FDI and the Skill Premium

Evidence from Emerging Economies

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WORLD BANK GROUP
Finance, Competitiveness and Innovation Global Practice
October 2018
Abstract

Foreign direct investment may play an important role in transferring technologies from high-income to emerging economies, which can lead to uneven effects on the wages of skilled and unskilled workers. This paper combines project-level data on greenfield foreign direct investment with household surveys to estimate the effects of foreign direct investment on the wage skill premium across sectors and regions in seven emerging economies (Brazil, Colombia, Ethiopia, Mexico, the Philippines, South Africa, and Vietnam). The results suggest that foreign direct investment is associated with a higher probability of employment and higher wages for unskilled workers, relative to skilled workers, in six of the seven countries analyzed in this paper. Moreover, the effects of foreign direct investment on wages are relatively larger for unskilled women.

This paper is a product of the Finance, Competitiveness and Innovation Global Practice. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://www.worldbank.org/research. The authors may be contacted at marciocruz@worldbank.org.
FDI and the Skill Premium: Evidence from Emerging Economies

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JEL CODES: F21, F23, Q32, Q33
Key Words: FDI, inequality, skill premium

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∗We are grateful to seminar participants at the Oxford Centre for the Analysis of Resource-Rich Economies (OxCarre) brownbag for their comments. This paper was supported by the Knowledge for Change Partnership multi-donor trust fund.
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1 Introduction

The rise of income inequality and the increasing trend of automation have been pre-occupied economists and policy makers alike. International trade and technological progress have received significant attention in the literature as key explanations for the growing wage inequality in advanced economies, by disproportionately favoring the demand for more-skilled workers (Acemoglu and Autor, 2011; Autor and Dorn, 2013; Michaels et al., 2014; Maloney and Molina, 2016; Acemoglu and Restrepo, 2017). Less attention has been given to the role of FDI in labor outcomes in developing countries. FDI may play a key role in technology transfer from advanced economies to developing nations (Baldwin, 2016; Javorcik, 2004, 2015; Gorg and Strobl, 2001). If similar skill-biased technologies are embedded in new greenfield FDI projects, this could lead to a similar trend, with an increase in the wage gap between skilled and unskilled workers among those regions and sectors that proportionally receive more FDI projects.

In this paper we use a novel approach, by merging greenfield project-level FDI data with household surveys, to revisit the effects of FDI on the wage skill premium. Our approach is based on a within-country analysis exploiting both regional and sectoral variation, using Mincer-like wage equations in line with Dix-Carneiro and Kovak (2015). To the best of our knowledge, this method and database have not been used to study the effect of FDI on the skill premium. The analysis aims to determine whether FDI affects income inequality within countries via differential wage effects on skilled and unskilled workers. We focus on seven emerging economies, i.e. Brazil, Colombia, Ethiopia, Mexico, the Philippines, South Africa, and Vietnam, driven by data availability and their relevance as FDI host countries.

The literature linking the skill premium to globalization has been motivated partly by classical trade theory, notably factor-proportion theory. In particular, the Stolper-Samuelson theorem suggests that the sectoral specialization that comes along with comparative advantage and international trade should increase the returns of the factor
used intensively in the expanding sector. In advanced economies with a comparative advantage in skill-intensive activities, trade would increase the relative demand for skilled workers, which could lead to an increase in the skill premium, everything else constant. In the US, for example, import competition from China has been found to be particularly harmful to unskilled workers (David et al., 2013). Conversely, according to the same theorem, increased trade openness in developing countries, where low-skilled labor is abundant, would increase the relative demand for unskilled workers. Yet, if skill-biased technology is endogenous with respect to the supply of skilled workers, trade opening may also increase skill premia in developing countries (Acemoglu, 2003).

The empirical evidence on the association between globalization, the skill premia, and inequality in developing countries is far from conclusive. Goldberg and Pavcnik (2007) argue that the episodes of trade liberalization in the 1980s and 1990s in many developing countries were associated with the rising wage inequality and skill premium. Other studies also show that exports are positively associated with the skill premium across industries (Brambilla et al., 2012), and imports of capital goods that are intensive in research and development (R&D) contributed to the increase in the wage premium (Raveh and Reshef, 2016). However, Topalova (2007) finds no effect of trade openness on income inequality across regions in India, while other studies using regional variation in trade liberalization within countries point towards trade reducing the skill premium across regions in Brazil and Indonesia (Dix-Carneiro and Kovak, 2015; Amiti and Cameron, 2012).

The role of FDI in the globalization and wage inequality debate has also been examined. Several studies find FDI to be contributing to rising wage inequality in both host and source countries. A cross-country study by Figini and Gorg (2011) shows that in developing countries wage inequality increases with FDI inward stocks. Head and

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1 As an alternative to the imports of machines and capital goods, Raveh and Reshef (2016) suggest that countries may also receive foreign technology through FDI.

2 The determinants of wage skill premia have also been widely studied by labor economists. Partly motivated by a puzzle observed with the patterns of skill premia in the US, where the skill premia was rising despite an increase in the relative supply of skilled workers (Goldin and Katz, 2008), labor economists emphasized the role played by changes in supply and demand for skills.
Ries (2002) show that a rise in employment in affiliates of Japanese firms in developing countries, namely Japanese FDI, is associated with an increase in non-production wages (skilled wages) relative to production wages. Similar effects of foreign investments were found for firms in Indonesia and Mexico (Lee and Wie, 2015; Feenstra and Hanson, 1997). Looking at the effects of FDI outflows in 17 high-income source countries, Davies and Desbordes (2015) show that greenfield FDI in support services induces polarized skill upgrading, benefitting high-skilled workers at the expense of medium-skilled workers, thereby polarizing wages in source countries. Similarly, Becker et al. (2013) find that foreign expansions by German multinationals were associated with increased skill demand at home. However, technological change is not necessarily biased in favor of skilled workers (Luo, 2017). The tasks that are offshored by multinational firms through greenfield FDI could disproportionately benefit unskilled workers in the host countries, directly or indirectly.\(^3\)

Our results suggest that greenfield FDI is associated with higher wages as well as a higher probability to be employed for unskilled workers, relative to skilled workers, in 6 out of 7 countries. Thus, everything else remaining the same, FDI may be associated with a reduction in wage inequality within those countries. Disaggregating the relationship between FDI and wages by gender, we find that FDI is mostly associated with wage increases of unskilled women, while other groups seem to benefit less.\(^4\) As part of the globalization and inequality debate, our findings for FDI are in line with those of trade liberalization using regional variation within countries and with the theoretical predictions of the Stolper-Samuelson theorem for trade.

The rest of the paper is organized as follows. Section 2 describes the data. Section 3 explains the methodology to analyze the effects of FDI on wage skill premia within countries and presents the results. Section 4 concludes.

\(^3\)Even if the wage skill premia within the foreign firm is relatively higher than the regional average, the spillover effects associated with FDI could lead to a reduction in the wage skill premia.

\(^4\)Because we account for the average skill in the sector-region, our findings could still be consistent with the higher skill premia within firms that receive foreign investment, in case FDI spillover effects (Gorodnichenko et al., 2014) disproportionally benefit unskilled workers.
2 Data

We use a unique data set by combining worker-level information from the World Bank’s International Income Distribution Data Set (I2D2), which contains harmonized household and labor surveys, with FDI project-level information from the fDi Intelligence database.

2.1 FDI

fDi Intelligence has been tracking and verifying individual cross-border greenfield investment projects since 2003. The database, available through fDi Intelligence, which is part of the Financial Times Group, provides project-level information on the value of investments and the estimated jobs created. Importantly, the data allow us to do our analysis both at the sub-national level and at the industry level, as well as to focus on the extensive margin of FDI, i.e. the number of greenfield projects.

Figure 1 shows the evolution of FDI projects in the seven emerging economies we study. Most of these countries saw a steady rise in the yearly number of FDI projects over the years, yet the last couple of years saw a slight reverse in the trend. Brazil saw a steady rise in FDI from 2006 to 2012, culminating with around 550 projects in 2011. Colombia saw a steady rise in FDI from 2003 to 2013, culminating in around 175 projects. As for Brazil, FDI inflows have been declining since 2013. South Africa and the Philippines saw similar increases until 2013 and 2014, whereas Vietnam peaked earlier in 2008 with around 350 projects. In Mexico and Ethiopia FDI projects have been growing since 2003 and have shown more resilience in the last years covered with no observed decline.

5The data are now a primary source of FDI information for UNCTAD, the World Bank, and the Economist Intelligence Unit.

6We aggregate FDI in 10 sectors, namely Agriculture, Extraction, Manufacturing, Construction, Utilities, Commerce, Transport and Communications, Financial and Business Services, Public, and Other Services. The number of regions varies by country: Brazil (27), Colombia (24), Ethiopia (9), Mexico (32), Philippines (42), South Africa (9), Vietnam (96). For most countries these regions refer to state-level information, following the disaggregation available in the I2D2 harmonization.
Table 1 shows the extent of FDI diversification, both at the geographical and sectoral levels, that took place over the period of study. The share of regions receiving FDI projects, the average number of FDI projects per region, and the average number of sectors with FDI projects per region have increased in 6 of the 7 countries. In Mexico for example, the average number of FDI project per region went from 6.5 in 2004 to 29.3 in 2012, considering the cumulative number of new projects over 2009-2012 (an average of 9.3 FDI projects per year). Not only did 97% of regions receive FDI in 2012, up from 81% in 2004, but the average number of targeted sectors per region also went up from 1.8 to 3.7. In the Philippines the expansion and diversification seems less marked but this is due to 2011 being a slump year as seen in Figure 1. Ethiopia’s experience has also been remarkable, with only 10% of its regions hosting FDI in 2004 but 55% in 2014. Overall, this expansion and diversification of FDI projects illustrates the wave of globalization that occurred in the 2000s and this makes it all the more
important to understand its consequences.

Table 1: FDI diversification

| Share of regions with FDI > 0 | Avg nb of projects per region | Avg nb of sectors per region |
|-----------------------------|-------------------------------|------------------------------|
| Brazil                      | 0.74                          | 14.8                         | 2.5                          |
| Colombia                    | 0.38                          | 1.9                          | 0.8                          |
| Ethiopia                    | 0.10                          | 0.1                          | 0.1                          |
| Mexico                      | 0.81                          | 6.5                          | 1.8                          |
| Philippines                 | 1.00                          | 12.0                         | 3.0                          |
| South Africa                | 0.80                          | 7.1                          | 2.2                          |
| Vietnam                     | 0.38                          | 3.3                          | 0.9                          |

2008, 2011, 2012 or 2014*

| Brazil                      | 0.96                          | 73.5                         | 4.0                          |
| Colombia                    | 0.79                          | 21.7                         | 2.8                          |
| Ethiopia                    | 0.55                          | 5.1                          | 1.3                          |
| Mexico                      | 0.97                          | 29.3                         | 3.7                          |
| Philippines                 | 0.81                          | 11.8                         | 1.9                          |
| South Africa                | 1.00                          | 28.9                         | 4.2                          |
| Vietnam                     | 0.52                          | 5.3                          | 1.1                          |

Source: fDiIntelligence. *Note: The end-of-period year varies by country due to the availability of the household survey data. The last years for Brazil, Colombia, and Ethiopia is 2014. For Mexico it is 2012. For the Philippines 2011. For Vietnam South Africa and it is 2008. The end-of-period year information is based on cumulative number of greenfield FDI projects over the last period interval for which the data is available: 2009-2014 for Brazil and Colombia, 2010-2014 for Ethiopia, 2009-2012 for Mexico, 2009-2012 for the Philippines, and 2005-2008 for Africa and Vietnam.

2.2 Household Surveys

We use household surveys from the World Bank’s International Income Distribution Data Set (I2D2) which contains harmonized household and labor surveys. While surveys for Brazil, Colombia, Ethiopia, Mexico, the Philippines, South Africa and Vietnam are available for our baseline year, 2004, the subsequent years available vary by country. The additional years for Brazil and Colombia are 2008 and 2014. The additional years available for Ethiopia are 2009 and 2014. For Mexico they are 2008 and 2012. The additional years available for the Philippines are 2008 and 2011. For South Africa and Vietnam the only additional year we can use is 2008.

The I2D2 data contain harmonized information on wages, gender, sector of activity, location, and education. We adjust the data sets before conducting the analysis in the following way. First, we reduce the sample to individuals between 15 and 59 to focus on
early and prime working ages. Second we define skilled individuals as those who have at least a complete post secondary education. Third, we normalize our measure of wages to monthly payments. Fourth, we drop the top and the bottom 1 percent of wages reported within a particular district to omit outliers. Seventh, we identify 10 industries which are merged with the data on greenfield FDI, namely: Agriculture, Extraction, Manufacturing, Construction, Utilities, Commerce, Transport and Communications, Financial and Business Services, Public, and Other Services. The number of sectors was constrained by the maximum disaggregation available in the I2D2 database.

The evolution of the skill premium can be seen in Figure 2. Here the skill premium is defined as the ratio of skilled to unskilled wages, adjusted for years of experience. A striking observation is that for both men and women the skill premium has been declining in most countries in our sample. The general downward trend in the wage premium was also documented by Cruz and Milet (2017). Eighth, Vietnam is an exception but the last year observed is 2008. In the Philippines it has not changed much over the years. In Ethiopia it has declined for men but increased slightly for women from 2004 to 2012. Hence according to this metric at least these emerging economies have not seen major increases in inequality as measured by the skill premium in the last decade. Another interesting fact is that the skill premium is much higher for women than men. In Ethiopia for example, while skilled women make 3 times more than unskilled women in 2014, down from 5 times in 2004, skilled men make only 2 times more than unskilled men, down from 2.6 times more in 2004. Note that despite the drop in the skill premium, in all countries wages are higher for men relative to women and for skilled relative to unskilled workers. Unskilled women are always at the bottom of the wage distribution, while skilled men are at the top.

The general downward trend in the skill premium is often mirrored by an upward

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7Our results are robust to keeping these observations.
8The rises in wage skill premia and job polarization are common trends associated with skill-biased technologies that have been observed in advanced economies. Maloney and Molina (2016) find no evidence of job polarization for developing countries.
9Maps for all 7 countries documenting the skill premium’s evolution by region are available on request.
Figure 2: Skill premia

(a) Female

(b) Male

Note: The skill premium is defined as the skilled to unskilled wage ratio conditional on years of experience and its square.
trend in the supply of skilled labor. This is also documented by Cruz and Milet (2017) according to whom the supply of skilled labor increased in Brazil, Colombia, and Mexico and also in Ethiopia and the Philippines during 2000-2014. Nonetheless, the wage skill premium is not only determined by the supply of skilled and unskilled workers, but also by demand factors such as the incorporation of skill-biased technologies, as the US case suggests. We examine the role of FDI in shaping the skill premium in the next section.

3 Empirical Strategy and Results

To examine the relationship between greenfield FDI and skill premia, we exploit variation in FDI and wages across time, sectors, and regions in 7 emerging economies. Our approach is similar to the local labor market approach of Dix-Carneiro and Kovak (2015) to which we also add a sectoral dimension. Formally, we estimate the following Mincer-like wage equation:

\[
y_{isrt} = \eta(FDI_{srt} \times e_i) + \gamma FDI_{srt} + \lambda e_i + X' \beta + \delta_{rt} + \varepsilon_{isrt}
\]

where \(y_{isrt}\) is the log wage of individual \(i\) in industry \(s\) in location \(r\) in period \(t\) or a dummy equal to 1 if an individual \(i\) is employed and 0 otherwise. \(e\) is a dummy which is equal to 1 if an individual received a post-secondary education and zero otherwise. \(FDI\) is a measure for greenfield FDI, i.e. number of projects. In our main specification we control for workers’ years of experience and years of experience squared. We include location-year fixed effects, \(delta_{rt}\) and cluster standard errors at the region level.

We are thus able to control for the supply of skilled workers in each region in each period, as well as general country level trends in skill premia, with fixed effects. We thus identify the effect of FDI on skill premia that comes from the variation across

\(^{10}\)For South Africa the study period ends in 2004.
sectors within region-years.

Our estimates of $\eta$ in equation 1 are summarized in Figure 3 (all regression tables are in the Appendix). They suggest that FDI projects are associated with a decrease in the skill premium. The effect is statistically significant in all countries but Vietnam, and is strongest in Ethiopia, where an extra FDI project is associated with a 0.03 log points decline in the skill premium. Note that FDI has a positive effect on wages, so that the reduction in skill premia comes from larger wage increases for unskilled workers, relative to unskilled workers. Also, the positive effect of FDI on overall wages suggests that it may also benefit wage convergence between emerging- and advanced-economies, which reduces global inequality between countries.

Figure 3: The effect of FDI on the skill premium

![Graph showing the effect of FDI on the skill premium.](image)

Note: Estimates of $\eta$ in equation 1, i.e. the marginal effect of FDI on the skill premium controlling for gender, the individual’s years of work experience and its square. The capped lines show 95% confidence intervals. Countries are ordered by GDP per capita in 2004.

The magnitudes of the effects are summarized in Table 2. The numbers in the first two columns show how the skill premium, defined as the ratio of skilled to unskilled wages, declines with 10 FDI projects. In Ethiopia the skill premium falls from 2.85
to 2.11, meaning that skilled workers no longer make 2.85 times more than unskilled workers but only 2.11 times more. In South Africa it falls from 2.91 to 2.71. The last two columns show the effect of 10 FDI projects per sector-region on the wages of skilled and unskilled workers. The effects are defined as ratios, i.e. wages where there are 10 projects (per sector-region) over where there are none. In Ethiopia, skilled wages are 7% lower in sector-regions that received 10 FDI projects. In the Philippines they are 5% higher. In most countries of our sample, there is either no effect or only a small effect of FDI on skilled wages. The picture is different for unskilled wages which see a clear boost from 10 FDI projects in the sector-regions that received the investments. In Ethiopia unskilled wages go up by 26%, in the Philippines by 12%. The lowest increase is in Brazil where they increase by only 1%. Overall, these numbers confirm the important role that FDI may have in lowering the skill premium and thus contributing to a reduction in income inequality in emerging economies.

Table 2: The effects of FDI projects on wages by sector-region

| Country      | Skill premium (at FDI=0) | Skill premium (at FDI=10) | Effect of 10 projects on skilled wages | Effect of 10 projects on unskilled wages |
|--------------|--------------------------|---------------------------|---------------------------------------|----------------------------------------|
| Brazil       | 1.99                     | 1.97                      | 1.00                                  | 1.01                                   |
| Colombia     | 2.06                     | 2.00                      | 1.00                                  | 1.03                                   |
| Ethiopia     | 2.85                     | 2.11                      | 0.93                                  | 1.26                                   |
| Mexico       | 2.11                     | 2.03                      | 1.00                                  | 1.04                                   |
| Philippines  | 1.97                     | 1.86                      | 1.05                                  | 1.12                                   |
| South Africa | 2.91                     | 2.71                      | 1.02                                  | 1.09                                   |
| Vietnam      | 1.79                     | 1.78                      | 1.03                                  | 1.04                                   |

Note: The numbers are based on estimates from equation 1. The skill premium and FDI effect numbers here are defined as ratios, i.e. wages of skilled over unskilled. The first two columns compare average wages where there are 10 projects (by sector-region per year) over where there are none. For example in Ethiopia skilled workers make 2.85 times more than unskilled workers when there are no FDI projects, but only 2.11 times more when there are 10 FDI projects in their sector-region.

To explore this mechanism further and see how it differs across gender we interact the main variables in 1 with a dummy $g$ which is equal to 1 if an individual reports to
be a male and 0 otherwise. Formally, we estimate the following specification:

\[ y_{isrt} = \gamma FDI_{srt} + \eta(FDI_{srt} \times e_i) + \omega(FDI_{srt} \times g_i) + \nu(FDI_{srt} \times g_i \times e_i) + \epsilon_{isrt} \]

\[ \epsilon_{isrt} = e_i + g_i + (e_i \times g_i) + \delta_{rt} + \epsilon_{isrt} \]

In general we find FDI to increase wages most for unskilled women, thus contributing to a reduction in income inequality not only via a reduction in the skill premium but also in the gender gap.\(^{11}\) The result tables for each country are displayed in the Appendix. In Ethiopia an extra FDI project increases the wages of unskilled women by around 0.05 log points while it does not increase that of skilled men. In the Philippines, it increases the wages of unskilled women by around 0.014 log points while it increases that of skilled men by less than 0.005 log points.

To gauge the magnitude of the effects, Table 3 summarizes the percentage increase in wages due to 10 FDI projects (by sector-region-year) across individuals by skills and gender. The biggest effect on wages is for unskilled women. In Ethiopia, the latter see their wage increase by 55% with 10 FDI projects by sector-region.\(^{12}\) The wages of skilled men on the other hand fall by 11.3%. The differences are biggest between unskilled women and skilled men in all countries but Vietnam and Colombia, where unskilled men see the biggest wage gains from FDI.

Our results suggest that greenfield FDI may have contributed to a fall in income inequality in emerging economies via a reduction in the skill premium. Our results contrast with the hypothesis that FDI has effects similar to that of skill-biased technical change on increasing the skill premium in host countries. On the other hand our results are in line with those of trade liberalization found in Brazil by Dix-Carneiro and Kovak (2015) and in Indonesia by Amiti and Cameron (2012) suggesting that lower import

\(^{11}\)Wage discrimination by gender is well documented. See Goldin (2014). In the context of globalization, Bler et al. (2015) suggest that the gender gap is higher in exporting firms, suggesting that globalization may increase the gender gap.

\(^{12}\)Ethiopia had an average of 11 greenfield FDI projects per year, over 2004-2014. The year with the most projects was 2014, with 32 projects.
Table 3: The effects of 10 FDI projects on wages by skills and gender (% change)

|         | Skilled | Unskilled | Skilled | Unskilled |
|---------|---------|-----------|---------|-----------|
| Brazil  | 0.00    | 1.01      | 0.00    | 1.01      |
| Colombia| 1.01    | 4.08      | 1.01    | 3.05      |
| Ethiopia| -11.31  | 8.33      | -1.98   | 55        |
| Mexico  | 0.00    | 3.05      | 1.01    | 5.13      |
| Philippines| 4.08 | 10.52     | 5.13    | 13.88     |
| South Africa| -1.00 | 2.02      | 0.00    | 6.18      |
| Vietnam | 4.08    | 4.08      | 2.02    | 4.08      |

From Eq. 2 $e^{10(\lambda+\eta+\omega+\nu)} e^{10(\lambda+\omega)} e^{10(\lambda+\eta)} e^{10\lambda}$

Note: The numbers are percentage increases based on estimates from equation 2.

Tariffs reduce the skill premium.

4 Conclusion

In this paper we examined the effect of FDI on wage skill premia in seven emerging economies. We matched information on FDI penetration from a project-level FDI data set with data on wages from household surveys by sector, location and year. This allowed us to estimate the effect of FDI on the skill premium across sectors within regions within countries. We found that FDI is associated with a higher probability of employment and higher wages for unskilled workers, relative to skilled workers, in 6 of the 7 countries. While our results contrast with the previous literature suggesting that FDI has effects similar to that of skill-biased technical change on increasing the skill premium, we noted that our results are in line with those of trade liberalization. Because our estimates are done at the country-sector-region level, we may also capture potential spillover effects (e.g. backward and forward linkages) of FDI within sector-regions. Our results suggest that globalization may thus have inequality-reducing qualities via FDI that should not be overlooked.
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5 Appendix

The Appendix contains all regression tables for Equations 1 and 2. It also includes graphs illustrating the effect of FDI on wages by skill and gender.

Table 4: Ethiopia

(a) Wages and Employment

|                | (1) Employment | (2) ln(wage) |
|----------------|----------------|--------------|
| Skilled * FDI  | -0.015**       | -0.030***    |
|                | (0.006)        | (0.009)      |
| Skilled        | 0.170***       | 1.046***     |
|                | (0.019)        | (0.048)      |
| FDI            | 0.053***       | 0.023***     |
|                | (0.009)        | (0.003)      |
| Male           | 0.190***       | 0.532***     |
|                | (0.005)        | (0.022)      |
| Experience     | 0.043***       | 0.033***     |
|                | (0.001)        | (0.005)      |
| Experience2    | -0.001***      | -0.000***    |
|                | (0.000)        | (0.000)      |
| N              | 121447         | 35557        |
| R-sq           | 0.24           | 0.59         |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 4: Ethiopia

(a) Wages and Employment

|                          | (1) Employment | (2) ln(wage) |
|--------------------------|----------------|-------------|
| Skilled * Male * FDI     | 0.021**        | 0.026**     |
|                          | (0.007)        | (0.010)     |
| Skilled * FDI            | -0.027**       | -0.046**    |
|                          | (0.009)        | (0.015)     |
| Male * FDI               | -0.037***      | -0.036**    |
|                          | (0.009)        | (0.011)     |
| Skilled * Male           | -0.099***      | -0.435***   |
|                          | (0.017)        | (0.043)     |
| Skilled                  | 0.221***       | 1.300***    |
|                          | (0.029)        | (0.072)     |
| FDI                      | 0.075***       | 0.044***    |
|                          | (0.015)        | (0.010)     |
| Male                     | 0.236***       | 0.782***    |
|                          | (0.010)        | (0.044)     |
| Experience               | 0.043***       | 0.035***    |
|                          | (0.001)        | (0.005)     |
| Experience2              | -0.001***      | -0.001***   |
|                          | (0.000)        | (0.000)     |

N 121447 35557
R-sq 0.25 0.60

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages
Table 5: Vietnam

(a) Wages and Employment

|                    | (1) Employment | (2) ln(wage) |
|--------------------|----------------|--------------|
| Skilled * FDI      | 0.003***       | -0.001       |
|                    | (0.001)        | (0.001)      |
| Skilled            | -0.054***      | 0.580***     |
|                    | (0.007)        | (0.028)      |
| FDI                | 0.008***       | 0.004***     |
|                    | (0.001)        | (0.001)      |
| Male               | 0.039***       | 0.212***     |
|                    | (0.009)        | (0.017)      |
| Experience         | 0.030***       | 0.046***     |
|                    | (0.001)        | (0.002)      |
| Experience2        | -0.000***      | -0.001***    |
|                    | (0.000)        | (0.000)      |
| N                  | 84903          | 20014        |
| R-sq               | 0.33           | 0.48         |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 5: Vietnam

(a) Wages and Employment

|                            | (1) Employment | (2) ln(wage) |
|---------------------------|----------------|-------------|
| Skilled * Male * FDI      | 0.001*         | 0.002       |
|                           | (0.001)        | (0.004)     |
| Skilled * FDI             | 0.002*         | -0.002      |
|                           | (0.001)        | (0.003)     |
| Male * FDI                | -0.002***      | -0.000      |
|                           | (0.000)        | (0.002)     |
| Skilled * Male            | -0.045***      | -0.280***   |
|                           | (0.010)        | (0.033)     |
| Skilled                   | -0.030***      | 0.749***    |
|                           | (0.011)        | (0.036)     |
| FDI                       | 0.010***       | 0.004**     |
|                           | (0.001)        | (0.002)     |
| Male                      | 0.053***       | 0.324***    |
|                           | (0.011)        | (0.022)     |
| Experience                | 0.030***       | 0.046***    |
|                           | (0.001)        | (0.002)     |
| Experience2               | -0.000***      | -0.001***   |
|                           | (0.000)        | (0.000)     |

| N                         | 84903          | 20014       |
| R-sq                      | 0.33           | 0.49        |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages
### Table 6: Philippines

(a) Wages and Employment

|               | (1) Employment | (2) ln(wage) |
|---------------|----------------|-------------|
| Skilled * FDI | -0.012***      | -0.006**    |
|               | (0.002)        | (0.002)     |
| Skilled       | 0.133***       | 0.680***    |
|               | (0.008)        | (0.034)     |
| FDI           | 0.025***       | 0.011***    |
|               | (0.004)        | (0.002)     |
| Male          | 0.271***       | 0.157***    |
|               | (0.023)        | (0.015)     |
| Experience    | 0.023***       | 0.030***    |
|               | (0.001)        | (0.003)     |
| Experience2   | -0.000***      | -0.000***   |
|               | (0.000)        | (0.000)     |

| N            | 297494         | 84995       |
| R-sq         | 0.22           | 0.34        |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 6: Philippines

(a) Wages and Employment

|                     | (1) Employment | (2) ln(wage) |
|---------------------|----------------|-------------|
| Skilled * Male * FDI| 0.016***       | 0.002       |
|                     | (0.005)        | (0.002)     |
| Skilled * FDI       | -0.023***      | -0.008**    |
|                     | (0.005)        | (0.003)     |
| Male * FDI          | -0.023***      | -0.003*     |
|                     | (0.004)        | (0.001)     |
| Skilled * Male      | -0.111***      | -0.381***   |
|                     | (0.015)        | (0.021)     |
| Skilled             | 0.190***       | 0.929***    |
|                     | (0.013)        | (0.038)     |
| FDI                 | 0.040***       | 0.013***    |
|                     | (0.004)        | (0.002)     |
| Male                | 0.335***       | 0.398***    |
|                     | (0.020)        | (0.032)     |
| Experience          | 0.023***       | 0.030***    |
|                     | (0.001)        | (0.003)     |
| Experience2         | -0.000***      | -0.000***   |
|                     | (0.000)        | (0.000)     |

N: 297494 84995
R-sq: 0.23 0.36

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages
|                | (1) Employment | (2) ln(wage) |
|----------------|---------------|-------------|
| Skilled * FDI  | -0.005*       | -0.007**    |
|                | (0.002)       | (0.003)     |
| Skilled        | 0.226***      | 1.068***    |
|                | (0.010)       | (0.043)     |
| FDI            | 0.021**       | 0.009***    |
|                | (0.007)       | (0.002)     |
| Male           | 0.128***      | 0.360***    |
|                | (0.010)       | (0.048)     |
| Experience     | 0.038***      | 0.038***    |
|                | (0.001)       | (0.004)     |
| Experience2    | -0.001***     | -0.000***   |
|                | (0.000)       | (0.000)     |
| N              | 151744        | 24474       |
| R-sq           | 0.29          | 0.32        |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 7: South Africa

(a) Wages and Employment

|                      | (1) Employment | (2) ln(wage) |
|----------------------|----------------|--------------|
| Skilled * Male * FDI | 0.006*         | 0.003        |
|                      | (0.002)        | (0.003)      |
| Skilled * FDI        | -0.009**       | -0.006**     |
|                      | (0.003)        | (0.003)      |
| Male * FDI           | -0.014***      | -0.004**     |
|                      | (0.004)        | (0.002)      |
| Skilled * Male       | -0.008         | -0.310***    |
|                      | (0.038)        | (0.030)      |
| Skilled              | 0.230***       | 1.145***     |
|                      | (0.051)        | (0.023)      |
| FDI                  | 0.032***       | 0.006***     |
|                      | (0.009)        | (0.002)      |
| Male                 | 0.142**        | 0.426***     |
|                      | (0.044)        | (0.018)      |
| Experience           | 0.038***       | 0.036***     |
|                      | (0.008)        | (0.002)      |
| Experience2          | -0.001***      | -0.000***    |
|                      | (0.000)        | (0.000)      |

| N | 151744 | 24474 |
|---|--------|-------|
| R-sq | 0.29 | 0.38 |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages
Table 8: Mexico

(a) Wages and Employment

|                  | (1)                | (2)                |
|------------------|--------------------|--------------------|
| Employment       | ln(wage)           |                   |
| Skilled * FDI    | -0.003***          | -0.004**           |
|                  | (0.001)            | (0.001)            |
| Skilled          | 0.138***           | 0.748***           |
|                  | (0.005)            | (0.026)            |
| FDI              | 0.011***           | 0.004***           |
|                  | (0.001)            | (0.001)            |
| Male             | 0.313***           | 0.441***           |
|                  | (0.012)            | (0.017)            |
| Experience       | 0.028***           | 0.046***           |
|                  | (0.001)            | (0.002)            |
| Experience2      | -0.001***          | -0.001***          |
|                  | (0.000)            | (0.000)            |
| N                | 142095             | 82549              |
| R-sq             | 0.25               | 0.28               |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 8: Mexico

(a) Wages and Employment

|                          | (1) Employment | (2) ln(wage) |
|--------------------------|----------------|--------------|
| Skilled * Male * FDI     | 0.007***       | 0.001        |
|                          | (0.001)        | (0.002)      |
| Skilled * FDI            | -0.007***      | -0.004*      |
|                          | (0.001)        | (0.002)      |
| Male * FDI               | -0.013***      | -0.002*      |
|                          | (0.001)        | (0.001)      |
| Skilled * Male           | -0.202***      | -0.267***    |
|                          | (0.012)        | (0.020)      |
| Skilled                  | 0.234***       | 0.906***     |
|                          | (0.008)        | (0.032)      |
| FDI                      | 0.019***       | 0.005***     |
|                          | (0.002)        | (0.001)      |
| Male                     | 0.399***       | 0.540***     |
|                          | (0.009)        | (0.016)      |
| Experience               | 0.028***       | 0.046***     |
|                          | (0.001)        | (0.002)      |
| Experience2              | -0.001***      | -0.001***    |
|                          | (0.000)        | (0.000)      |

N 142095 82549
R-sq 0.27 0.28

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages
Table 9: Colombia
(a) Wages and Employment

|            | (1) Employment | (2) ln(wage) |
|------------|----------------|--------------|
| Skilled * FDI | -0.002***      | -0.003***    |
|            | (0.001)        | (0.001)      |
| Skilled    | 0.153***       | 0.725***     |
|            | (0.006)        | (0.024)      |
| FDI        | 0.009***       | 0.003***     |
|            | (0.002)        | (0.001)      |
| Male       | 0.258***       | 0.360***     |
|            | (0.026)        | (0.017)      |
| Experience | 0.033***       | 0.038***     |
|            | (0.001)        | (0.002)      |
| Experience2| -0.001***      | -0.001***    |
|            | (0.000)        | (0.000)      |
| N          | 336929         | 194197       |
| R-sq       | 0.24           | 0.32         |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 9: Colombia

(a) Wages and Employment

|                      | (1)                   | (2)                   |
|----------------------|-----------------------|-----------------------|
|                      | Employment            | ln(wage)              |
| Skilled * Male * FDI | 0.004***              | -0.001                |
|                      | (0.001)               | (0.001)               |
| Skilled * FDI        | -0.004***             | -0.002***             |
|                      | (0.001)               | (0.000)               |
| Male * FDI           | -0.007***             | 0.001                 |
|                      | (0.002)               | (0.001)               |
| Skilled * Male       | -0.179***             | -0.235***             |
|                      | (0.012)               | (0.023)               |
| Skilled              | 0.239***              | 0.868***              |
|                      | (0.011)               | (0.034)               |
| FDI                  | 0.012***              | 0.003***              |
|                      | (0.003)               | (0.000)               |
| Male                 | 0.356***              | 0.484***              |
|                      | (0.021)               | (0.025)               |
| Experience           | 0.033***              | 0.039***              |
|                      | (0.001)               | (0.002)               |
| Experience2          | -0.001***             | -0.001***             |
|                      | (0.000)               | (0.000)               |

N 336929 194197
R-sq 0.25 0.33

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages

![Graphs showing wage changes for men and women in different skill levels for both unemployment and skilled categories.](image-url)
Table 10: Brazil

(a) Wages and Employment

|                      | (1) Employment | (2) ln(wage) |
|----------------------|---------------|-------------|
| Skilled * FDI        | -0.001***     | -0.001***   |
|                      | (0.000)       | (0.000)     |
| Skilled              | 0.161***      | 0.686***    |
|                      | (0.005)       | (0.013)     |
| FDI                  | 0.002***      | 0.001***    |
|                      | (0.000)       | (0.000)     |
| Male                 | 0.229***      | 0.395***    |
|                      | (0.012)       | (0.012)     |
| Experience           | 0.026***      | 0.045***    |
|                      | (0.001)       | (0.001)     |
| Experience2          | -0.000***     | -0.001***   |
|                      | (0.000)       | (0.000)     |
| N                    | 721314        | 444401      |
| R-sq                 | 0.17          | 0.46        |

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.
Figure 10: Brazil

(a) Wages and Employment

|                           | (1) Employment | (2) ln(wage) |
|---------------------------|----------------|--------------|
| Skilled * Male * FDI      | 0.000**        | -0.000**     |
|                           | (0.000)        | (0.000)      |
| Skilled * FDI             | -0.000**       | -0.001***    |
|                           | (0.000)        | (0.000)      |
| Male * FDI                | -0.000**       | 0.000        |
|                           | (0.000)        | (0.000)      |
| Skilled * Male            | -0.003***      | -0.154***    |
|                           | (0.001)        | (0.007)      |
| Skilled                   | 0.001***       | 0.775***     |
|                           | (0.000)        | (0.012)      |
| FDI                       | 0.000**        | 0.001***     |
|                           | (0.000)        | (0.000)      |
| Male                      | 0.005***       | 0.473***     |
|                           | (0.002)        | (0.014)      |
| Experience                | 0.000***       | 0.046***     |
|                           | (0.000)        | (0.001)      |
| Experience2               | -0.000***      | -0.001***    |
|                           | (0.000)        | (0.000)      |

N 721314 444401
R-sq 0.99 0.46

Note: District-year fixed effects included in all regressions. Standard errors in parenthesis clustered by district, and * stands for statistical significance at the 10% level, ** at the 5% level and *** at the 1% percent level.

(b) Employment

(c) Wages