Konings, Jozef. 2000. "The Effects of Direct Foreign Investment on Domestic Firms: Evidence from Firm Level Data in Emerging Economies." *CEPR Discussion Paper Series No. 2586*.
- Reich, Michael, 1981 "Racial Inequality: A Political Economy Analysis", Princeton University Press.
- Skillman, Gilbert. 1991. "Efficiency vs. Control: A Strategic Bargaining Analysis of Capitalist Production." *Review of Radical Political Economics*. 23: 12-21
- Standing, Guy. 1999. "Global Feminization through Flexible Labor: A Theme Revisited." *World Development* 27(3) 583-602.