Labor Market Flexibility as a Determinant of FDI Inflows

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Abstract

This paper shows that labor market flexibility, measured by labor market standards and regulations, has two opposing effects on FDI inflows. Labor market regulations and standards decrease FDI inflows through the cost channel, but they increase FDI inflows through the productivity channel. Allowing for a non-linear relationship between different indicators of labor market flexibility and FDI inflows revealed that some degree of labor market standards and regulations may be attractive for foreign investors. Results strongly suggest that foreign investments to and from different countries and in different sectors are affected differently by different aspects of labor market standards and regulations.

Key Words: foreign direct investment, labor market flexibility
JEL Classification: F16, F21

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I. Introduction

Globalization of production and more open economies have expanded the decision range of profit-maximizing firms on where to conduct business. A large portion of the literature on foreign direct investments (FDI) has examined the various determinants of FDI location. Some determinants of FDI location such as market size and distance are beyond the influence of policymakers in host countries. However, some institutional determinants such as tax and investment incentive structures are more malleable. One often-overlooked institutional determinant is the flexibility of the labor market. Labor market standards and regulations or any limitation placed on employment lead to labor market rigidity, which imposes costs on firms. Hence, a profit-maximizing firm would most likely want to locate in countries with more flexible labor markets. In addition, flexible labor markets afford firms more freedom to adjust to prevailing economic conditions. Therefore, it seems reasonable to assert that countries with rigid labor markets will have less FDI inflows. While the mainstream literature argues that a highly regulated labor market impose additional cost on firms, which may deter FDI inflows, another strand of the literature has claimed that a highly regulated labor market may help enhance labor relations and increase labor productivity. Moreover, by providing job security, labor market standards and regulations can add to social stability. And these attract FDI inflows.

While existing studies find *either* a positive or negative relationship between labor market flexibility and FDI inflows, no study has yet reconciled these two opposing effects, which I attempt to do in the current study. First, I present the simple model of Dewit, Gorg, and Montagna (2003) to demonstrate that labor market flexibility can have two opposing effects on the expected profit of a multinational company (MNC), and thus on the motivation of the latter to invest in other countries. I augment this simple model to show that the impact

of labor market flexibility on FDI inflows is ambiguous and not clear cut positive or negative as suggested by previous studies. Then, in my empirical specification, I allow for a non-linear relationship between labor market flexibility and FDI inflows. Previous studies have simply assumed that the relationship between the two is linear. Hence, when a negative relationship is found, the immediate policy implication is that countries should reduce their labor market standards and regulations to increase flexibility and therefore attract more FDI. However, when the possibility of non-linear effects is recognized, it may reveal that some degree of standards and regulations is valued by foreign investors and that it is only high degrees of standards and regulations that repels FDI. Thus, allowing for non-linearities can help reconcile the two opposing effects of labor market flexibility on FDI inflows.

Apart from the aforementioned, this study aims to contribute to the labor market-FDI literature in other ways. First, I use the International Labor Organization (ILO) Conventions that specifically pertain to hiring, at work, and firing standards to construct a simple measure of labor market flexibility. This is in contrast to previous studies that have used either the total number of ILO conventions ratified by each country or ILO conventions on workers' basic rights. In addition, I use the labor market flexibility indexes constructed by the World Bank (WB) from a survey of business people in over 150 countries. These indicators have not been previously used in the FDI-labor market flexibility literature. In contrast to previous studies that have used a single index to measure labor market flexibility, these indicators are disaggregated into hiring, hours at work, and firing regulations. Thus, it is easy to distinguish which among these labor market regulations are actually significant to foreign investors. I use the ILO conventions as a proxy for labor market standards and the WB indexes for labor market regulations. All countries may decide to observe the same standards, but may

implement them using different regulations. Hence, WB indicators represent the actual market conditions faced by firms.

Second, I verify whether the impact of labor market flexibility on FDI inflows matter more for developing than developed countries. Previous studies have investigated this possibility, but on a limited number of countries. I expanded the number of countries to test the robustness of previous studies' findings. In addition, most studies have pooled developed and developing countries, which I deem inappropriate.[1] Since FDI inflows to developed and developing countries have different motivations, this suggests that foreign investors may respond differently to labor market flexibility in different types of countries.

Finally, I test which of the two countries' MNCs – Japan or US, are more sensitive to labor market standards and regulations when choosing a host country for their FDI. This may be important especially for countries aiming to attract FDI particularly from these two countries. I disaggregate Japanese and US FDI by the recipient country level of development and by sector (manufacturing and non-manufacturing).

II. FDI-Labor Market Flexibility Literature

The literature on FDI determinants has been motivated by theories of international business, which are firm-based; and by international trade, which is based on general equilibrium models. The former points to the OLI framework developed by Dunning (1977, 1981, and 2001), which argues that three conditions must be satisfied for FDI to occur: the firm must have both an ownership (O) and an internalization (I) advantage, and the host country must offer a locational (L) advantage. Both ownership and internalization advantages depend on the firm, while locational advantage depends on the host country. When potential

[1] This was earlier shown by Blonigen and Wang (2004).

countries are being considered by a MNC to host its FDI, the latter will choose based on the locational advantages offered by the former.

The OLI framework complements the more formal general equilibrium models used to explain FDI location, which is based on factor endowment differences, market sizes, and trade costs. The significance of these factors typically depends on whether FDI is of the horizontal or vertical type, as shown by general equilibrium models of Markusen (1984, 1995), Helpman (1984), Brainard (1993, 1997), Markusen and Venables (1995), Carr, Markusen, and Maskus (2001), and Markusen and Maskus (2001).

The two approaches in studying FDI determinants have produced a plethora of empirical work on FDI determinants at the firm and country level. These studies have considered various host country characteristics that may influence FDI inflows.[2] Figure 1 presents a classification of the various determinants identified in the literature. These factors may be divided into non-policy and policy factors. Non-policy factors would include market size, distance, relative factor endowments, economic growth, and risk/uncertainty. Policy factors meanwhile would include tax structure, investment incentives, product FDI restrictions, participation in trading agreements, and tariff regime.[3] An often overlooked policy factor is the labor market flexibility of the host country. This factor can be considered vital in the choice of FDI host country because an entire production process (for the case of horizontal FDI) or a part of it (for the case of vertical FDI) is left to the hands of the host country labor force.

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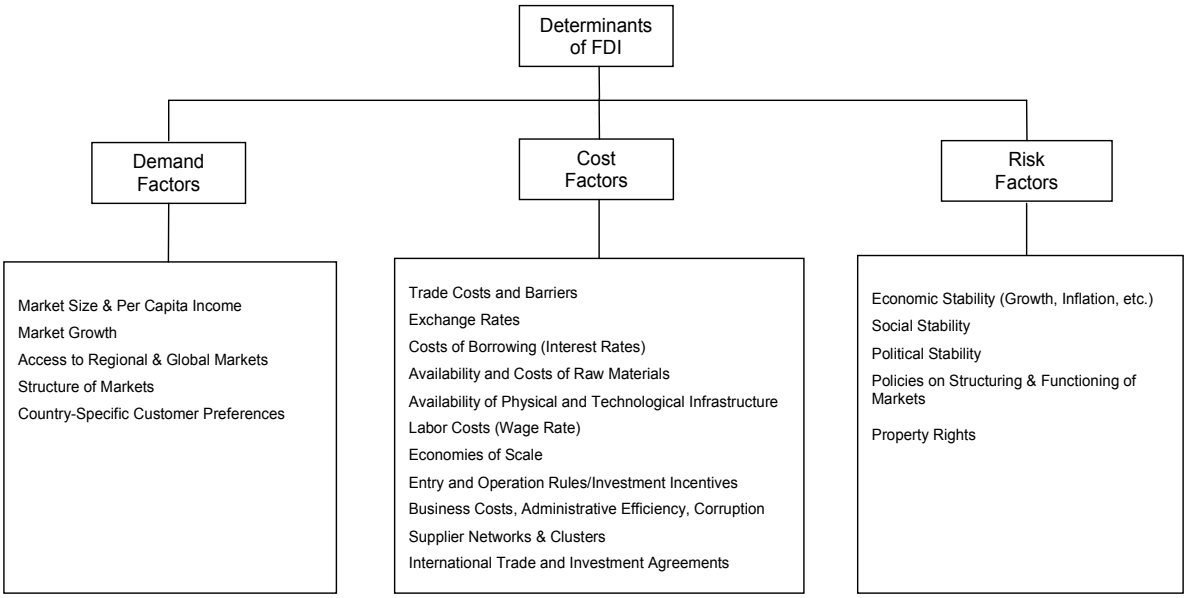
[2] Chakrabarti (2001) have pointed out that some of these empirical studies form examples of 'measurement without theory,' as variables are searched for that show a significant influence on FDI and the relationship is explained *ex post*.

[3] See Whyman and Baimbridge (2006), Blonigen (2005), Nicoletti at al. (2003), and Yeyati, Stein, and Daude (2002) for a more detailed review of these factors.

Figure 1. Determinants of FDI



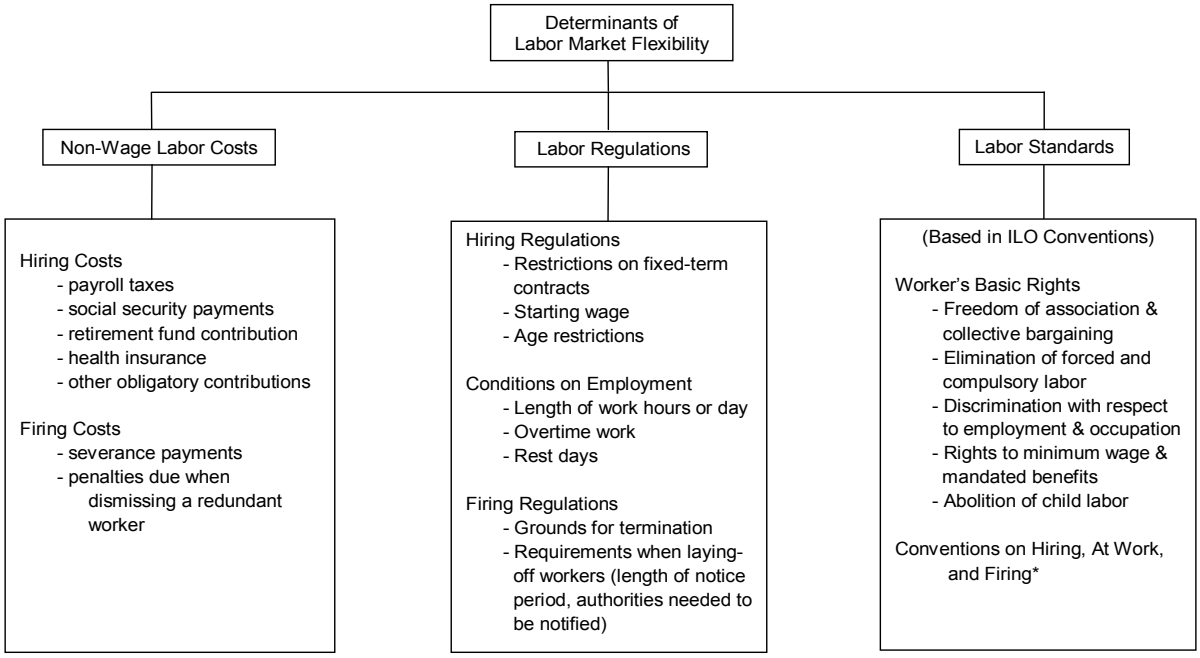
Source: Adopted by the author from Whyman and Baimbridge (2006)

According to Whyman and Baimbridge (2006), labor market flexibility refers to the degree to which labor market outcomes are determined by the operation of market forces free from rigidities and/or restrictions imposed by powerful actors such as the government, trade unions, and monopsony employers. Thus, a perfectly flexible labor market would imply the absence of all hindrances to the free operation of market forces. However, labor market standards, regulations, and non-wage labor costs prevent labor market outcomes to be freely determined by market forces. Figure 2 presents the various factors affecting labor market flexibility.

The literature on labor market effects on FDI inflows has mostly focused on the impact of labor cost as part of the firm's production cost. These studies frequently use average wage rate[4] and unit labor costs as measures of labor costs. While results of most

[4] Manufacturing wage rate is mostly used.

Figure 2. Determinants of Labor Market Flexibility



Note: * - See Appendix Table 1.
Source: Compiled by the author from various studies

studies (Bellak et al. (2007), Fung et al. (2002), Cheng and Kwan (2000), Lucas (1993), Culem (1988), Schneider and Frey (1985), Flamm (1984)) conform to the mainstream literature that higher wages discourage FDI inflows, some studies found wages to be insignificantly and even positively related to FDI inflows (Owen (1982), Gupta (1983), Wheeler and Mody (1992)). What is common in these studies is that labor cost is usually measured using wage labor only. This may be reasonable since a large fraction of labor costs is composed of wage cost. However, this neglects the fact that labor cost consists of both wage and non-wage costs, where the latter includes hiring and firing costs. Of the studies that have considered the non-wage components of labor costs, the focus is mostly on European countries where non-wage costs are high relative to other countries. According to Whyman and Baimbridge (2006), the OECD Economic Outlook (2003), Buckley and Casson (1998),

and Moran (1998), a quarter to about one-third of total labor costs in European countries are non-wage costs. In addition, more studies have focused on firing than hiring costs. A possible reason for this is that hiring costs may be compensated by a reduction in wages in the long-run.[5] However, the same adjustment cannot be made for firing costs. The reason for this is that the firm may be faced with future uncertainties that may force it to unexpectedly lay-off employees or even exit the market. Since it is difficult to factor in all future uncertainties when a firm makes investment decisions, firing costs cannot really be planned ahead and therefore cannot be compensated with lower wages. Similarly, for studies using labor market regulations as an indicator of labor market flexibility, more studies have focused on firing than hiring regulations. There are likewise a considerable number of studies that have focused on regulations during the period of employment. As seen from Figure 2, conditions during the duration of employment and firing regulations constrain the ability of firms to easily respond to changes in market forces.

Bellak et al. (2007) included hiring costs (employers' contributions to social security and to contractual and private benefit plans) in their measure of total labor costs. Using a sample of selected European Countries, a negative and significant effect of total labor costs on FDI inflows was found. However, it is hard to tell whether hiring costs really made a significant impact because it was not separated from total labor cost. Haaland, Wooton, and Faggio (2003) theoretically demonstrated that firing costs, in particular severance payments, deters potential investment especially in risky industries. Though the empirical test verified the theoretical result, this study cannot offer generalizations since the model was tested on only three countries, namely, Romania, Poland, and Bulgaria. Covering a wider group of

[5] However, if minimum wage laws exist, then the shifting of non-wage costs to wages may only be partial. (OECD Economic Outlook, 2003)

OECD countries, Lee (2003) used an EPL (employment protection legislation) index[6] to show that labor market regulations have a strong negative impact on FDI inflows. However, the EPL index is limited since it simply averages the level of employment protection under a regular and a temporary contract. Gorg (2005) focused on the impact of labor market flexibility on US FDI in 33 host countries. He similarly found that countries with more liberal labor markets receive more FDI from the US. The study likewise revealed that the impact of labor market restrictions on US FDI inflows is the same regardless of the host country's level of economic development and economic risk/uncertainty. The labor market flexibility indicator used in this study is a single index that is based on a survey of managers across countries conducted by the World Economic Forum and published in the Global Competitiveness Report. The question asked on this survey is 'whether hiring and firing practices are too restricted by the government or are flexible enough'. An obvious drawback of this index is that it averages the effects of all hiring and firing practices. Thus, it is uncertain which of the two drives the result. Likewise, response to the survey question is likely to be subjective.

Non-wage labor costs and regulations are driven by policy objectives that are unrelated to FDI. Most of these objectives arise with the aim of protecting the employee. It is for this reason that labor market regulations are usually associated with EPL. In addition, labor market regulations arise as outcomes of negotiations of contracts and incentives. Regardless of the exact reason why non-wage costs and labor market regulations exist, they have important implications on the cross-country distribution of FDI. The mainstream literature suggests that non-wage costs and labor market regulations negatively affect FDI inflows in a potential host country due to: (1) the decrease in MNC's returns due to higher

[6] From Nicoletti, Scarpetta, and Boylaud (1999)

labor costs; and (2) the decrease in the capacity of the MNC to readily respond to supply and demand shocks.

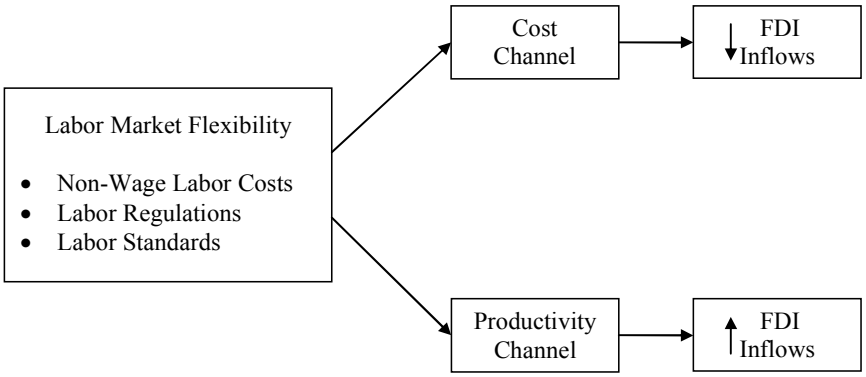
One strand of the literature uses labor standards as an indicator of labor market flexibility. These studies usually use the ILO Conventions as indicators of labor market flexibility. Forteza and Rama (2001) argued that ratified ILO Conventions is a reasonable proxy for the rigidity of a country's labor market. In addition, Freeman (1993)[7] claimed that these conventions reflect the ideal regulatory framework from an institutionalist perspective, where employees are considered weaker than employers. Since ILO conventions restrict the ability of employers to decide on the terms and conditions of work, they are therefore seen as a source of labor market distortions. A number of studies have used ILO Conventions as indicators of labor market flexibility, namely, Rodrik (1995), Kucera (2001, 2002), Cooke and Noble (1998), and Daude, Mazza, and Morrison (2003).[8] Results of these studies mostly show that low labor standards might be a hindrance, rather than an attraction, for foreign investors. Moreover, these studies suggest that high labor standards facilitate human capital development and enhance political and social stability, which encourage FDI inflows.

The foregoing shows that labor market flexibility has numerous facets, which makes the exact relationship between labor market flexibility and FDI inflows harder to predict. In addition, the relationship between the two will be sensitive to the choice of labor market flexibility indicator used. Thus, depending on the indicator chosen, labor market flexibility can have two opposing effects on FDI inflows, as illustrated in Figure 3. On the one hand, labor market standards and regulations increase costs and decrease the ability of a firm to

[7] Cited in Forteza and Rama (2001)
[8] Rodrik (1995) used the total number of ILO conventions ratified; Kucera (2001, 2002), Cooke and Noble (1998), and Daude et al. (2003) used an index based ILO Conventions 87 (Freedom of Association and Protection of the Rights to Organize) and 98 (Right to Organize and Collective Bargaining).

respond to market changes, which deters FDI. On the other hand, labor market standards and regulations enhance labor productivity, which attracts FDI.

Figure 3. The Impact of Labor Market Flexibility on FDI Inflows



III. Theoretical Framework

I use the simple theoretical model developed by Dewit et al. (2003) to demonstrate how labor market flexibility in potential FDI host countries can affect the choice of the MNC on where to locate. There are two types of countries in the model, home and foreign, which are assumed to have the same production costs. Dewit et al. (2003) argued that the symmetric cost assumption allows the model to focus on employment regulations as the sole motivation for location choice of the firm. However, under this assumption, there will be no motivation for vertical FDI, which mainly occurs to take advantage of differences in production costs between home and foreign country. Therefore, I slightly altered the assumption of the model by assuming that the choice of the MNC is among potential FDI host countries. This would accommodate both horizontal and vertical FDI. Therefore, even if production costs are assumed the same between the potential host countries, if FDI is of the vertical type, then the

choice must be between countries that have the same lower production costs than the FDI source country. Furthermore, I assume that the profit-maximizing MNC in the home country has already recognized that it is optimal for it to invest in a foreign country, where horizontal FDI is motivated by market access and vertical FDI is motivated by cost advantage.

The firm is a monopolist that chooses among countries, C_1 ,…, C_n, as the host country for its FDI. There are two periods in the model. Demand in period 1 is known by the firm for certain, but demand in period 2 has some degree of uncertainty. Therefore, the inverse demand curves in periods 1 and 2 are given by $p_1 = a - q_1$ and $p_2 = a - q_2 + u$, respectively, where p_t *and* q_t are the price and quantity in period t ($t=1, 2$), a is a positive constant and u is a stochastic demand component, with mean $E(u) = 0$ and variance v. Since the firm faces uncertainty in period 2, it values labor market flexibility. In the event of a decrease in demand in period 2, it has to cut its production, which means it may have to resort to cutting employment. Similarly, when demand increases in period 2, the firm wants to increase its production, which means it may want to increase employment. In either case, hiring and firing of employees can be costly, notably when the labor market is rigid.

The total variable cost in location i (i=1,…, n) is given by:

$$\text{(1)} \qquad \text{TVC}_i = c_i \sum_{t=1}^{2} q_t + \frac{\lambda_i}{2}(q_2 - q_1)^2 ,$$

where c_i is the marginal cost of production in location i, which is assumed to be the same in both periods. λ_i is the degree of labor market inflexibility in location i. The higher λ_i is, the more stringent the labor market in location i is. When the firm decides to alter its output in period 2, $|q_2 - q_1| > 0$; otherwise, $|q_2 - q_1| = 0$. Thus, the second term in (1) reflects the adjustment cost when output level is changed.

The fixed set-up cost in location i is given by:

(2) $FC_i = \phi + \delta_i$,

where ϕ is a constant fixed cost faced by the MNC regardless of the location chosen and δ_i is a location-specific fixed cost.

To maximize expected total profits, $E(\Pi) = \Pi_1 + E(\Pi_2)$, the MNC chooses its optimal output in location *i* in each period given by:

(3) $$q_{i1} = \frac{a - c_i}{2}$$

(4) $$q_{i2} = \frac{a - c_i}{2} + \frac{u}{2 + \lambda_i}$$

Clearly, with uncertainty, the MNC will be more flexible in period 2 if λ_i is low, since $\frac{dq_{i2}}{du}\left(= \frac{1}{2 + \lambda_i}\right)$ is decreasing in λ_i. If location *i* has an inflexible labor market (high λ_i), the MNC optimally chooses to adjust its period 2 output by a small amount in the face of uncertainty.

The maximized expected profit is given by:

(5) $$E(\Pi_i) = 2\left(\frac{a - c}{2}\right)^2 + \frac{v}{2(2 + \lambda_i)} - FC_i .$$

Therefore,

(6) $$\frac{dE(\Pi_i)}{d\lambda_i} = -\frac{v}{[2(2 + \lambda_i)]^2} < 0 .$$

This implies that the MNC will have greater expected profits when it chooses the location with more flexible labor market (low λ_i). Thus, more FDI is expected to flow in location i as the expected profits in location i increase.

The foregoing illustrates how labor market regulations can constrain the decision of firms to respond readily to changes in the economic environment. A firm experiencing an

unexpected decrease in demand may decide to lay-off workers. However, doing so is not costless and may not be an easy process. The firm has to deal with regulations on notice period and severance payments. Similarly, when a firm unexpectedly experiences an increase in demand, even if it wants to increase employment of labor in response to the market change, hiring of new employees or increasing work hours will come at a cost. Hence, a MNC would have to take into account the state of the labor market in their choice of host country. When labor markets have stringent regulations, they are considered less flexible since they cause firms to slow down the reallocation of their resources in response to market changes, which in turn can be costly for firms.

What the preceding does not show, however, is that labor standards and regulations, though restrictive from the point of view of firms, exist to protect the interest of workers. For instance, if there were no restrictions on work hours and overtime pay, a firm can just require its existing employees to work for longer hours to meet an increase in demand for its good and just pay the regular hourly wage for the additional hours of work. Beyond some number of work hours, however, this practice may be considered exploitative. In addition, labor standards may be established to promote long-lasting work relationships and provide job security. For instance, firms may respond to the rigidity in the labor market by training employees in various functions, which increases within firm or internal flexibility. This reduces the cost associated with hiring and firing of workers. Moreover, if firms provide more employment protection, they may find that their workers are more loyal and hard-working. High labor standards may likewise encourage human capital development. An example is the ILO Convention on paid educational leave, which increases the cost of employers, but enhances human capital development. Social stability may likewise result from the job security that certain labor standards and regulations provide. Therefore, labor

regulations and standards can actually have a positive impact on FDI inflows by enhancing the aggregate labor productivity of a country. If this is the case, it is possible for certain labor market regulations and standards to decrease the marginal cost of production in location i, that is, *c* can be a negative function of λ. Thus, (5) and (6) can be alternatively written as

(5') $$E(\Pi_i) = 2\left(\frac{a - c(\lambda)}{2}\right)^2 + \frac{v}{2(2+\lambda_i)} - FC_i$$

(6') $$\frac{dE(\Pi_i)}{d\lambda_i} = -\left(\frac{a - c(\lambda)}{2}\right)c'(\lambda) - \frac{v}{[2(2+\lambda_i)]^2} \gtrless 0.$$

where $c'(\lambda) < 0$. The first term in (6') represents the positive impact of labor market regulations and standards on the MNC's expected profits due to increased labor productivity that decreases the marginal cost of production. The second term, meanwhile, represents the negative impact of labor market regulations and standards on the MNC's expected profits due to adjustment costs incurred by the firm when it changes its production decisions as a result of market uncertainties. Thus, the sign of $\frac{dE(\Pi_i)}{d\lambda_i}$ is ambiguous, depending on which effect dominates. Based on the foregoing, I hypothesize that labor market flexibility can influence the cross-country differences in FDI inflows through two channels: costs and productivity.

Hypothesis: An increase in labor market inflexibility will decrease FDI inflows through the cost channel and will increase FDI inflows through the productivity channel.

IV. Empirical Methodology and Data

To empirically test whether labor market flexibility has a significant impact on cross-country differences in FDI inflows, the following equation will be estimated:

(7) $$\log (FDI_{ji}) = \alpha + \beta LM_i + \gamma X_i + \varepsilon_{ji},$$

where FDI inflows from source j to country i is regressed on a measure of labor market flexibility (LM) of country i and other country i characteristics, X_i, known to affect FDI inflows. β is the coefficient of interest and ε is a random error term. Stated in this manner, (7) is a reduced form representation of the FDI-labor market flexibility relationship. Whether labor market flexibility has a positive or negative impact on FDI inflows depends on the net impact of the former on the expected profits of the MNC.

Equation (7) assumes a linear relationship between labor market flexibility and FDI inflows. When labor market standards and regulations are used as indicators of labor market flexibility and when a negative effect on FDI inflows is found, the outright conclusion is that labor market flexibility should be increased by reducing standards and regulations in order to attract more FDI inflows. And when a positive relationship is found, the explanation given for the seemingly surprising result is that labor market standards and regulations increase labor productivity. Thus, standards and regulations should be encouraged in order to attract more FDI inflows. Note that when only a linear relationship is assumed, the relationship between labor market flexibility and FDI inflows could only be either positive or negative at all levels of labor market standards and regulations.

The theoretical model presented in the preceding section recognizes that labor market standards and regulations may reduce the marginal cost of production by increasing aggregate labor productivity. At the same time, labor standards and regulations increase the total variable cost faced by a MNC when an adjustment needs to be done in response to market uncertainties. To allow for these two possible channels, I add a squared term for the labor market flexibility indicator. Hence, equation (7) becomes

(7') $\log (FDI_{ji}) = \alpha + \beta_1 LM_i + \beta_2 LM_i^2 + \gamma X_i + \varepsilon_{ji}$.

There are several possibilities in the signs of β_1 and β_2.

First, $\beta_1 > 0$ and $\beta_2 < 0$. This implies that labor market standards and regulations increase FDI inflows at a decreasing rate. If this case holds, then this would suggest that some degree of labor market standards and regulations is helpful in attracting FDI inflows. But higher levels of regulation will be too costly and eventually ward off investors. This case may likewise suggest that the productivity effect of standards and regulations can have a diminishing effect on FDI inflows.

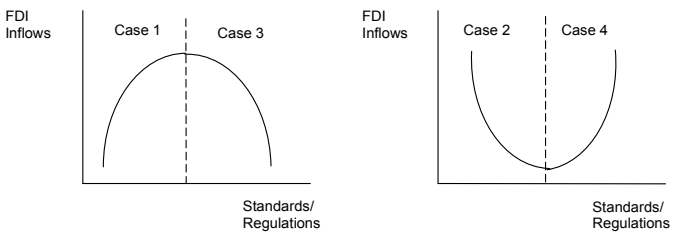
Second, $\beta_1 < 0$ and $\beta_2 > 0$. This implies that labor market standards and regulations decrease FDI inflows at a decreasing rate. If this case holds, the marginal increase in costs becomes smaller as standards and regulations increase; that is, the negative impact of regulations will have a diminishing effect on FDI inflows.

Third, $\beta_1 < 0$ and $\beta_2 < 0$. This implies that labor market standards and regulations decrease FDI inflows at an increasing rate. If this case holds, then the cost channel dominates the productivity channel.

Fourth, $\beta_1 > 0$ and $\beta_2 > 0$. This implies that labor market regulations increase FDI inflows at an increasing rate. If this case holds, then the productivity channel dominates the cost channel.

The aforementioned cases are illustrated in Figure 4. The four cases suggest that the impact of labor market regulations on FDI inflows depends on whether a country has high or low levels of standards or regulations and on which of the two channels is more dominant.

Figure 4. The Non-linear Effects of Labor Market Standards/Regulations on FDI Inflows



On the choice of labor market flexibility indicator, I depart from previous studies in two ways. First, I do not use the total number of ILO conventions or number of ILO conventions pertaining to workers' basic rights ratified by each country as an indicator of LMF. Using the total number of ILO conventions ratified as an indicator of LMF is inappropriate since the conventions cover a wide variety of employment regulations. I choose only ILO conventions that specifically pertain to *hiring, at work, and firing standards*. Appendix Table 1 summarizes the conventions classified under each category. I do not aggregate the conventions covering these three categories in order to distinguish which among the three is most important for foreign investors. Moreover, rather than simply obtaining the number of conventions ratified by each country under each category, I consider the number of conventions ratified by each country *i* relative to the maximum possible number of regulations for each category *k* (where *k = hiring, at work, firing standards*) for each year *t*, that is,

$$k\ index_{it} = \frac{(Number\ of\ ILO\ Ratifications\ for\ Category\ k)_{it}}{(Total\ Number\ of\ ILO\ Ratifications\ for\ Category\ k)_{t}} \text{ X } 100.$$

The larger the index is, the greater are the number of conventions ratified by a country. For instance, in 1992, 21 ILO Conventions were classified under at work category. Of these conventions, Australia has ratified only one. Thus, at work index for Australia for 1992 is (1/21) x 100 or 4.80. In 1993, an additional convention under at work category was introduced,[9] but Australia did not ratify the convention. Hence, at work index for Australia in 1993 went down to (1/22) x 100 or 4.50. Thus, if a convention is not ratified by a country in a given year, the index will decrease for the country. If no convention is introduced by the ILO in a given year, then the indexes remain the same for all countries. An exception happens

[9] Convention No. 174 (Prevention of Major Industrial Accidents)

when a country denounces a previously ratified convention. For instance, Brazil ratified Convention No. 158 (Termination of Employment) in 1982, but denounced the convention in 1996. Hence, though no convention was ratified in 1996, the firing index for Brazil decreased from 20 in 1995 to 0 in 1996.

Second, I use various labor market flexibility indicators obtained from the *Doing Business* Database of the World Bank (WB). The indicators focus on the regulation of employment, specifically the hiring and firing of workers and the rigidity of work hours. They were based on a survey that started in 2003, which was conducted on various firms in over 150 countries. To make the data comparable across countries, the survey was designed to reflect the employment regulation enforcement across countries. Thus, in contrast to the ILO indicators which represent the labor standards countries agreed in principle to observe, the WB indicators represent the actual regulations faced by investors in different countries. Specific assumptions about the worker and the business were provided in the survey and respondents were asked to answer based on the given assumptions and the existing labor regulations in the country.[10] Hence, subjectivity of responses is eliminated, in contrast to other indicators of labor market flexibility. Out of the survey, the database provides a rigidity of employment index (REI), which is a weighted average of the difficulty of hiring index (DHI), rigidity of hours index (RHI), and difficulty of firing index (DFI). Higher values of the indexes indicate more rigid regulation. A summary of the components of the indexes is provided in Appendix Table 2.

Compared to single aggregate indexes used in previous studies, the disaggregation of the ILO Conventions and the WB's rigidity of employment index into different components is appealing. The disaggregated indicators enable one to see whether the impacts of the

[10] A copy of the actual questionnaire can be downloaded from http://www.doingbusiness.org/Methodology/.

different categories of standards and regulations are equally significant for foreign investors. However, as with any other indicator, both sets of labor market flexibility indicators have drawbacks.

Although the ILO actively monitors the observance of the ratified conventions, it does not have the legal power to penalize a nation from not observing a convention that it has ratified. The most that it can do is to rely on moral suasion. Hence, a limitation of using the ILO conventions as indicators of labor market flexibility is that they may just measure the latter as stated on paper and not necessarily in practice. Another drawback of the ILO Conventions is that whether countries ratify a convention or not may depend on its level of economic development. Appendix Table 3 summarizes the percentage of developed and developing countries with ILO and WB labor market flexibility indicators above and below the mean values of these indicators. The table reveals that a greater proportion of developed countries have ILO indexes above the mean. This implies that developed countries generally ratify more conventions than developing countries. This is most apparent for the firing index where 71 percent of developed countries have an index above the mean, while only 38 percent of developing countries have an index above the mean.

A more preferred indicator of labor market flexibility is one that does not only capture labor regulations as stated on paper, but which captures their enforcement and effect on firms' operations as well. The labor market flexibility indicators from the WB satisfy this characteristic. In addition, as seen in Appendix Table 4, compared to the ILO indexes, there seem to be no apparent correlation between a country's level of development and the WB indexes.[11] Hence, in these aspects the WB indicators are preferred over the ILO indicators. A

[11] Although among the ILO indicators, only firing standards seem to be highly correlated with a country's level of development. Correlation between the developing country dummy and firing standards is -0.39, which imply that developing countries generally have lesser firing standards than developed countries.

drawback of using the WB labor market flexibility indicators, however, is that the values of the indexes do not change for any country for the period covered by the survey.[12]

I proceed with the aforementioned limitations in mind. Both sets of labor market flexibility indicators will be used to estimate the impact of labor market flexibility on FDI inflows. Fixed effects technique is used to estimate equations (7) and (7') when the ILO indexes are used as indicators. Fixed effects estimation eliminates the effect of time-invariant omitted variables. Such estimation method can be used since the ILO indexes vary for countries for the period 1990-2005. However, fixed effects estimation cannot be used when the WB indexes are used as indicators since the indexes are time-invariant. Thus, when using the WB indexes, data is pooled across years for all 165 countries, where each country-year observation is treated as a single observation. Since I am only able to estimate a simple cross-country relationship between FDI inflows and labor market flexibility when using the WB indexes, there is always a risk that the correlations I document are spurious. To address this concern, I include various variables that the literature suggests are correlated with FDI inflows. This lessens the possibility that the LMF indicators will capture the effect of omitted variables. I likewise included dummy variables for each year to account for year effects.[13]

I consider three sources (j) of FDI, namely, the rest of the world (ROW), Japan, and the United States. A cursory inspection of the FDI data shows that all countries included in

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[12] Statistically, this is a limitation. In reality, not much can really be done about it since labor market regulations rarely change from one year to another. Since many regulations have to be passed into law before being implemented, it is necessarily expected that regulations will not change on an annual basis.

[13] Based on existing literature, the following explanatory variables are included in the estimations: wage and its square, GDP per capita and its square, trade as a percent of GDP, inflation rate, tax on goods and services, labor force participation rate, population, literacy rate, exchange rate, external debt as a percentage of GDP, capital account openness index, dummy variable whether the form of government is democratic or not, corruption index, manufacturing value added (included in estimation for the manufacturing sector), distance from US (included in estimation for US FDI), distance from Japan (included in the estimation for Japanese FDI), and dummy variables for membership in different preferential trading agreements (AFTA, NAFTA, COMESA, MERCOSUR, CARICOM, EU). Variance inflation factor was checked for each regression to ensure that there is no serious multicollinearity among the explanatory variables. Robust standards errors are also used to minimize the problem of heteroskedasticity.

the study have received FDI inflows from the ROW in the years covered by the study. However, not all countries have received FDI from Japan and US. Therefore, Tobit estimation is the appropriate method of estimation when considering FDI coming from US and Japan. Appendix Table 5 presents the description of variables and their corresponding sources. Appendix Table 6 presents the summary statistics of these variables.

V. Results

Table 1A presents the results of the estimations using the constructed ILO indexes as the labor market flexibility indicators. Panel A lists the coefficients for the sample of all countries. Panels B and C, meanwhile, contain the coefficients for the developed and developing countries samples, respectively.

Panel A reveals that countries with more hiring and at work standards generally receive more FDI inflows. A 10 unit increase in hiring and at work indexes increases FDI inflows by about 7-11 and 14 percent, respectively, as seen in columns (1), (2), and (4). There is no discernable non-linear relationship between FDI inflows and the ILO standards. In addition, firing standards are statistically insignificant in affecting FDI inflows. The results for the developed countries sample are very similar to the pooled sample as seen in Panel B. Hiring and at work standards are statistically significant, but firing standards are not. A 10 unit increase in hiring and at work indexes will increase FDI inflows to developed countries by about 11-19 and 16 percent, respectively, as seen in columns (1), (2), and (4).

The result for the developing countries sample is quite different as revealed in Panel C. Hiring standards are only weakly statistically significant in affecting FDI inflows, while at work and firing standards are statistically significant in explaining FDI inflows. A 10 unit increase in at work index increases FDI inflows by about 14 percent, as seen in columns (2).

Table 1A. Impact of Labor Market Standards on FDI Inflows from the Rest of the World

Labor Market Flexibility Indicator	Panel A. All Countries (1)	(2)	(3)	(4)	(5)	(6)
Hiring Standards	0.0073**			0.0111**		
	(0.002)			(0.004)		
(Hiring Standards)^2				-0.0001		
				(0.000)		
At Work Standards		0.0146**			0.0088	
		(0.003)			(0.009)	
(At Work Standards)^2					0.0001	
					(0.000)	
Firing Standards			0.0023			0.0045
			(0.001)			(0.003)
(Firing Standards)^2						-0.0001
						(0.000)
No. of Observations	2640	2640	2640	2640	2640	2640
F-statistic	17.54	18.08	17.34	17.08	17.59	16.88
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.2017	0.2066	0.1998	0.2019	0.2067	0.2000
Labor Market Flexibility Indicator	Panel B. Developed Countries (1)	(2)	(3)	(4)	(5)	(6)
Hiring Standards	0.0119**			0.0191**		
	(0.0039)			(0.008)		
(Hiring Standards)^2				-0.0001		
				(0.000)		
At Work Standards		0.0167**			0.0202	
		(0.004)			(0.021)	
(At Work Standards)^2					-0.0001	
					(0.000)	
Firing Standards			0.0011			-0.0001
			(0.001)			(0.005)
(Firing Standards)^2						0.0001
						(0.000)
No. of Observations	656	656	656	656	656	656
F-statistic	10.68	10.86	10.28	10.41	10.54	9.98
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.3920	0.3959	0.3829	0.3930	0.3959	0.3830
Labor Market Flexibility Indicator	Panel C. Developing Countries (1)	(2)	(3)	(4)	(5)	(6)
Hiring Standards	0.0053			0.0097*		
	(0.001)			(0.005)		
(Hiring Standards)^2				-0.0001		
				(0.000)		
At Work Standards		0.0142**			0.0074	
		(0.003)			(0.010)	
(At Work Standards)^2					0.0001	
					(0.000)	
Firing Standards			0.0031			0.0152**
			(0.002)			(0.005)
(Firing Standards)^2						-0.0002**
						(0.023)
No. of Observations	1984	1984	1984	1984	1984	1984
F-statistic	11.56	11.94	11.55	11.26	11.61	11.40
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.1823	0.1870	0.1821	0.1826	0.1870	0.1844

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively. Coefficients estimates of other explanatory variables appear in Appendix Table 7.

A non-linear relationship is apparent between firing standards and FDI inflows. Developing countries with more firing standards will generally attract more FDI inflows such that a 10 unit increase in the firing index will increase FDI inflows by about 15 percent, as seen in column (6). However, when firing standards reach a certain level, FDI inflows will start to decrease. Developing countries with firing index below 32 will find that FDI inflows will still increase if firing standards are increased.[14] However, countries with firing index above 32 may find that increasing firing standards any further will decrease their FDI inflows. Of the 124 developing countries in the sample, only 19 countries have firing index above 32. Thus, my results suggest that most developing countries can still increase their firing standards sans the fear of repelling FDI inflows.[15]

The preceding results suggest that countries with higher labor market standards generally receive more FDI inflows, suggesting that MNCs value labor market standards in host countries. Moreover, results show that not all labor market standards have the same and significant effects on FDI inflows to developed and developing countries.

Table 1B presents the results of the estimations using the WB indexes as the labor market flexibility indicators. Again, Panels A, B, and C list the results for the pooled, developed, and developing countries samples, respectively.

Panel A, column (1) shows that based on the aggregate index – rigidity of employment, labor market regulations do not have a significant impact on FDI inflows. However, when this index is disaggregated into its components, regulations on work hours and firing have statistically significant impact on FDI inflows, as seen in columns (3) and (4).

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[14] This is calculated as $(-\beta_1/2\beta_2)$.

[15] For instance, the following developing countries have firing index below 32: Angola, Bangladesh, Cambodia, Cote d'Ivoire, Guatemala, Mongolia, Mozambique, Rwanda, and Vietnam; and the following have firing index above 32: Mexico, Madagascar, and Zambia.

Table 1B. Impact of Labor Market Regulations on FDI Inflows from the Rest of the World

Labor Market Flexibility Indicator	Panel A. All Countries							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rigidity of Employment	0.0004				-0.0081**			
	(0.001)				(0.003)			
(Rigidity of Employment)^2					0.0001**			
					(0.000)			
Difficulty of Hiring		0.0010				0.0012		
		(0.000)				(0.001)		
(Difficulty of Hiring)^2						0.0000		
						(0.000)		
Rigidity of Hours			0.0020**				0.0028	
			(0.000)				(0.002)	
(Rigidity of Hours)^2							-0.0000	
							(0.000)	
Difficulty of Firing				-0.0024**				-0.0057**
				(0.000)				(0.002)
(Difficulty of Firing)^2								0.0001
								(0.000)
No. of Observations	2640	2640	2640	2640	2640	2640	2640	2640
F-statistic	39.32	38.94	0.3799	0.3908	38.39	37.91	37.53	39.19
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.3147	0.3153	0.3162	0.3171	0.3163	0.3153	0.3162	0.3177
Labor Market Flexibility Indicator	Panel B. Developed Countries							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rigidity of Employment	-0.0020				-0.0402**			
	(0.002)				(0.008)			
(Rigidity of Employment)^2					0.0005**			
					(0.000)			
Difficulty of Hiring		0.0006				-0.0017		
		(0.001)				(0.004)		
(Difficulty of Hiring)^2						0.0001		
						(0.000)		
Rigidity of Hours			-0.0022				-0.0453**	
			(0.002)				(0.004)	
(Rigidity of Hours)^2							0.0006**	
							(0.000)	
Difficulty of Firing				-0.0032*				0.0071
				(0.001)				(0.006)
(Difficulty of Firing)^2								-0.0002*
								(0.000)
No. of Observations	656	656	656	656	656	656	656	656
F-statistic	51.27	50.08	51.87	50.63	52.74	49.27	57.04	47.69
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.6420	0.6417	0.6425	0.6431	0.6577	0.6418	0.6983	0.6488
Labor Market Flexibility Indicator	Panel C. Developing Countries							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rigidity of Employment	-0.0032**				-0.0104**			
	(0.001)				(0.003)			
(Rigidity of Employment)^2					0.0001*			
					(0.000)			
Difficulty of Hiring		-0.0013*				-0.0017		
		(0.000)				(0.001)		
(Difficulty of Hiring)^2						0.0001		
						(0.000)		
Rigidity of Hours			0.0007				0.0141**	
			(0.001)				(0.002)	
(Rigidity of Hours)^2							-0.0002**	
							(0.000)	
Difficulty of Firing				-0.0038**				-0.0091**
				(0.000)				(0.002)
(Difficulty of Firing)^2								0.0001**
								(0.000)
No. of Observations	1984	1984	1984	1984	1984	1984	1984	1984
F-statistic	27.07	27.01	26.75	27.65	26.58	26.32	27.05	27.22
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.2650	0.2635	0.2624	0.2697	0.2662	0.2635	0.2726	0.2715

Notes: Values in ( ) are standards robust errors. ** and * indicate significance at 5% and 10% level, respectively.
Coefficients estimates of other explanatory variables appear in Appendix Table 7.

A 10 unit increase in the rigidity of hours index will increase FDI inflows by 2 percent, while a 10 unit increase in the difficulty of firing index will decrease FDI inflows by 2.4 percent.

When a non-linear relationship is allowed between the labor market flexibility indicators and FDI inflows, the rigidity of employment index gains statistical significance as seen in column (4). A 10 unit increase in the rigidity of employment index deceases FDI inflows by about 8 percent. However, when the index is disaggregated into its components, there is no apparent non-linear relationship between FDI inflows and the disaggregated indexes as seen in columns (6) – (8).[16]

Panel B, columns (1)-(4) reveal that when only a linear relationship is allowed between labor market flexibility and FDI inflows to developed countries, the former is insignificant in explaining the latter.[17] A statistically significant relationship between labor market flexibility and FDI inflows in developed countries is strongly evident only when non-linear relationship is allowed, as seen in columns (5) and (7). A 10 unit increase in the rigidity of employment index decreases FDI inflows by about 40 percent, and this can be attributed to the rigidity of hours. A 10 unit increase in the rigidity of hours index decreases FDI inflows by about 45 percent. Thus, MNCs are discouraged to invest in developed countries with rigid work hour regulations, but are indifferent as regards hiring and firing regulations.[18]

Panel C shows that a 10 unit increase in the rigidity of employment index decreases FDI inflows to developing countries by about 3-10 percent, as seen in columns (1) and (5). Among the components of the aggregate index, the difficulty of hiring index is marginally significant, as seen in column (2). Both the rigidity of hours and difficulty of firing indexes

[16] Squared term for difficulty of firing is insignificant.
[17] Difficulty of firing index in column (4) is only marginally significant.
[18] Firing regulations are only weakly statistically significant and the economic impact is quite small – 3 percent, as seen in column (4).

are strongly statistically significant. A 10 unit increase in the rigidity of hours index will increase FDI inflows by about 14 percent as seen in column (7), while a 10 unit increase in the difficulty of firing index will decrease FDI inflows by about 3-9 percent, as seen in columns (4) and (8).

The preceding results show that it is important to look not only at aggregate indexes, as important relationships may be concealed when analysis is based only on an aggregate index. For instance, the negative relationship found for the rigidity of employment index and FDI inflows to developing countries may give an impression that all types of labor market regulations should be reduced in developing countries in order to attract more FDI inflows. However, once the index is disaggregated into its components, only firing regulations have a negative impact on FDI inflows. In fact, regulations on work hours have a positive impact on FDI inflows up to a certain limit. Countries with rigidity of hours index below 40 can still increase their work hour regulations and still have an increase in their FDI inflows. However, countries with rigidity of hours index above 40 may find their FDI inflows decreasing if regulations on work hours are further increased. Of the 124 developing countries in the sample, 91 countries have rigidity of hours index below 40. My results imply that a great majority of developing countries can still increase their work hour regulations and still increase their FDI inflows.

Regulations on work hours may improve the productivity of workers, which may explain the positive impact of the rigidity of hours index on FDI inflows. This suggests that though regulations constrain work hours in developing countries, this is not necessarily seen by foreign investors as a hindrance to their operations. Making employees work beyond a certain number of hours may actually decrease their productivity. This likewise suggests that foreign investors do not necessarily gravitate towards countries where workers are made to

work for unreasonable number of hours.[19] Regulations on firing, however, may slow down the operations of firms, especially when an adjustment on the employment level needs to be made, which explains the negative relationship between the difficulty of firing index and FDI inflows. These results are consistent with the theoretical model presented in the previous section. On the one hand, labor market regulations decrease the marginal cost of production by increasing labor productivity, which increases FDI inflows. On the other hand, labor market regulations increase the adjustment costs faced by a firm when it decides to change its employment level, which deters FDI inflows.

Similar to the estimations using ILO indexes, results show that not all labor market regulations have the same and significant effects on FDI inflows to developed and developing countries. Based on the rigidity of employment index, labor market regulations have a larger negative impact on developed than developing countries. A 10 unit increase in the rigidity of employment index will reduce FDI inflows to developed countries by about 40 percent and only about 10 percent for developing countries. This is in contrast to the prediction of Haaland et al. (2003) that labor market flexibility should have a greater impact in developing than developed countries. A possible explanation for this is that worker compensation is in general more costly in developed than developing countries. Moreover, allowing for non-linear effects is important, as it may reveal additional information that is concealed when the relationship is just assumed to be linear. For instance, the positive impact of work hour regulations on FDI inflows to developing countries is only evident when a non-linear relationship is specified.

[19] An example is the issue about a textile factory in India where laborers are made to work from dawn until late in the evening. This factory was exposed to produce garments for the American retail clothing chain GAP Inc. As a response, the latter severed all its ties with suppliers that are known to manufacture garments in deplorable working conditions.

The results in Tables 1A and 1B are very suggestive. While labor market standards generally increase FDI inflows, labor market regulations have a greater tendency of reducing FDI inflows. These imply that foreign investors prefer to invest in countries with some degree of labor market standards as these may signal higher aggregate labor productivity. However, foreign investors may be wary of some labor market regulations because these translate to actual costs. These suggest that developing countries need not "race to the bottom" in order to attract FDI inflows. What developing countries need to do is to find a proper balance of labor market standards and regulations such that these can increase labor productivity, but at the same time not becoming too rigid and costly from the point of view of MNCs.

Among the other explanatory variables, wage, GDP per capita, inflation rate, trade, tax, exchange rate, labor force participation rate, literacy rate, population, capital account openness, external debt, and corruption index appear significant in explaining FDI inflows, depending on the estimation technique used. Results are shown in Appendix Tables 7A and 7B.

Next, equations (7) and (7') are estimated for FDI inflows from Japan and US. Tables 2A and 2B display the results using ILO and WB indexes as labor market flexibility indicators, respectively. Table 2A, Panel A reveals that the decision of MNCs from both Japan and US to invest in other countries is affected by the potential host countries' labor market standards. It is noticeable though that Japanese MNCs are more sensitive to most labor market standards as revealed by the larger magnitude of effects on Japanese FDI inflows. In general, FDI inflows from Japan and US decrease as hiring and at work standards increase, but FDI inflows increase as firing standards increase.

Table 2A. Impact of Labor Market Standards on FDI Inflows from Japan and US

	Japan						US					
Labor Market	Panel A. All Countries											
Flexibility Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hiring Standards	-0.0122**			-0.0362**			-0.0035**			-0.0074**		
	(0.005)			(0.014)			(0.001)			(0.003)		
(Hiring Standards)^2				0.0005**						0.0001*		
				(0.000)						(0.000)		
At Work Standards		-0.0325**			-0.1169**			-0.0080**			-0.0163**	
		(0.006)			(0.017)			(0.001)			(0.003)	
(At Work Standards)^2					0.0016**						0.001**	
					(0.000)						(0.000)	
Firing Standards			0.0079**			-0.0037			0.0037**			0.0113**
			(0.004)			(0.008)			(0.000)			(0.001)
(Firing Standards)^2						0.0002*						-0.0001**
						(0.000)						(0.000)
No. of Observations	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624
LR chi2	2196.10	2223.64	2194.82	2199.70	2257.80	2197.01	2723.77	2759.93	2736.79	2725.95	2767.45	2760.30
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.2802	0.2837	0.2800	0.2806	0.2881	0.2803	0.7144	0.7239	0.7178	0.7150	0.7259	0.7240
Labor Market	Panel B. Developed Countries											
Flexibility Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hiring Standards	-0.0039			0.0169			-0.0168**			-0.0284**		
	(0.005)			(0.016)			(0.001)			(0.003)		
(Hiring Standards)^2				-0.0003						0.0002**		
				(0.000)						(0.000)		
At Work Standards		-0.0217**			-0.1010**			-0.0097**			-0.0383**	
		(0.006)			(0.019)			(0.001)			(0.004)	
(At Work Standards)^2					0.0012**						0.0004**	
					(0.000)						(0.000)	
Firing Standards			0.0172**			0.0507**			-0.0006			0.0120**
			(0.003)			(0.012)			(0.000)			(0.003)
(Firing Standards)^2						-0.0003**						-0.0001**
						(0.000)						(0.000)
No. of Observations	640	640	640	640	640	640	640	640	640	640	640	640
LR chi2	895.64	905.66	912.11	897.21	923.02	922.03	1242.33	1166.43	1126.01	1255.34	1213.92	1149.20
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.3072	0.3106	0.3128	0.3077	0.3166	0.3162	0.8665	0.8135	0.7853	0.8755	0.8466	0.8015
Labor Market	Panel C. Developing Countries											
Flexibility Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hiring Standards	-0.0246**			-0.0400**			-0.0022**			-0.0013		
	(0.007)			(0.019)			(0.001)			(0.003)		
(Hiring Standards)^2				0.0003						-0.0001		
				(0.0003)						(0.000)		
At Work Standards		-0.0539**			-0.0640**			-0.0039**			0.0092**	
		(0.009)			(0.028)			(0.001)			(0.003)	
(At Work Standards)^2					0.0002						-0.0002**	
					(0.000)						(0.000)	
Firing Standards			-0.0217**			-0.0292			0.0012			0.0310**
			(0.008)			(0.023)			(0.001)			(0.004)
(Firing Standards)^2						0.0001						-0.0008**
						(0.000)						(0.000)
No. of Observations	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984
LR chi2	1181.44	1213.70	1178.28	1182.09	1213.87	1178.43	1346.48	1351.81	1343.96	1346.59	1364.11	1387.18
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.2716	0.2790	0.2709	0.2717	0.2790	0.2709	0.7897	0.7929	0.7882	0.7898	0.8001	0.8136

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively.

Panel B reveals that hiring standards are insignificant for Japanese MNCs when they choose to invest in developed countries, but at work and firing standards are important for them. In particular, an increase in at work standards decreases FDI inflows from Japan, but an increase in firing standards increases FDI inflows from Japan. Meanwhile, US MNCs are sensitive to all labor market standards in developed countries. An increase in both hiring and at work standards decreases FDI inflows from US, but an increase in firing standards increases FDI inflows.

Panel C reveals that Japanese MNCs are sensitive to all labor market standards in developing countries. Japanese MNCs are most sensitive to at work standards in developing countries, such that a 10 unit increase in at work index will decrease FDI inflows by about 54-64 percent, as seen in columns (2) and (5). Firing standards, meanwhile, exert the least impact - a 10 unit increase in firing index will decrease FDI inflows by about 22 percent, as seen in column (3). Similarly, US MNCs are sensitive to all labor market standards in developing countries. A 10 unit increase in hiring index will decrease FDI inflows by only about 2 percent. A non-linear relationship, meanwhile, is found for both at work and firing standards. A 10 unit increase in at work and firing indexes will increase FDI inflows by about 9 and 31 percent, respectively. This positive effect, however, has a limit. Developing countries with at work and firing indexes beyond 23 and 20, respectively, may experience a decline in US FDI inflows if they further increase their at work and firing standards. Of the 124 developing countries considered, 89 countries have at work index below 23 and 108 countries have firing index below 20. This implies that most developing countries can further increase their at work and firing standards and still increase their FDI inflows from US.

Table 2B. Impact of Labor Market Regulations on FDI Inflows from Japan and US

	Japan								US							
Labor Market Flexibility Indicator	Panel A. All Countries															
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rigidity of Employment	-0.0185**				-0.1307**				-0.0062**				-0.0618**			
	(0.004)				(0.014)				(0.001)				(0.002)			
(Rigidity of Employment)^2					0.0016**								0.0008**			
					(0.0002)								(0.000)			
Difficulty of Hiring		-0.0011				-0.0504**				-0.0005				-0.0176**		
		(0.003)				(0.000)				(0.000)				(0.001)		
(Difficulty of Hiring)^2						0.0006**								0.0002**		
						(0.000)								(0.000)		
Rigidity of Hours			-0.0329**				-0.0786**				-0.0113**				-0.0397**	
			(0.003)				(0.008)				(0.000)				(0.002)	
(Rigidity of Hours)^2							0.0006**								0.0004**	
							(0.000)								(0.000)	
Difficulty of Firing				0.0018				-0.0279**				-0.0006**				-0.0147**
				(0.003)				(0.010)				(0.000)				(0.002)
(Difficulty of Firing)^2								0.0004**								0.0002**
								(0.000)								(0.000)
No. of Observations	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624
LR chi2	2205.65	2191.29	2270.16	2191.40	2258.82	2225.26	2293.08	2198.95	2751.59	2715.49	2909.36	2715.55	3062.29	2789.80	3115.12	2752.06
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.2814	0.2796	0.2896	0.2796	0.2882	0.2839	0.2926	0.2806	0.7217	0.7123	0.7631	0.7123	0.8032	0.7317	0.8171	0.7218
Labor Market Flexibility Indicator	Panel B. Developed Countries															
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rigidity of Employment	-0.0259**				-0.0844**				-0.0082**				-0.0491**			
	(0.005)				(0.022)				(0.001)				(0.005)			
(Rigidity of Employment)^2					0.0009**								0.0006**			
					(0.000)								(0.000)			
Difficulty of Hiring		-0.0126**				-0.0500**				-0.0043**				-0.0094**		
		(0.004)				(0.017)				(0.000)				(0.003)		
(Difficulty of Hiring)^2						0.0005**								0.0001		
						(0.000)								(0.000)		
Rigidity of Hours			-0.0318**				-0.0845**				-0.0089**				-0.0392**	
			(0.004)				(0.011)				(0.001)				(0.002)	
(Rigidity of Hours)^2							0.0007**								0.0004**	
							(0.000)								(0.000)	
Difficulty of Firing				-0.0023				-0.0243**				-0.0021				-0.0208**
				(0.005)				(0.017)				(0.001)				(0.004)
(Difficulty of Firing)^2								0.0003								0.0002**
								(0.000)								(0.000)
No. of Observations	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640	640
LR chi2	914.62	905.04	938.97	895.44	922.96	911.44	962.99	897.08	1161.11	1145.35	1190.45	1128.40	1240.34	1147.68	1357.07	1145.85
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.3137	0.3104	0.3220	0.3071	0.3165	0.3126	0.3303	0.3077	0.8098	0.7988	0.8303	0.7870	0.8651	0.8004	0.9465	0.7992
Labor Market Flexibility Indicator	Panel C. Developing Countries															
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rigidity of Employment	-0.0183**				-0.1848**				-0.0017				-0.0657**			
	(0.006)				(0.022)				(0.001)				(0.004)			
(Rigidity of Employment)^2					0.0022**								0.0008**			
					(0.000)								(0.000)			
Difficulty of Hiring		-0.0006				-0.0545**				0.0017**				-0.0118**		
		(0.004)				(0.011)				(0.000)				(0.001)		
(Difficulty of Hiring)^2						0.0006**								0.0001**		
						(0.000)								(0.000)		
Rigidity of Hours			-0.0424**				-0.1035**				-0.0097**				-0.0380**	
			(0.005)				(0.013)				(0.001)				(0.003)	
(Rigidity of Hours)^2							0.0008**								0.0004**	
							(0.000)								(0.000)	
Difficulty of Firing				0.0064				0.0003				-0.0004				-0.0066**
				(0.004)				(0.0133)				(0.000)				(0.002)
(Difficulty of Firing)^2								0.0001								0.0001**
								(0.000)								(0.000)
No. of Observations	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984	1984
LR chi2	1177.50	1170.50	1233.13	1172.38	1227.14	1194.84	1249.57	1172.57	1345.35	1349.52	1408.16	1343.51	1581.52	1402.57	1484.85	1350.50
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.2707	0.2691	0.2835	0.2695	0.2821	0.2747	0.2872	0.2695	0.7891	0.7915	0.8259	0.7880	0.9276	0.8226	0.8709	0.7921

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively.

Similar to ILO indexes, Table 2B, Panel A reveals that WB indexes are significant determinants of FDI inflows from Japan and US, implying that investors from both countries

are sensitive to labor market regulations. In general, countries with higher labor market regulations receive fewer FDI from Japan and US. Results likewise reveal that Japanese MNCs are more sensitive to regulations than US MNCs, as implied by the larger magnitude of the coefficients of the indexes for the case of Japan. For both countries, it is evident there is a non-linear relationship between labor market regulations and FDI inflows, and that firing regulations exert the least impact among the labor market regulations considered.

Panels B and C similarly show that Japanese MNCs are in general more sensitive to labor market regulations than US MNCs, except for firing regulations in developing countries. Firing regulations are insignificant for Japanese FDI inflows to developing countries. However, a 10 unit increase in the firing index reduces US FDI inflows to developing countries by about 6 percent.

The foregoing suggests that investors from different countries have different preferences for different labor market standards and regulations. In general, Japanese MNCs are more sensitive to labor market standards and regulations than US MNCs. This finding is consistent with the conclusion of Lee (2003). MNCs from both countries are likewise more negatively affected by hiring and work hour regulations than firing regulations in both developed and developing countries. Firing standards and regulations have the least negative impact on FDI inflows. Firing standards even exert a positive impact on US FDI inflows to all countries.

Next, I consider the possibility that the impact of labor market flexibility on FDI inflows varies per sector. Tables 3A and 3B present estimations for manufacturing[20] and non-manufacturing[21] FDI inflows from Japan and United States.[22]

[20] Manufacturing sector includes production of food, textile, lumber and pulp, chemical, metal, machinery, electrical, and transport.

Table 3A. Impact of Labor Market Standards on FDI Inflows from Japan and US, by Sector

	Japan						US					
Labor Market	Panel A. Manufacturing FDI											
Flexibility Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hiring Standards	-0.0241**			-0.0904**			0.0153**			0.0404**		
	(0.010)			(0.024)			(0.003)			(0.009)		
(Hiring Standards)^2				0.0016**						-0.0004**		
				(0.000)						(0.000)		
At Work Standards		-0.0029			0.0457			-0.0068			0.0012	
		(0.011)			(0.028)			(0.004)			(0.011)	
(At Work Standards)^2					-0.0010*						-0.0001	
					(0.000)						(0.000)	
Firing Standards			-0.0485**			0.1175**			0.0075**			-0.0055
			(0.009)			(0.038)			(0.003)			(0.006)
(Firing Standards)^2						-0.0043**						0.0001**
						(0.001)						(0.000)
No. of Observations	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290
LR chi2	1422.89	1417.21	1450.51	1431.37	1419.53	1480.50	2293.91	2284.04	2287.51	2299.98	2284.52	2291.97
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.4535	0.4516	0.4623	0.4562	0.4524	0.4719	0.4068	0.4051	0.4057	0.4079	0.4052	0.4065
Labor Market	Panel B. Non-Manufacturing FDI											
Flexibility Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hiring Standards	-0.0407**			-0.1108**			-0.0042			0.0200**		
	(0.012)			(0.027)			(0.003)			(0.008)		
(Hiring Standards)^2				0.0016**						-0.0004**		
				(0.000)						(0.000)		
At Work Standards		-0.0269**			-0.0098			-0.0028			0.0322**	
		(0.012)			(0.037)			(0.003)			(0.009)	
(At Work Standards)^2					-0.0001						-0.0006**	
					(0.000)						(0.000)	
Firing Standards			-0.0890**			0.0551			0.0077**			0.0057
			(0.010)			(0.041)			(0.003)			(0.006)
(Firing Standards)^2						-0.0038**						0.0001
						(0.001)						(0.000)
No. of Observations	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291
LR chi2	1210.55	1203.22	1267.75	1217.12	1203.46	1282.33	2385.02	2384.40	2391.30	2391.96	2395.19	2391.43
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.3655	0.3643	0.3838	0.3685	0.3644	0.3883	0.4241	0.4240	0.4252	0.4253	0.4259	0.4252

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively.

Table 3A, Panel A reveals that Japanese FDI inflows to the manufacturing sector are very sensitive to both hiring and firing standards, but insensitive to at work standards. An increase in hiring standards decreases FDI inflows and an increase in firing standards increases FDI inflows as seen in columns (1), (4), and (6). Panel B shows that Japanese FDI inflows to the non-manufacturing sector, meanwhile, are very sensitive to all labor market

[21] Non-manufacturing sector includes farming and forestry, fishery, mining, construction, trade, finance and insurance, service, transportation, real estate, professional, scientific, and technical services, and information.
[22] A caveat to these estimations is that not all countries have reported breakdown of manufacturing and non-manufacturing FDI inflows. Countries with positive values of FDI inflows are therefore those countries which reported a breakdown, but this may not necessarily mean that those with zero FDI inflows did not actually have FDI inflows.

standards. In general, higher labor market standards decreases Japanese FDI inflows to the non-manufacturing sector. The results for US FDI inflows to the manufacturing and non-manufacturing sectors reveal quite a different picture. In contrast to Japanese FDI, US FDI inflows to both sectors are in general positively affected by labor market standards. The only exception is that at work standards are insignificant for US manufacturing FDI.

Table 3B. Impact of Labor Market Regulations on FDI Inflows from Japan and US, by Sector

	Japan								US							
Labor Market Flexibility Indicator	Panel A. Manufacturing FDI															
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rigidity of Employment	-0.0268**				-0.0104				-0.0161**				-0.0614**			
	(0.011)				(0.038)				(0.004)				(0.015)			
(Rigidity of Employment)^2					-0.0002								0.0006**			
					(0.000)								(0.000)			
Difficulty of Hiring		-0.0092*				-0.0360**				-0.0002				-0.0125		
		(0.005)				(0.014)				(0.002)				(0.008)		
(Difficulty of Hiring)^2						0.0003**								0.0001		
						(0.000)								(0.000)		
Rigidity of Hours			-0.0171**				-0.0718**				-0.0138**				-0.0717**	
			(0.008)				(0.021)				(0.003)				(0.010)	
(Rigidity of Hours)^2							0.0008**								0.0008**	
							(0.000)								(0.000)	
Difficulty of Firing				-0.0115*				-0.1140**				-0.0150**				-0.0170*
				(0.006)				(0.015)				(0.002)				(0.008)
(Difficulty of Firing)^2								0.0015**								0.0001
								(0.000)								(0.000)
No. of Observations	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290	2290
LR chi2	1425.66	1419.90	1423.61	1420.30	1425.96	1423.88	1431.45	1459.35	2298.06	2281.79	2299.16	2308.64	2309.10	2248.58	2345.64	2308.69
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.4544	0.4526	0.4537	0.4527	0.4545	0.4538	0.4562	0.4651	0.4076	0.4047	0.4078	0.4094	0.4095	0.4052	0.4160	0.4094
Labor Market Flexibility Indicator	Panel B. Non-Manufacturing FDI															
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rigidity of Employment	0.0165				-0.1924**				0.0024				-0.0725**			
	(0.013)				(0.034)				(0.004)				(0.012)			
(Rigidity of Employment)^2					0.0031**								0.0011**			
					(0.000)								(0.000)			
Difficulty of Hiring		0.0080				-0.1007**				0.0027				-0.0129*		
		(0.007)				(0.016)				(0.002)				(0.007)		
(Difficulty of Hiring)^2						0.0014**								0.0001**		
						(0.000)								(0.000)		
Rigidity of Hours			-0.0074				-0.1267**				-0.0012				-0.0597**	
			(0.010)				(0.021)				(0.003)				(0.008)	
(Rigidity of Hours)^2							0.0018**								0.0008**	
							(0.000)								(0.000)	
Difficulty of Firing				0.0186**				-0.0163**				0.0012				-0.0201**
				(0.008)				(0..017)				(0.002)				(0.008)
(Difficulty of Firing)^2								0.0026**								0.0003**
								(0.000)								(0.000)
No. of Observations	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291	2291
LR chi2	1201.39	1200.44	1199.69	1205.84	1241.18	1244.29	1226.30	1296.50	2384.36	2385.34	2384.11	2384.14	2421.83	2390.84	2440.76	2391.24
Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R2	0.3638	0.3635	0.3632	0.3651	0.3758	0.3767	0.3713	0.3926	0.4239	0.4241	0.4239	0.4239	0.4306	0.4251	0.4340	0.4252

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively.

Table 3B reveals that both manufacturing and non-manufacturing FDI inflows from both Japan and US are negatively affected by regulations. It is likewise noteworthy that a

non-linear relationship between labor market regulations and FDI inflows exist. The implications of these results for the case of US FDI inflows are very similar to what is suggested by the findings in Tables 1A and 1B. In particular, while US MNCs invest more in countries with higher labor standards, regulations have a greater tendency of reducing US FDI inflows. This implies that US foreign investors prefer to invest in countries with some degree of labor market standards as these may signal higher aggregate labor productivity, but they may be wary of some labor market regulations because these translate to actual costs.

Though results show that both manufacturing and non-manufacturing FDI inflows are sensitive to labor market standards and regulations, the impact of the latter on the former varies, depending on the standard or regulation considered. The difference in the impact of standards and regulations on US and Japanese FDI may be explained by the fact that FDI from the two countries go in different specific sectors and that different sectors have varying degrees of sensitivities to different labor market standards and regulations. The bulk of Japanese non-manufacturing FDI goes into service (professional, scientific, technical, information services) (31%), real estate (27%), and finance[23] and insurance (18%), while majority of US non-manufacturing FDI goes into finance[24] (45%), petroleum (16%), and wholesale trade (14%). Greater proportion of Japanese manufacturing FDI goes into electrical (38%), chemical (15%), and transport (11%), while majority of US manufacturing FDI goes into chemical (33%), machinery (17%), and transport (16%).[25]

[23] Including banking institutions
[24] Excluding banking institutions
[25] These figures are based on average US and Japanese outbound FDI from 1990-2003.

VI. Robustness Check

Several robustness checks were performed to verify the results in the preceding section. These estimations are displayed in Tables 4-6.

Table 4. Robustness Check – Coefficients of Wage and Wage^2 Excluding LMF Indicators

	Panel A. Without LMF, FE		
	All Countries	Developed Countries	Developing Countries
Wage	0.0056	0.2478*	-0.0196
	(0.048)	(0.147)	(0.053)
$(Wage)^2$	0.0029	-0.0121	0.0044
	(0.003)	(0.010)	(0.003)
	Panel B. Without LMF, OLS		
	All Countries	Developed Countries	Developing Countries
Wage	0.0624**	0.1203*	0.0644**
	(0.023)	(0.066)	(0.024)
$(Wage)^2$	-0.0032*	0.0042	-0.0040**
	(0.001)	(0.007)	(0.001)

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively. The same explanatory variables that appear in Appendix Table 7 are used in the estimations, but are not shown for brevity purposes.

First, though the correlation between wage and the different labor market flexibility indicators do not suggest a high level of correlation as seen in Appendix Table 8, I recognize the possibility that the labor market indicators may just be capturing the effect of wages or vice-versa. Table 4 contains the coefficients of wage and wage^2 in estimations excluding any labor market flexibility indicator. Coefficients in Panel A are estimated using fixed effects estimation, while coefficients in Panel B are estimated using ordinary least squares. These coefficients can then be compared to the coefficients of wage and wage^2 in Appendix Tables 7A and 7B, where labor market flexibility indicators are included in the estimations. The coefficients of wage and wage^2 displayed in Table 4, Panels A and B are similar to the

coefficients in Appendix Tables 7A and 7B, respectively.[26] This dismisses the possibility that the labor market flexibility indicators are capturing the effects of wages.

Table 5. Robustness Check – Including All LMF Indicators in a Single Estimation

	Panel A. Labor Market Standards					
	All Countries		Developed Countries		Developing Countries	
	(1)	(2)	(3)	(4)	(5)	(6)
Hiring Standards	0.0008	0.0050	0.0042	0.0123	-0.0005	0.0015
	(0.003)	(0.005)	(0.005)	(0.008)	(0.003)	(0.006)
(Hiring Standards)^2		-0.0001		-0.0001		-0.0001
		(0.000)		(0.000)		(0.000)
At Work Standards	0.0137**	0.0056	0.0134**	0.0113	0.0139**	0.0055
	(0.003)	(0.009)	(0.006)	(0.022)	(0.004)	(0.011)
(At Work Standards)^2		0.0001		0.0001		0.0001
		(0.000)		(0.000)		(0.000)
Firing Standards	0.0008	0.0013	-0.0002	-0.0045	0.0016	0.0121**
	(0.001)	(0.003)	(0.002)	(0.005)	(0.002)	(0.005)
(Firing Standards)^2		0.0001		0.0001		-0.0002**
		(0.000)		(0.000)		(0.000)
No. of Observations	2640	2640	656	656	1984	1984
F-statistic	17.11	15.85	10.26	9.53	11.30	10.57
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.2067	0.2072	0.3965	0.3988	0.1873	0.1893
	Panel B. Labor Market Regulations					
	All Countries		Developed Countries		Developing Countries	
	(1)	(2)	(3)	(4)	(5)	(6)
Difficulty of Hiring	0.0010	0.0009	0.0027*	0.0046	-0.0013*	-0.0035*
	(0.000)	(0.001)	(0.001)	(0.005)	(0.000)	(0.001)
(Difficulty of Hiring)^2		0.0001		-0.0001		0.0001
		(0.000)		(0.000)		(0.000)
Rigidity of Hours	0.0024**	0.0031	-0.0020	-0.0466**	0.0024**	0.0155**
	(0.000)	(0.002)	(0.002)	(0.004)	(0.001)	(0.002)
(Rigidity of Hours)^2		-0.0001		0.0005**		-0.0001**
		(0.000)		(0.000)		(0.000)
Difficulty of Firing	-0.0033**	-0.0062**	-0.0040**	0.0038	-0.0040**	-0.0096**
	(0.000)	(0.002)	(0.001)	(0.006)	(0.000)	(0.002)
(Difficulty of Firing)^2		0.0001		-0.0001		0.0001**
		(0.000)		(0.000)		(0.000)
No. of Observations	2640	2640	656	656	1984	1984
F-statistic	37.54	36.31	47.91	50.66	26.90	25.99
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.3205	0.3210	0.6448	0.6994	0.2721	0.2836

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively. The same explanatory variables that appear in Appendix Tables 7A and 7B are used in the estimations, but are not shown for brevity purposes.

Second, instead of adding the labor market indicators one by one, I included the indicators in a single estimation. Results are displayed in Table 5. Panel A adds the ILO indexes in a single estimation and Panel B adds the WB indexes in a single estimation. Comparing these with the coefficients of the ILO and WB indicators in Tables 1A and 1B,

[26] An exception is that the coefficient of wage becomes insignificant when at work indexes are included in the estimations for developed countries, as seen in Appendix Table 7A, Panel B, columns (2) and (5). In addition, the coefficient of wage becomes insignificant when WB indicators enter non-linearly in the estimations for developed countries, as seen in Appendix Table 7B, Panel B, columns (5)-(8).

where the indicators enter singly in the estimations, show that values and significance of most coefficients are similar.[27]

Table 6. Robustness Check – Impact of Labor Market Flexibility in Low and High Rigidity Countries

Panel A. Labor Market Standards

Labor Market Flexibility Indicator	Low Rigidity								High Rigidity							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Hiring Standards	0.0144**			0.0394					-0.0117			-0.0289*				
	(0.006)			(0.075)					(0.004)			(0.016)				
(Hiring Standards)^2				-0.0024								0.0002				
				(0.007)								(0.000)				
At Work Standards		0.0295**			-0.0077					0.0065			-0.0730			
		(0.009)			(0.021)					(0.009)			(0.045)			
(At Work Standards)^2					0.0024**								0.0402			
					(0.001)								(0.061)			
Firing Standards			0.0001			-0.0011					-0.0032			-0.0178**		
			(0.000)			(0.000)					(0.002)			(0.0064)		
(Firing Standards)^2						0.0001								0.0001**		
						(0.000)								(0.000)		
No. of Observations	1199	1554	1552	1199	1554	1552			1432	1077	1079	1432	1077	1079		
F-statistic	6.82	8.62	7.62	6.62	8.50	7.62			10.79	11.83	12.93	10.52	11.61	12.78		
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000			0.000	0.000	0.000	0.000	0.000	0.000		
R-squared	0.1819	0.1721	0.1552	0.1820	0.1743	0.1552			0.2265	0.2932	0.3121	0.2272	0.2955	0.3161		

Panel B. Labor Market Regulations

Labor Market Flexibility Indicator	Low Rigidity								High Rigidity							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Rigidity of Employment	0.0016				-0.0182**				0.0066**				-0.1002**			
	(0.002)				(0.008)				(0.0022)				(0.021)			
(Rigidity of Employment)^2					0.0005**								0.0010**			
					(0.000)								(0.000)			
Difficulty of Hiring		-0.0015				-0.0140**				0.0014				0.0110		
		(0.002)				(0.007)				(0.0011)				(0.007)		
(Difficulty of Hiring)^2						0.0005*								-0.0001		
						(0.000)								(0.000)		
Rigidity of Hours			0.0129**				0.0010				0.0005				-0.0293*	
			(0.003)				(0.000)				(0.001)				(0.015)	
(Rigidity of Hours)^2							0.0006**								0.0002*	
							(0.000)								(0.000)	
Difficulty of Firing				-0.0053**				0.0463**				0.0003				-0.0078
				(0.001)				(0.006)				(0.002)				(0.019)
(Difficulty of Firing)^2								-0.0017**								0.0001
								(0.000)								(0.000)
No. of Observations	1320	1197	878	1417	1320	1197	878	1417	1311	1434	1753	1214	1311	1434	1753	1214
F-statistic	21.13	19.99	32.46	27.65	21.65	19.95	32.46	28.66	19.30	20.80	23.31	18.17	19.96	20.47	22.85	17.68
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.2719	0.3209	0.4230	0.3221	0.2744	0.3224	0.4230	0.3504	0.3940	0.3775	0.3286	0.3813	0.4039	0.3782	0.3303	0.3814

Notes: Values in ( ) are standards errors. ** and * indicate significance at 5% and 10% level, respectively. The same explanatory variables that appear in Appendix Tables 7A and 7B are used in the estimations, but are not shown for brevity purposes.

Third, I divide the sample of countries into low and high rigidity countries. Countries with below average labor market indexes are considered to have less rigid labor markets,

[27] The only exception is that hiring standards loses significance in Table 5. This can be explained by the high correlation between hiring and at work standards as seen in Appendix Table 8.

while those with above average are considered to have more rigid labor markets. Results are shown in Table 6. Panel A, columns (1) and (2) reveal that countries classified under low rigidity will have increasing FDI inflows as hiring and at work standards increase. Firing standards are insignificant for low rigidity countries. Countries classified under high rigidity will have decreasing FDI inflows as hiring and firing standards increase, as seen in Panel A, columns (12) and (14). At work standards are insignificant for high rigidity countries. These suggest that countries with few labor market standards can still increase their standards and attract more FDI. However, for countries with already high labor market standards, increasing standards any further will deter FDI inflows. These confirm earlier results. Panel B shows that as hiring regulations increase in low rigidity countries, FDI inflows will decrease as seen in columns (6), but as work hour and firing regulations increase, FDI inflows will increase, as seen in columns (3) and (8), respectively. Meanwhile, as work hour regulations increase in high rigidity countries, FDI inflows will decrease as seen in column (15), but both hiring and firing regulations are insignificant as displayed in columns (10), (12), (14), and (16). Comparing these results to the developed and developing countries samples in Tables 1A and 1B shows no discernable pattern, suggesting that countries classified under low (high) rigidity countries are not necessarily developed (developing) countries.

Finally, I accounted for other market regulations that may be considered important by MNCs in choosing FDI host countries. In particular, I included variables that may capture the cost of market regulations, namely, the cost of starting a business, cost of registering a property, legal rights of a business, investor protection, and cost of implementing a contract.[28] Some of these variables are highly correlated with each other. For instance, investor

[28] These are from the Doing Business Survey of the World Bank.

protection is highly correlated with legal rights of a business, and cost of a contract is highly correlated with the cost of starting a business. Thus, I did not include highly correlated variables in a single estimation. Some of these variables are likewise highly correlated with the labor market flexibility indexes. For instance, legal rights of a business is highly correlated with the rigidity of employment index[29], and investor protection is highly correlated with the rigidity of hours and difficulty of firing index[30]. In such cases, I excluded the market regulation that is highly correlated with a labor market flexibility indicator. Results show that the other market regulations are not statistically significant in explaining differences in FDI inflows to countries coming from the rest of the world. A possible explanation for this is that the variables considered are highly correlated with the real GDP per capita, which is already included in the estimations.[31]

VII. Conclusion

This study has made a number of significant contributions to our understanding of the labor market flexibility–FDI inflows literature. First, using a simple model, this study was able to reconcile the contrasting findings of previous studies. On the one hand, labor market regulations and standards decrease FDI inflows through the cost channel by increasing the total variable cost faced by a firm when it needs to make an adjustment in its employment level due to market uncertainties. On the other hand, labor market regulations and standards increase FDI inflows through the productivity channel by decreasing the marginal cost of production faced by a firm.

[29] Countries with high degree of legal rights have low rigidity of employment index.
[30] Countries with high degree of investor protection have low rigidity of hours and difficulty of firing indexes.
[31] Average correlation coefficient between GDP per capita and various regulations is 0.50.

Second, in contrast to existing studies that have assumed a simple linear relationship, this study has shown that it is important to account for non-linear relationship between labor market flexibility and FDI inflows. Allowing for a non-linear relationship revealed that some degree of labor market standards and regulations may be attractive for foreign investors as this may signal better labor relations and higher labor productivity. There is evidence that the negative impact of some labor market standards and regulations may only manifest itself at higher levels of standards and regulations. This result is important especially for developing countries that want to attract more FDI inflows. In particular, there is no solid evidence that developing countries should "race to the bottom" in order to attract more FDI. What is needed is a proper balance of labor market regulations that will enhance labor productivity, but at the same time will not be too costly from the point of view of MNCs.

Third, in contrast to previous studies that have used a single aggregated index, this study used disaggregated labor market indicators to investigate the FDI-labor market flexibility relationship. Results strongly suggest that it is important to disaggregate the different aspects of labor market standards and regulations as foreign investors respond differently to them.

Fourth, the use of ILO indexes as indicators of labor market standards and WB indexes as indicators of labor market regulations has shown that it is important to distinguish between labor market standards and regulations. In general, FDI inflows increase in countries with higher labor market standards, but decrease in countries with higher labor market regulations. These suggest that countries should be cautious in formulating regulations to implement standards. While the existence of labor market standards may be attractive to foreign investors as they signal higher labor productivity, the way they are implemented is likewise important, as they can be costly from the point of view of firms.

Finally, this study has shown that Japanese and US MNCs respond differently to labor market standards and regulations. In particular, Japanese MNCs are more sensitive to most labor market standards and regulations, such that FDI inflows from Japan decrease as labor market standards and regulations increase.

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Appendix Table 1. ILO Conventions on
Hiring, At Work, and Firing Standards

Standards	Convention No.
Hiring	
Minimum Age	138
Minimum Age (Industry)	59
Minimum Age (Non-Industrial Employment)	33
Minimum Age (Underground Work)	123
Part-Time Work	175
Minimum Wage Fixing	131
Minimum Wage Fixing (Agriculture)	99
Maintenance of Social Security Rights	157
Medical Care and Sickness Benefits	130
At Work	
Forty-Hour Week	47
Hours of Work (Commerce and Offices)	30
Hours of Work (Industry)	1
Weekly Rest (Commerce and Offices)	106
Weekly Rest (Industry)	14
Holidays with Pay	52,132
Holidays with Pay (Agriculture)	101
Paid Education Leave	140
Protection of Wages	95
Night Work	171
Night Work of Young Persons (Industry)	6, 90
Night Work of Young Persons (Non-Industrial Occupations)	79
Night Work (Women)	89
Employment Injury Benefits	121
Occupational Safety and Health	155
Occupational Health Services	161
Prevention of Major Industrial Accidents	174
Maternity Protection	103
Invalidity, Old-Age, and Survivors' Benefits	128
Firing	
Employment Promotion and Protection Against Unemployment	168
Protection of workers' Claims (Employer's Insolvency)	173
Termination of Employment	158
Unemployment Provision	44
Unemployment	2

Source: www.ilo.org

Appendix Table 2. World Bank Labor Market Flexibility Indicators

Difficulty of Hiring Index (DHI)
- whether term contracts can be used only for temporary tasks
- maximum duration of term contracts
- ratio of mandated minimum wage to the average value added per worker

Rigidity of Hours Index (RHI)
- whether night work is unrestricted
- whether weekend work is allowed
- whether the workweek can consist of 5.5 days
- whether the workday can extend to 12 hours or more (including overtime)
- the annual paid vacation days are 21 or fewer

Difficulty of Firing Index Index (DFI)
- whether redundancy is not considered fair grounds for dismissal
- whether the employer needs to notify the labor union or the labor ministry to fire 1 redundant worker
- whether the employer needs to notify the labor union or the labor ministry for group dismissals
- whether the employer needs approval from the labor union or the labor ministry for firing 1 redundant worker
- whether the employer needs approval from the labor union or the labor ministry for group dismissals
- whether the law mandates training or replacement before dismissal
- whether priority rules apply for dismissals
- whether priority rules apply for reemployment

Source: www.doingbusiness.org/MethodologySurveys/EmployingWorkers.aspx

Appendix Table 3. Summary of Labor Market Indicators for Developed and Developing Countries

Countries	Developed Countries				Developing Countries			
With ILO Conventions	Hiring	At Work	Firing		Hiring	At Work	Firing	
Above the mean	69%	56%	71%		64%	40%	38%	
Below the mean	31%	44%	29%		36%	60%	62%	
With WB Indicators	REI	DHI	RHI	DFI	REI	DHI	RHI	DFI
Above the mean	46%	41%	68%	39%	51%	59%	33%	48%
Below the mean	54%	59%	32%	61%	49%	41%	64%	52%

Appendix Table 4. Labor Market Indicators in Developing Countries

Labor Market Indicator	Developing Country Dummy (=1)
ILO Indicators	
Hiring	-0.0475
At Work	-0.1692
Firing	-0.3990
WB Indicators	
Rigidity of Employment	0.1923
Difficulty of Hiring	0.1426
Rigidity of Hours	0.0303
Difficulty of Firing	0.1162

Appendix Table 5. Variable Description and Sources

Variable	Description	Source
FDI Inflows	Inflows of Foreign Direct Investment from the Rest of the World	www.unctad.org
Japanese FDI	Inflows of Foreign Direct Investment from Japan	http://www.mof.go.jp
US FDI	Inflows of Foreign Direct Investment from US	http://www.bea.gov/international
Wage	Monthly wage in US$	www.ilo.org
GDP per capita	GDP per capita, PPP (constant 2000 international $)	World Development Indicators
Inflation	Annual Inflation Rate	World Development Indicators
Trade	Trade in goods and services (% of GDP)	World Development Indicators
Tax	Taxes on goods and services (% of revenue)	World Development Indicators
Labor Force Participation	% of total population ages 15-64 in the labor force	World Development Indicators
Literacy Rate	Total adult literacy rate (% of people ages 15 and above)	www.unesco.org
Population	Population ages 15-64	World Development Indicators
Exchange Rate	Local Currency Unit per US$, period average	World Development Indicators
External Debt	External debt (% of GDP)	World Development Indicators
Corruption Index	Index ranges from -2.5 to 2.5, with -2.5 and 2.5 indicating the least and most corrupt government	World Governance Indicators
Capital Openness Index	Index ranges from 0-1, with 0 and 1 indicating the most and least capital account restrictions , respectively,	Chinn and Ito (2006)
Manufacturing Value-Added	Manufacturing, value added (constant 2000 US$)	World Development Indicators
Distance from US	Great circle distance between Washington DC, USA and Country's Capital (km)	http://www.indo.com/distance/
Distance from Japan	Great circle distance between Tokyo, Japan and Country's Capital (km)	http://www.indo.com/distance/
Dummy for Democratic Country	Dummy=1 if democratic country; 0, otherwise	World Factbook
Dummies for Preferential Trading Agreement	Dummy=1 if member of PTA; 0, otherwise (PTAs considered are AFTA, NAFTA, EU, MERCOSUR, CARICOM, COMESA)	www.wto.org

Appendix Table 6. Summary Statistics

Variable	Mean	Standard Deveiation	Minimum Value	Maximum Value
FDI Inflows (% of GDP)	6.92	38.88	0	523.37
Japanese FDI, Total (in log)	1.53	2.51	0	10.55
Japanese FDI, Manufacturing (in log)	0.58	1.71	0	9.16
Japanese FDI, Non-Manufacturing	0.59	1.74	0	10.25
US FDI, Total (in log)	8.99	0.47	7.72	9.70
US FDI, Manufacturing (in log)	1.01	1.61	0	5.13
US FDI, Non-Manufacturing (in log)	0.97	1.55	0	4.59
Wage (in log)	5.93	1.83	0	14.79
Hiring Index	18.17	14.77	0	66.67
At Work Index	19.58	15.63	0	66.67
Firing Index	13.24	19.34	0	100
Rigidity of Employment	34.03	17.88	0	74
Difficulty of Hiring	31.88	26.55	0	100
Rigidity of Hours	39.15	22.28	0	80
Difficulty of Firing	31.09	21.80	0	80
GDP per capita	7933	8804	170.55	53582
Inflation	57.29	565.42	0	23773
Trade (% of GDP)	85.28	50.55	10.83	456.08
Taxes on Goods and Services (% of GDP)	29.28	12.79	0.69	79.45
Labor Force Participation Rate	69.73	8.91	46.07	93.12
Literacy Rate	78.36	22.05	11.40	100
Population (in log)	15.62	1.94	10.59	20.98
Exchange Rate (in log)	3.00	3.07	-19.84	14.22
External Debt (% of GDP)	1.40	18.03	0	548.15
Corruption Index	-0.01	1.00	-2.09	2.49
Manufacturing Value-Added	20.87	2.79	11.62	28.15
Distance from US (in log)	8.99	0.47	7.72	9.70
Distance from Japan (in log)	9.16	0.42	7.05	9.82

Appendix Table 7A. Impact of Other Explanatory Variables on FDI Inflows

	Panel A. All Countries						Panel B. Developed Countries						Panel C. Developing Countries					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Wage	0.0035	-0.0084	0.0013	0.0030	-0.0085	-0.0009	0.2904**	0.1915	0.2441*	0.3134**	0.1921	0.2468*	-0.0212	-0.0259	-0.0250	-0.0235	-0.0258	-0.0312
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.147)	(0.146)	(0.147)	(0.148)	(0.146)	(0.148)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
$(Wage)^2$	0.0033	0.0041	0.0031	0.0034	0.0040	0.0032	-0.0139	-0.0085	-0.0120	-0.0153	-0.0085	-0.0121	0.0048	0.0054	0.0047	0.0049	0.0052	0.0053
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
GDP per capita	1.7031**	1.6794**	1.7954**	1.7002**	1.6886**	1.7642**	1.1021**	1.3798**	1.0797**	1.0365**	1.3459**	0.2326**	3.0341**	2.9907**	3.0849**	3.0376**	2.9905**	2.9537**
	(0.622)	(0.620)	(0.622)	(0.623)	(0.620)	(0.623)	(0.451)	(0.437)	(0.405)	(0.451)	(0.445)	(0.425)	(0.836)	(0.833)	(0.835)	(0.836)	(0.833)	(0.837)
$(GDP\ per\ capita)^2$	-0.1079**	-0.1036**	-0.1140**	-0.1076**	-0.1042**	-0.1118**	-0.0518	-0.0641	-0.0047	-0.0469	-0.0623	-0.0123	-0.1946**	-0.1896**	-0.1979**	-0.1947**	-0.1896**	-0.1888**
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.216)	(0.216)	(0.219)	(0.216)	(0.216)	(0.222)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
Inflation Rate	-0.0224	-0.0232*	-0.0214	-0.0221	-0.0227*	-0.0214	0.0335	0.0289	0.0336	0.0372	0.0290	0.0333	-0.0352**	-0.0357**	-0.0347**	-0.0351**	-0.0347**	-0.0336**
	(0.014)	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)	(0.037)	(0.037)	(0.037)	(0.037)	(0.037)	-0.04	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Trade	0.4087**	0.3924**	0.4146**	0.4062**	0.3905**	0.4144**	0.3539**	0.3903**	0.3770**	0.3652**	0.3929**	0.3714**	0.3917**	0.3705**	0.03950**	0.3877**	0.3679**	0.3867**
	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.061)	(0.157)	(0.157)	(0.159)	(0.158)	(0.158)	(0.161)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Tax	-0.0707	-0.0704	-0.0629	-0.0720	-0.0670	-0.0619	-0.1001	-0.0980	-0.1435	-0.1127	-0.1006	-0.1470	-0.0372	-0.0419	-0.0285	-0.0387**	-0.0387**	-0.0257**
	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)	(0.151)	(0.151)	(0.152)	(0.152)	(0.508)	(0.153)	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)	(0.072)
LFP Rate	-0.4528	-0.2719	-0.4633	-0.4390	-0.3052	-0.4350	-0.7826	-0.5439	-0.4180*	-0.8274	-0.5356	-1.4471	-0.2300	-0.1013	-0.1149	-0.1860	-0.1496	-0.0881
	(0.394)	(0.395)	(0.396)	(0.394)	(0.399)	(0.397)	(0.805)	(0.812)	(0.782)	(0.807)	(0.814)	(0.792)	(0.475)	(0.474)	(0.481)	(0.477)	(0.480)	(0.480)
Literacy Rate	0.4010	0.2997	0.4205	0.3872	0.2999	0.4160	3.0753	3.0862	1.0009	2.4714	3.1132	0.7896	0.3431	0.2248	0.3359	0.3394	0.2239	0.3284
	(0.269)	(0.269)	(0.269)	(0.269)	(0.269)	(0.123)	(2.419)	(2.371)	(2.384)	(2.494)	(2.379)	(2.539)	(0.297)	(0.298)	(0.297)	(0.297)	(0.298)	(0.297)
Population	-0.2371	-0.1336	-0.2521	-0.2452	-0.1241	-0.2464	0.1514	0.2775	0.0382	0.0805	0.2798	0.0603	-0.1236	-0.0556	-0.1451	-0.1260	-0.0424	-0.1343
	(0.237)	(0.238)	(0.238)	(0.238)	(0.239)	(0.238)	(0.421)	(0.425)	(0.424)	(0.427)	(0.425)	(0.434)	(0.313)	(0.312)	(0.312)	(0.313)	(0.313)	(0.312)
Exchange Rate	0.0238**	0.0224**	0.0231**	0.0240**	0.0223**	0.0233**	0.1643*	0.1051*	0.1151*	0.1567**	0.1020	0.1188	0.0236**	0.0226**	0.0239**	0.0239**	0.0223**	0.0256**
	(0.010)	(0.010)	(0.010)	(0.018)	(0.010)	(0.010)	(0.095)	(0.094)	(0.098)	(0.095)	(0.096)	(0.099)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
KA Openness	0.0516**	0.0526**	0.0515**	0.0510**	0.0530**	0.0516**	0.0239	0.0198	0.0148	0.0236	0.0196	0.0149	0.0699**	0.0713**	0.0709**	0.0689**	0.0716**	0.0761**
	(0.016)	(0.015)	(0.016)	(0.016)	(0.016)	(0.016)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
External Debt	0.0081	0.0006	0.0095	0.0079	0.0006	0.0091	-0.0304	-0.0308	-0.0207	-0.0299	-0.0303	-0.0203	0.1552	0.1366	0.1522	0.1482	0.1340	0.1573
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)	(0.118)
Corruption Index	0.0835**	0.0828**	0.0811**	0.0825**	0.0828**	0.0812**	0.0424	0.0895	0.0586	0.0075	0.0865	0.0570	0.0817**	0.0810**	0.0798**	0.0808**	0.0809**	0.0797**
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.123)	(0.122)	(0.124)	(0.128)	(0.124)	(0.124)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)
Democracy	0.0027	0.0050	0.0028	0.0026	0.0052	0.0028	0.0125	0.0280	0.0064	0.0098	0.0278	0.0053	0.0036	0.0054	0.0040	0.0033	0.0056	0.0035
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.036)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)

Notes: Columns in each panel correspond to columns in Table 1A. Values in ( ) represent standards errors. ** and * indicate significance at 5% level and 10% level, respectively. Dummy variables for PTAs are included in the estimations, but were not reported to save space.

Appendix Table 7B. Impact of Other Explanatory Variables on FDI Inflows

	Panel A. All Countries								Panel B. Developed Countries								Panel C. Developing Countries							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Wage	0.0634**	0.0647**	0.0648**	0.0668**	0.0554**	0.0648**	0.0644**	0.0669**	0.1249*	0.1182*	0.1288*	0.1112*	0.0456	0.1105	-0.0181	0.1176*	0.0684**	0.0678**	0.0694**	0.0753**	0.0635**	0.0679**	0.0477*	0.0779**
	(0.022)	(0.023)	(0.022)	(0.022)	(0.022)	(0.023)	(0.022)	(0.022)	(0.066)	(0.068)	(0.068)	(0.066)	(0.074)	(0.070)	(0.072)	(0.067)	(0.024)	(0.024)	(0.024)	(0.023)	(0.024)	(0.024)	(0.024)	(0.024)
$(Wage)^2$	-0.0033*	-0.0034*	-0.0035**	-0.0036**	-0.0027	-0.0034*	-0.0035**	-0.0036**	0.0039	0.0046	0.0040	0.0048	0.0096	0.0049	0.0147**	0.0045	-0.0041**	-0.0041**	-0.0043**	-0.0047**	-0.0036**	-0.0041**	-0.0028	-0.0050**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.006)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
GDP per capita	2.0991**	2.0909**	2.1197**	2.0835**	2.0077**	2.0920**	2.1304**	2.1091**	2.4289**	1.8900**	3.1330**	2.6194**	3.1467**	1.7610**	2.9581**	1.9304**	0.8861**	0.9680**	0.9796**	0.7957*	0.8094*	0.9640**	1.1762**	0.8910**
	(0.381)	(0.377)	(0.381)	(0.383)	(0.383)	(0.379)	(0.374)	(0.380)	(0.351)	(0.354)	(0.356)	(0.355)	(0.341)	(0.357)	(0.327)	(0.345)	(0.446)	(0.451)	(0.450)	(0.444)	(0.449)	(0.451)	(0.450)	(0.442)
$(GDP\ per\ capita)^2$	-0.1256**	-0.1253**	-0.1268**	-0.1242**	-0.1201**	-0.1254**	-0.1274**	-0.1257**	-1.6983**	-1.6697**	-1.733**	1.7069**	-1.7357**	-1.6625**	-1.5431**	-1.6708**	-0.0558**	0.0608**	-0.0614**	-0.0499*	-0.0512*	-0.0605**	-0.0725**	-0.0556**
	(0.022)	(0.022)	(0.022)	(0.023)	(0.023)	(0.022)	(0.022)	(0.022)	(0.182)	(0.183)	(0.185)	(0.184)	(0.176)	(0.185)	(0.167)	(0.178)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Inflation Rate	-0.0211	-0.0214	-0.0263*	-0.0199	-0.0218	-0.0214	-0.0256*	-0.0197	-0.0618	-0.0619	-0.0594	-0.0705	-0.0902*	-0.0640	-0.1185**	-0.0512	-0.0421**	-0.0448**	-0.0470**	-0.0434**	-0.0421**	-0.0447**	-0.0379**	-0.0415**
	(0.015)	(0.015)	(0.015)	(0.015)	(0.014)	(0.015)	(0.015)	(0.014)	(0.046)	(0.046)	(0.046)	(0.046)	(0.050)	(0.046)	(0.053)	(0.047)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Trade	0.7097**	0.7098**	0.7126**	0.7132**	0.6971**	0.7103**	0.7136**	0.7099**	0.7146**	0.7352**	0.7140**	0.7058**	0.7016**	0.7378**	0.6996**	0.7336**	0.5727**	0.5704**	0.5710**	0.5855**	0.5602**	0.5686**	0.5889**	0.5913**
	(0.042)	(0.041)	(0.042)	(0.042)	(0.041)	(0.042)	(0.041)	(0.042)	(0.067)	(0.067)	(0.065)	(0.066)	(0.069)	(0.067)	(0.067)	(0.070)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.049)	(0.049)	(0.048)
Tax	0.0930**	0.0904**	0.0936**	0.0982**	0.1044**	0.0904**	0.0926**	0.1004**	-0.1960**	-0.2001**	-0.1780**	-0.2081**	-0.0558	-0.1949**	-0.0294	-0.2144**	0.1378**	0.1393**	0.1362**	0.1404**	0.1439**	0.1391**	0.1252**	0.1462**
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.026)	(0.025)	(0.053)	(0.052)	(0.061)	(0.052)	(0.063)	(0.053)	(0.057)	(0.052)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
LFP Rate	-0.2807*	-0.2881*	-0.3094*	-0.3232*	-0.3165*	-0.2878*	-0.3124*	-0.3194*	-3.1077**	-3.012**	-3.1900**	-3.0697**	-2.9035**	-2.9579**	-2.1963**	-3.0827**	0.4791**	0.4635**	0.4085**	0.3804**	0.4582**	0.4640**	0.3520**	0.3801**
	(0.172)	(0.172)	(0.174)	(0.171)	(0.173)	(0.172)	(0.172)	(0.171)	(0.485)	(0.486)	(0.488)	(0.488)	(0.461)	(0.485)	(0.415)	(0.486)	(0.157)	(0.159)	(0.162)	(0.160)	(0.158)	(0.159)	(0.158)	(0.160)
Literacy Rate	0.2131**	0.2258**	0.2206**	0.1926**	0.2134**	0.2245**	0.2213**	0.1914**	0.7341	0.6941	0.4955	0.9754	0.6809	0.6965	0.7155	0.7859	0.2566**	0.2674**	0.2931**	0.2536**	0.2569**	0.2702**	0.2943**	0.2444**
	(0.061)	(0.062)	(0.061)	(0.061)	(0.061)	(0.062)	(0.061)	(0.061)	(1.084)	(1.064)	(1.092)	(1.129)	(1.036)	(1.071)	(0.975)	(1.119)	(0.064)	(0.064)	(0.063)	(0.063)	(0.064)	(0.065)	(0.062)	(0.063)
Population	-0.0115	-0.0118	-0.0088	-0.0074	-0.0098	-0.0116	-0.0090	-0.0064	-0.1192**	-0.1097**	-0.1185**	-0.1171**	-0.0987**	-0.1115**	-0.0978**	-0.1190**	0.0243**	0.0225**	0.0206*	0.0298**	0.0271**	0.0223**	0.0162	0.0323**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.026)	(0.026)	(0.026)	(0.027)	(0.0205)	(0.027)	(0.023)	(0.027)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Exchange Rate	0.0028	0.0031	0.0047	0.0005	0.0010	0.0032	0.0046	0.0010	0.0117	0.0089	0.0147	0.0136	0.0274	0.0060	0.0249	0.0103	0.0009	0.0025**	0.0042	0.0011	0.0004	0.0023	0.0034	0.0015
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)	(0.018)	(0.018)	(0.018)	(0.018)	(0.020)	(0.018)	(0.017)	(0.018)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
KA Openness	0.0195	0.0198	0.0233*	0.0162	0.0168	0.0198	0.0241*	0.0149*	0.0250	0.0279	0.0253	0.0251	0.0028	0.0278	0.0735	0.0365	0.0323**	0.0352**	0.0364**	0.0314**	0.0313**	0.0352**	0.0441**	0.0302**
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.028)	(0.028)	(0.028)	(0.028)	(0.030)	(0.029)	(0.029)	(0.030)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
External Debt	-0.0015**	-0.0016**	-0.0016**	-0.0015**	-0.0015**	-0.0015**	-0.0016**	-0.0015**	-0.0013**	-0.0014**	-0.0012**	-0.0013**	-0.0009**	-0.0013**	-0.0009**	-0.0014**	-0.0752**	-0.0690**	-0.0630**	-0.0785**	-0.0776**	-0.0695**	-0.0628**	-0.0740**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.028)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Corruption Index	0.0161*	0.0151*	0.0161*	0.0167*	0.0148*	0.0151*	0.0170**	0.0160*	0.1540**	0.1517**	0.1640**	0.1431*	0.17770**	0.1540**	0.2301**	0.1307*	0.0038	0.0044	0.0036	0.0037	0.0029	0.0045	0.0048	0.0029
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.074)	(0.074)	(0.075)	(0.074)	(0.074)	(0.038)	(0.076)	(0.073)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Democracy	-0.0055	-0.0063	-0.0044	-0.0085	-0.0053	-0.0064	-0.0043	-0.0084	-0.0079	-0.0062	-0.0071	-0.0129	0.0123	0.0041	0.0073	0.0130	0.0049	0.0027	0.0032	0.0090	0.0047	0.0026	0.0035	0.0095
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.024)	(0.024)	(0.024)	(0.025)	(0.023)	(0.023)	(0.022)	(0.025)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)

Notes: Columns in each panel correspond to columns in Table 1B. Values in ( ) represent standards errors. ** and * indicate significance at 5% level and 10% level, respectively. Dummy variables for PTAs are included in the estimations, but were not reported to save space.

Appendix Table 8. Correlation of Labor Market Variables

All Countries								
	Wage	Hiring Standards	At Work Standards	Firing Standards	Rigidity of Employment	Difficulty of Hiring	Rigidity of Hours	Difficulty of Firing
Wage	1.0000							
Hiring Standards	0.0050	1.0000						
At Work Standards	0.1184	0.5974	1.0000					
Firing Standards	0.1788	0.3176	0.3176	1.0000				
Rigidity of Employment	-0.1750	0.2371	0.3539	0.1367	1.0000			
Difficulty of Hiring	-0.2143	0.1808	0.2574	0.1178	0.8075	1.0000		
Rigidity of Hours	-0.0004	0.2079	0.4067	0.1286	0.7577	0.4282	1.0000	
Difficulty of Firing	-0.0067	0.1517	0.1368	0.0618	0.7039	0.3327	0.3214	1.0000

Developed Country								
	Wage	Hiring Standards	At Work Standards	Firing Standards	Rigidity of Employment	Difficulty of Hiring	Rigidity of Hours	Difficulty of Firing
Wage	1.0000							
Hiring Standards	-0.1407	1.0000						
At Work Standards	-0.1503	0.7700	1.0000					
Firing Standards	0.0897	0.4037	0.3255	1.0000				
Rigidity of Employment	-0.2493	0.4663	0.6427	0.3515	1.0000			
Difficulty of Hiring	-0.1264	0.4337	0.5969	0.3811	0.8296	1.0000		
Rigidity of Hours	-0.2553	0.3874	0.6102	0.1314	0.8402	0.5064	1.0000	
Difficulty of Firing	-0.2236	0.3296	0.3473	0.3980	0.7980	0.5522	0.4981	1.0000

Developing Country								
	Wage	Hiring Standards	At Work Standards	Firing Standards	Rigidity of Employment	Difficulty of Hiring	Rigidity of Hours	Difficulty of Firing
Wage	1.0000							
Hiring Standards	0.0232	1.0000						
At Work Standards	0.1323	0.5140	1.0000					
Firing Standards	0.0136	0.2829	0.2339	1.0000				
Rigidity of Employment	-0.1067	0.1572	0.2709	0.1288	1.0000			
Difficulty of Hiring	-0.1642	0.1217	0.2049	0.1594	0.8023	1.0000		
Rigidity of Hours	0.0397	0.1182	0.2855	0.0858	0.7536	0.4463	1.0000	
Difficulty of Firing	-0.0850	0.1107	0.1133	0.0311	0.6702	0.2508	0.2934	1.0000