Offshoring, Immigration and the Domestic Wage Distribution:

Evidence from the U.S. States 2000-05

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Abstract:

While workers in developed countries have become increasingly concerned about the impact of offshoring and immigration on domestic wages, the available evidence on the link between offshoring, immigration, and wages remains ambiguous. This paper presents a simple model that identifies the impact of offshoring and immigration on native wages and tests these predictions using U.S. state-industry level data. Highlighting the importance of the productivity effect identified in the model, the results show that offshoring increases and immigration decreases the wages of domestic workers. Decomposing offshoring and immigration according to the income level of the foreign country proves to be an important distinction with results indicating that offshoring to less developed countries and immigration from developed countries increases the wages of most native workers while offshoring to developed countries and immigration from less developed countries decreases the wages of most native workers.

1. Introduction:

Workers in developed countries are becoming increasingly concerned about the impact of offshoring and immigration on their domestic labor market.[1] 77% of Americans think that offshoring has hurt them (13% believe it has helped) and 55% of Americans believe immigration has hurt them (28% believe it has helped).[2] While many American workers blame their stagnant wages on the increased prevalence of offshoring and immigration, the available evidence on the link between offshoring, immigration and wages remains ambiguous. This paper presents a simple model that highlights the implications of offshoring and immigration on domestic wages and then tests these predictions using a comprehensive data set.

Offshoring domestic jobs abroad and the immigration of foreign workers into the country are mechanisms that increase the effective labor force available to domestic firms. However, they will differ in their implications for domestic wages, if the benefits of offshoring and immigration accrue to different factors of production. A simple model is constructed that clarifies the relationship between offshoring, immigration and domestic wages. Both offshoring and immigration lead to a labor supply effect which depresses the wages of native workers. Wages must fall to reabsorb workers who were displaced due to the offshoring of jobs or the immigration of workers. Offshoring also generates a productivity effect which refers to the costs savings that firms enjoy after relocating some tasks abroad and results in an increase in the wages of native workers. However, immigration does not generate a productivity effect since domestic firms must

[1] Offshoring refers to the relocation of domestic jobs to foreign countries and immigration refers to the movement of foreigners into the domestic country.
[2] "Public Says American Work Life is Worsening, But Most Workers Remain Satisfied with Their Jobs," Pew Research Center, 2006.

pay native and immigrant workers similar wages. Unlike offshoring, the benefits of country wage differences are captured by the immigrants rather than the domestic firms. Thus comparing the impact of offshoring and immigration on the wages of native workers offers a unique opportunity to test for the presence of the productivity effect.

The predicted impact of immigration and offshoring on different wage deciles of native workers is then tested using a comprehensive data set that exploits U.S. state-industry level variation over time. Using state-industry level data is appealing because it introduces a substantial amount of variation, it mitigates many of the mobility concerns associated with city or county level analyses, and it controls for compositional industry adjustments. Results show that offshoring increases and immigration decreases the wages of most native workers, which provides empirical support for the presence of the productivity effect identified in the model. Offshoring and immigration are then grouped according to the income level of the foreign country, which focuses attention on the components of offshoring and immigration that are most similar to those envisioned in the model, specifically offshoring to less developed countries and immigration from less developed countries. As predicted, the results show that offshoring to less developed countries increases and immigration from less developed countries decreases the wages of low skilled native workers. These components of offshoring and immigration are contrasted with offshoring to developed countries and immigration from developed countries where the relative strength of the productivity and labor supply effect likely differs. As expected, offshoring to developed countries decreases the wages of low skilled workers and immigration from developed countries increase the wages of all types of workers. These results suggest that a public policy that encouraged offshoring to less developed countries and immigration from developed countries would benefit the American worker.

In the theoretical literature it is generally assumed that offshoring and immigration are substitutes. Domestic firms can either relocate domestic jobs abroad to be filled by foreign workers (offshoring) or they can hire foreign workers who have migrated into the U.S. to fill domestic jobs (immigration). However, as Grossman and Rossi-Hansberg (2008) argue, the implications for domestic wages can be quite different. They show that offshoring generates a productivity effect which can increase the wages of domestic workers whose jobs are sent abroad. They then discuss the similarities and differences of offshoring and immigration, although they do not explicitly include immigration in their model. The impact of offshoring and immigration on domestic wages will be formalized in the model that follows by incorporating immigration and offshoring into a unified framework.

While theorists have noted certain similarities between offshoring and immigration, there are few empirical studies that examine offshoring and immigration in the same context. However, there is a substantial literature examining the link between offshoring and wages and the link between immigration and wages. There is evidence that offshoring can explain as much as 40% of the observed wage inequality (Feenstra and Hanson 1999) while others find no relationship between offshoring and relative wages (Slaughter 2000). Similarly, the debate on the impact of immigration on domestic labor markets also remains unresolved. Some find that immigrants are absorbed into local labor markets and there is little impact on domestic wages (Card 1990, 2001), while others show that immigration decreases the wages of native workers (Borjas 2003). The analysis in this paper draws together these two strands of literature in an attempt to uncover the full impact of offshoring and immigration on the wages of native workers and to identify whether the productivity effect is empirically significant. In addition, it is shown that accounting for the income level of the foreign host country is crucial for understanding the link between offshoring, immigration, and domestic wages.

The remainder of the paper is organized as follows. A simple model is constructed in Section 2 that highlights the impact of offshoring and immigration on domestic wages. Section 3 presents the estimation strategy while Section 4 describes the data used in this analysis. The results are discussed in Section 5 and a variety of sensitivity analyses are pursued in Section 6. Finally, Section 7 concludes.

2. Model:

The goal of this section is to construct a simple model that clarifies the relationship between offshoring, immigration, and domestic wages.[3] Consider a small economy, such as a state, that takes the foreign wage and relative price as given and specializes in the production of a particular good X. The production of good X requires L-workers, who are relatively less skilled, and H-workers, who are relatively more skilled. There are a continuum of L-tasks and H-tasks performed by each type of worker. The tasks are defined such that each task must be performed once in order to produce a unit of good X. Each L-task requires a_{LX} units of domestic low skilled labor and each H-task requires a_{HX} units of domestic high skilled labor. With out loss of generality, the

[3] Specifically this model incorporates immigration into a variation of the Grossman & Rossi-Hansberg's (2008) trade in tasks model.

number of L and H tasks is normalized to one. Thus a_{LX} and a_{HX} also indicate the amount of domestic L-labor and H-labor necessary to produce a unit of good X.

It is possible to offshore L-tasks to the foreign country and it is possible for foreign L-workers to immigrate to the home state, while the offshoring of H-tasks and the immigration of H-workers are negligible. The L-tasks are ordered such that the costs of offshoring are increasing. Let w and w* be the wages of the L-workers in the home and foreign country respectively (with w>w*). A firm can produce task j domestically at a cost of wa_{LX} or it can produce task j abroad at a cost of $w^* a_{LX} \beta g(j)$, where β is a shift parameter that captures changes in the cost of offshoring and g(j) is a continuously differentiable function with g'(j)>0 due to the ordering of the tasks. Firms offshore tasks in order to take advantage of lower foreign wages but face increasing costs of offshoring, $\beta g(j) \geq 1$. Thus there exists a task J such that the wage savings is exactly equal to the costs of offshoring:

(1) $w = \beta g(J) w^*$

If $w < \beta g(j) w^*$ then task j is performed at home and if $w > \beta g(j) w^*$ then task j is performed abroad. A reduction in the cost of offshoring (dβ<0) leads to an increase in the share of low skilled tasks that are offshored (dJ>0).

If firms optimally choose a_{LX}, a_{HX}, and the tasks to offshore, then profit maximization implies that price equals marginal cost:

(2) $P_X = wa_{LX}(.)(1-J) + w^* a_{LX}(.) \int_0^J \beta g(j) dj + sa_{HX}$

where s represents the high skilled wage and a_{LX} and a_{HX} are functions of the relative average costs of the two sets of tasks. The first term on the right hand side represents the costs paid to domestic low skilled workers since (1-J) tasks are performed at home with a_{LX} low skilled labor needed for each task. The second term on the right hand side represents the costs of hiring foreign low skilled workers. Since the costs vary across each task we integrate from 0 to J. The third term is the costs of hiring native high skilled workers.

Substituting equation (1) into equation (2) yields the following zero profit condition:

(3) $P_x = \Omega(J) w a_{LX}(\Omega w/s) + s a_{HX}(\Omega w/s)$

where $\Omega(J) = 1 - J + \left(\int_o^J g(j)dj \right) / g(J)$

Here the dependence of the factor intensities a_{LX} and a_{HX} on the relative average costs is explicitly stated. Since g'(j)>0, by the ordering of tasks, it can be shown that Ω(J)<1 as long as J>0. If J=0 then no tasks are offshored, Ω(J)=1, and the profit maximizing conditions are of the standard form. Therefore, the costs to the firm after offshoring some tasks are less than if they chose to perform all L-tasks domestically. Finally, an increase in the share of low skilled tasks that are offshored (dJ>0) leads to a decrease in firms' costs (dΩ(J)<0).[4] Offshoring leads to a reduction in firms' costs through the extensive margin because more tasks are offshored and the intensive margin because it is now cheaper to offshore the tasks already produced abroad.

Since offshoring tasks is a deliberate action on the part of the firm, it is not surprising that offshoring plays a prominent role in the profit maximizing condition in

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[4] $\frac{\partial \Omega}{\partial J} = -\frac{\int_0^J g(j)dj}{g(J)^2} g'(J)$ which is negative when J>0.

Equation (3). On the other the hand, immigration is determined by factors largely exogenous to the firm. Assuming that the domestic firms cannot discriminate and must pay domestic and immigrant workers a similar wage, an increase in immigration does not directly reduce the firms' costs. Thus immigration does not affect the profit maximizing decision facing the firm in Equation (3). However, immigration will have important implications for the supply of low skilled labor in the home state.

Each firm performs (1-J) L-tasks at home and all H-tasks at home. Domestic firms hire native low skilled workers and low skilled immigrants to perform the (1-J) L-tasks. Thus the market clearing conditions are:

(4) $(1-J)a_{LX}(\Omega w/s)X = (1+I)L$

and

(5) $a_{HX}(\Omega w/s)X = H$

where $I \in (0,1)$ is the ratio of immigrant low skilled workers to native low skilled workers. Thus the right hand side of (4) represents the domestic low skilled labor supply which consists of native and immigrant workers. As the costs of immigration fall, the share of immigrants will increase (dI>0).

Using the zero profit condition and the market clearing conditions it is possible to examine how a decrease in the cost of offshoring or a decrease in the cost of immigration affect domestic wages. Total differentiating equation (3), assuming that P_X is the numeraire, yields:[5]

(6) $\theta_{LX}(\hat{w}+\hat{\Omega})+(1-\theta_{LX})\hat{s}=0$

[5] See Appendix for derivations.

where θ_{LX} is low skilled labor's share of total costs in industry X. Differentiating the ratio of (4) to (5) gives:

$$(7)\quad \sigma_X(\hat{s}-\hat{w}-\hat{\Omega}) = \frac{dJ}{(1-J)} + \frac{dI}{(1+I)}$$

where σ_X is the elasticity of substitution between the set of L-tasks and the set of H-tasks. Combining (6) and (7) yields the change in the wage of low skilled workers as a function of changes in offshoring and immigration:

$$(8)\quad \hat{w} = -\hat{\Omega} - \frac{1-\theta_{LX}}{\sigma_X}\frac{dJ}{(1-J)} - \frac{1-\theta_{LX}}{\sigma_{LX}}\frac{dI}{(1+I)}$$

The first term on the right hand side of (8) is the productivity effect. As the cost of offshoring decreases ($d\beta<0$), more tasks are offshored ($dJ>0$), and thus the cost of performing the L-tasks declines ($\hat{\Omega}<0$). Lower costs are equivalent to higher productivity for low skilled labor. Higher productivity increases the demand for low skilled workers and raises their wages. The second term on the right hand side of (8) is the labor supply effect of offshoring. As the cost of offshoring decreases, more L-tasks are offshored ($dJ>0$), and thus some low skilled workers become unemployed. Due to excess supply, the wage of low skilled workers declines. Together the first and second terms of equation (8) represent the impact of offshoring on the wages of low skilled workers in this model. The third term on the right hand side of (8) is the labor supply effect of immigration. As the cost of immigration decreases, more foreign workers migrate to the home country ($dI>0$). Due to an excess supply, the wage of low skilled workers declines.

The impact of offshoring on domestic low skilled wages hinges on the relative magnitudes of the productivity and labor supply effects. If the productivity effect exceeds the labor supply effect then offshoring will increase the wages of low skilled domestic workers. Immigration, on the other hand, unambiguously decreases the wages of low skilled labor in this model. A reduction in the cost of immigration leads to a reduction in low skilled wages due to the labor supply effect. Immigration does not generate a productivity effect because the benefits of country wage differences are captured by the immigrants rather than the domestic firm. Unlike offshoring, immigration does not generate any direct costs savings for domestic firms since they pay immigrants and native workers the same market wage. The fact that offshoring and immigration both generate a labor supply effect but only offshoring generates a productivity effect presents a unique opportunity to test for empirical evidence of the productivity effect.

4. Estimation Strategy:

The predictions of this model will be tested using a state-industry-year dataset. Each state-industry observation will represent a small economy that takes foreign wages and relative prices as given. The impact of offshoring and immigration on different wage deciles of native workers will be estimated in the following manner:

(9) $W_{sitd} = \alpha_0 + \alpha_1 Off_{sit} + \alpha_2 \operatorname{Im} g_{sit} + \alpha_3{}' X_{sit} + b_s + c_i + d_t + \varepsilon_{sitd}$

where s indexes states, i indexes industries, t indexes years, and d indexes the 9 different wages deciles; W is the wage of native workers; Off is offshoring; Img is immigration; X is a vector of control variables; b is a full set of state dummy variables that control for state fixed effects that are common across industries and years; c is a full set of industry dummy variables that controls for any industry fixed effects that are constant over state and years; and d is a full set of year dummy variables that captures any yearly fixed effects common to states and industries. Based on the models predictions in (8) we expect that for low native wage deciles $\alpha_1>0$, if the productivity effect exceeds the labor supply effect, and $\alpha_2<0$.

Estimating (9) will provide insight into the overall impact of offshoring and immigration on different wage deciles of native workers. However, it would be appealing to decompose the offshoring and immigration variables into components that more closely correspond to the type of offshoring (L-tasks) and the type of immigration (L-workers) that are envisioned in the model. Grouping offshoring and immigration according to the income level of the foreign country may provide a suitable proxy for this type of decomposition. Thus the following equation will be estimated:

$$(10)\quad \begin{aligned} W_{sitd} &= \beta_0 + \beta_1 Off\_lessdev_{sit} + \beta_2 Off\_dev_{sit} + \beta_3 \operatorname{Im}g\_lessdev_{sit} + \beta_4 \operatorname{Im}g\_dev_{sit} \\ &+ \beta_5' X_{sit} + b_s + c_i + d_t + \varepsilon_{sitd} \end{aligned}$$

The motivation for offshoring and thus the implications for domestic wages depend in part on the income level of the foreign host country. Offshoring to less developed countries takes advantage of low foreign wages by relocating particular low skilled tasks abroad. This is the type of offshoring that is envisioned in the model and entails different tasks being performed by domestic and foreign low skilled workers. Since native and foreign workers are complements in the production process, it is more likely that the productivity effect exceeds the labor supply effect, and thus native wages will increase ($\beta_1 > 0$). Offshoring to other developed countries tends to be motivated by the desire to access foreign markets by replicating the production process abroad rather than exporting. While this is not the type of offshoring that is discussed in the model, the concepts of productivity and labor supply effects are still relevant. This type of offshoring consists of similar tasks being performed by domestic and foreign workers. Since foreign workers are substituting for domestic workers, the labor supply effect likely exceeds the productivity effect and the wages of native workers will decrease ($\beta_2 < 0$).

Borjas (1995) showed that the skill level of immigrants is strongly correlated with the income level of the foreign source country. If immigrants from less developed countries are relatively less skilled, then they likely compete with less skilled native workers for jobs. Thus, according to the model, immigration from less developed countries generates a labor supply effect which decreases the wages of low skilled native workers ($\beta_3 < 0$). On the other hand, if immigrants from developed countries are relatively more skilled and have knowledge and expertise that is not readily available in the domestic labor market, then it is likely that these immigrants will complement the native labor force and thus raise domestic wages ($\beta_4 > 0$).

3. Data:

The data set utilized in this analysis spans the 48 contiguous U.S. states, 14 NAICS industries, and 6 years (2000-2005). Census data on employed individuals who earn a positive income, are not in school, and are between the ages of 18 and 65 is obtained from the Integrated Public Use Microdata Series (IPUMS). From these 2.9 million individual observations, native wage deciles are constructed for each state-industry-year observation. Immigration is calculated as the share of the labor force that is foreign born by state, industry, and year. In addition, the share of the native labor force that is male, the share of the native labor force that is of a particular race and marital status, and the average age and average educational attainment of native workers are calculated for each state, industry, and year.[6]

Data on offshoring, defined as the number of employees at majority owned foreign affiliates of U.S. firms, is obtained from the U.S. Bureau of Economic Analysis (BEA).[7] The BEA provides foreign affiliate employment data by the industry of the foreign affiliate and the foreign host country. Foreign affiliate employment data is aggregated over all countries, less developed countries, and developed countries by industry and year. Unfortunately, offshoring data is not available by state, thus foreign affiliate employment is distributed across states based on the share of state GDP to national GDP in that industry. Finally, the share of foreign affiliate employment to total employment, including both domestic and foreign employment, is calculated by state, industry and year. Thus, total offshoring is constructed in the following manner:

$$offshoring_{sit} = \frac{\left[\frac{GDP_{sit}}{\sum_s GDP_{sit}} * Foreign\_Affiliate\_Empl_{it}\right]}{Domestic\_Empl_{sit} + \left[\frac{GDP_{sit}}{\sum_s GDP_{sit}} * Foreign\_Affiliate\_Empl_{it}\right]} * 100$$

where s indexes states, i indicates industries, and t references years. While it is not ideal to assume that each state offshores jobs according to its share of total GDP in that particular industry, this represents the best proxy given the available data. Offshoring to developed and less developed countries was constructed in an analogous manner. Inshoring, defined as the number of employees of majority owned U.S. affiliates of

[6] See Appendix for additional details.
[7] While the model did not draw a distinction between in-house and arms-length offshoring, the empirical section of this paper will focus on the offshoring of tasks to foreign affiliates.

foreign firms, was also constructed in the same manner. This will be an important control in the regressions that follow. Unfortunately, due to data constraints it is not possible to reliably break inshoring down into developed and less developed country groups.

This dataset has a number of appealing features. First, by using state level data we gain a substantial amount of variation compared to a national level analysis. In addition, state level data mitigates many of the mobility concerns associated with a city or county level study. Biases related to natives and immigrants choosing a location based on local wages are less likely to arise in a state level analysis, since residents are less likely to move across states and those that do often choose a state of residence for non economic reasons such as family, weather, or distance from home country.[8] Thus, states more closely resemble a closed labor market while still offering a substantial amount of variation. Second, by incorporating 14 industries we gain an additional source of variation and control for the compositional mix of industries within states. It is possible that an influx of immigrants or an increase in offshoring would lead to a change in industry composition within a state. Specifically, the Heckscher-Ohlin model predicts that a labor supply shock can be fully absorbed through a change in industry mix without any change in factor returns.[9] By using a state, industry, and year unit of observation, this analysis controls for the changing compositional mix of industries within states.

Tables 1, 2, and 3 show the average median wage, average offshoring, and average immigration by state, industry and year respectively. These tables illustrate the substantial variation in wages, offshoring and immigration that exists across states,

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[8] Bartel (1989) and Cragg and Kahn (1997).
[9] This is one explanation for why the Mariel boat lift did not change wages in Miami (Lewis 2004).

industries, and years. In Table 1, the median wage varies by state from $25,442 (Mississippi) to $41,547 (New Jersey), immigration fluctuates from 1.51% (West Virginia) to 33.65% (California), and offshoring varies from 3.95% (Montana) to 6.43% (Louisiana).[10] There is similar variation across industries (Table 2), with the median wage fluctuating from $14,781 (Accommodations and Food Services) to $47,652 (Utilities), immigration ranging from 3.92% (Utilities) to 16.20% (Accommodations and Food Services), and offshoring varying from .06% (Health Care and Social Assistance) to 20.48% (Manufacturing). Finally, in Table 3 we see that median wages, offshoring, and immigration have all increased from 2000 to 2005. The substantial variation evident in Tables 1 and 2 indicate that there is little wage convergence across states and industries and supports the assertion that a state, industry labor market is reasonably closed.

5. Results:

5.1 Immigration and Offshoring:

Table 4 reports the results from estimating equation (9) with the nine different wage deciles as dependent variables. All regressions include a full set of state, industry, and year dummy variables (although the coefficients are not reported), and have robust standard errors in brackets. The results suggest that offshoring increases and immigration decreases the wages of most native workers. Specifically, a one percentage point increase in the share of foreign affiliate employment increases the median wage of native workers $219, while a one percentage point increase in the share of foreign born workers decreases the median wage by $74. While the coefficients on the offshoring and

[10] Offshoring varies the least by state which may be in part due to the way the offshoring variable is constructed. This lack of variation would bias my results away from finding a significant relationship between offshoring and wages.

immigration variables are similar in magnitude across most of the wage deciles it is important to remember that this represents a greater percent change for lower earners. For instance, since the average wage of the 80th decile worker is $54,093 and the average wage of the 20th decile worker is $17,530, then a one percentage point increase in offshoring increases the wages of the 80th decile worker by 0.463% (250.4/54,093) and increase the wages of the 20th decile worker 0.863% (151.4/17,530). A one percentage point increase in immigration decreases the wages of the 80th decile workers by 0.155% (-83.6/54,093) and decreases the wages of the 20th decile workers by 0.337% (-59.1/17,530). As a percentage of their average wage, offshoring and immigration have a larger effect on lower earners. Not surprisingly inshoring, or the hiring of domestic workers by foreign firms, increases the wages of all types of native workers. The control variables are significant, especially age, education, male, and Asian, however the coefficients on offshoring and immigration are similar if these controls are omitted. Finally, note that the R^2 in Table 4 range from 0.68 to 0.9, indicating that a vast majority of the variation in wages is explained in these regressions.

The results reported in Table 4 are consistent with the predictions of the model. The positive coefficients on the offshoring variable suggest that the productivity effect exceeds the labor supply effect for low skilled workers. Also as expected, the coefficients on the immigration variable are negative for low skilled workers due to the labor supply effect. These contrasting results highlight the importance of the productivity effect. Both offshoring and immigration generate a labor supply effect which displaces native workers and thus depresses domestic wages. However, offshoring also generates a cost reducing or productivity enhancing effect that more than compensates for the labor supply effect while immigration does not. In contrast to offshoring, the rents associated with immigration are captured by the immigrants themselves rather than the domestic firm.

It is in principle possible that offshoring and immigration may respond to changes in domestic wages. However, it is unlikely that this type of endogeneity is biasing the results in Table 4. First, based on its construction, it is doubtful that offshoring could respond to the domestic wage profile in a particular state, industry, and year. The foreign affiliate employment data is gathered at the national industry level and then distributed across states using state GDP shares. It is unlikely that local wages in a state could substantially influence national offshoring in a particular industry. Second, local wages are unlikely to be a driving force in the state location decision of immigrants. Non economic factors such as family connections, distance from home country, and weather seem to be more important determinants of immigrant location decisions.[11] If immigrants did choose states and industries that paid a relatively high wage, there would be a spurious positive correlation between immigration and wages. The fact that the coefficients on immigration in Table 4 are significantly negative implies that either this positive bias is negligible or the impact of immigration on domestic wages is even more negative than these estimates suggest. Although it is unlikely that endogeneity poses a serious problem in these regressions, a further sensitivity analysis is pursued in Section 6 in which the sample is restricted to those individuals who have not moved across states in the past year.

[11] Bartel (1989) and Cragg and Kahn (1997).

5.2 Income Level of Foreign Country:

While Table 4 provides preliminary evidence on the relationship between offshoring, immigration and domestic wages, it is useful to decompose offshoring and immigration according to the income level of the foreign country. Grouping offshored jobs and immigrants by less developed and more developed countries may be an effective way to identify the components of offshoring and immigration that are more similar to those considered in the model. Table 5 shows that the relationship between offshoring, immigration and domestic wages is sensitive to the income level of the foreign host and source countries. Given that the average median wage is $32,346, then a one percentage point increase in offshoring to less developed countries increases the median wage 1.75%, a one percentage point increase in offshoring to developed countries decreases the median wage 0.868%, a one percentage point increase in immigrants from less developed countries decrease the median wage 0.279%, and a one percentage point increase in immigrants from developed countries increases the median wage 0.762%. The results in Table 5 differ in two important dimensions. First, the components of offshoring and the components of immigration work in opposite directions, with one component increasing and the other decreasing the wages of low skilled native workers in particular.[12] Second, the impact of the income groupings on native wages is different for offshoring and immigration. For instance, native workers benefit from offshoring to less developed countries but they see their wages decrease due to immigration from less developed countries. These contrasting results highlight the importance of controlling for the

[12] These contrasting results indicate that the measures of offshoring and immigration, although not perfect, are capturing important variation.

income level of the foreign country and are consistent with the intuition and predictions discussed earlier.

The model from Section 2 considers the offshoring of low skilled tasks and the immigration of low skilled workers. Decomposing offshoring and immigration according to the income level of the foreign country proves to be an adequate proxy for identifying these components of interest. Firms that offshore to less developed countries are relocating low skilled tasks abroad to take advantage of low foreign factor prices. This division of tasks allows domestic unskilled workers to focus on the tasks that they are relatively better at, reduces firms' costs, and causes domestic firms to become more productive and profitable. Thus the productivity effect exceeds the labor supply effect and the wages of low skilled native workers increase. As expected, the results in Table 5 confirm that offshoring to less developed countries leads to an increase in the wages of low skilled domestic workers.[13] Immigrants from less developed countries are generally less skilled. Thus according to the model low skilled immigrants from less developed countries will depress the wages of low skilled native workers due to the labor supply effect. The results in Table 5 confirm this prediction. These results highlight the importance of the productivity effect. When present the productivity effect is strong enough to compensate for the negative labor supply effect, leading to positive coefficients on the offshoring variable. However, in its absence the coefficients on immigration are negative due to the labor supply effect.

[13] Another potential explanation is that offshoring to less developed countries causes the least skilled, lowest wage decile workers to become unemployed. As these low skilled workers drop out of the labor force, all the wage deciles of the remaining employed workers would increase. Each wage decile would now capture more skilled workers with higher wages. The fact that offshoring to less developed countries does not lead to an increase in the highest wage deciles in Table 5 refutes this hypothesis.

While not the focal point of the model presented in Section 2, offshoring to developed countries and immigration from developed countries offer an important counterfactual to the components of interest. Offshoring to other developed countries is motivated by the desire to access foreign markets and limit trade costs associated with exporting. This results in the production process being replicated in the foreign country and implies that domestic and foreign workers are substitutes. Thus the labor supply effect exceeds the productivity effect and domestic wages decrease. In Table 5 we see that offshoring to developed countries decreases the wages of low earners who are likely the ones involved in the production process. On the other hand, the wages of all types of workers increases as the share of immigrants from developed countries increases. This suggests that these immigrants bring with them knowledge or skills that are not readily available in the native work force. By complementing native workers, immigrants from developed countries put upward pressure on domestic wages. This positive wage effect is sufficiently large to compensate for the downward pressure that the labor supply effect generates. Overall the results in Table 5 emphasize the importance of controlling for the income of the foreign country, they are consistent with the models predictions, and they provide empirical support for the productivity effect.

6. Sensitivity Analysis:

While the results reported in Table 5 represent the baseline results from the preferred specification, there are a number of important extensions and alternate specifications that will be pursued in this section:

6.1 Globalization:

The offshoring, immigration, and inshoring variables are summed into one independent variable called "Globalization." In Table 6 we see that globalization leads to an increase in wages of all types of native workers, thus contradicting many of the fears of American workers. A protectionist policy that limited offshoring, immigration, and inshoring would unambiguously decrease the wages of native workers.

6.2 Weights:

It may be informative to place greater weight on larger state, industry observations. Thus, the baseline regressions are re-estimated using GDP weights (Table 7), employment weights (Table 8) and the share of yearly census observations in that cell as weights (Table 9).[14] There are substantial differences across these three weighting schemes. For instance, the Real Estate industry is particularly large according to GDP, while the Retail Trade industry is large measured by employment, and Manufacturing is large according to the number of census observations. Given these differences, the results are surprisingly consistent across these different weighting schemes and all are similar to the unweighted results reported in Table 5. Offshoring to less developed countries increases the wages of low earners while offshoring to developed countries decreases the wages of low earners. Immigration from less developed countries decreases the wages of all types of workers while immigration from developed countries increases the wages of all types of workers.

[14] There is little correlation between GDP and year (0.05) and employment and year (0.01) which means that the later years are not getting unfairly weighted more than earlier years.

6.3 Construction of the Offshoring variables:

It is unlikely that state wages could substantially influence national offshoring in a particular industry. However, it is possible that local wages are correlated with local GDP, which is used to distribute foreign affiliate employment across states. To address this potential endogeneity concern, the 1999 state GDP shares are used to distribute industry offshoring for all years. While eliminating the possibility of endogeneity, this method does not allow the allocation of national industry offshoring across states to reflect changes in the state's share of that industry over time. Keeping this drawback in mind, the results using the 1999 state GDP share are reported in Table 10. Overall the coefficients on the offshoring and immigration variables are consistent in sign, magnitude and significance level to those reported in the baseline results.

6.4 Total Income:

Table 11 reports results using native total income deciles as the dependent variable rather than native wage and salary income. Total income includes wages and other types of income, such as business income, interest, dividends, rental income, social security, welfare, and retirement income. If offshoring and immigration lead to an increase in the return to capital or an increase in profits, this would be captured by total income but not by wage and salary income. Of the 2.9 million observations included in the sample, wage income does not equal total income for 29 % of the individuals. Despite these differences, the results in Table 11 indicate that offshoring and immigration have a similar impact on native wages and on native income. Consistent with the baseline regressions in Table 5, offshoring to less developed countries increases income of low earners while offshoring to developed countries decreases the income of low earners. Immigration from less developed countries decreases the income of native workers while immigration from developed countries increases the income of native workers.

6.5 State mobility:

While it is more common for people to migrate across cities and counties in response to local wages, it is possible that some residents relocate across states in response to local wages. Migration across states in response to local wages could bias the immigration and demographic coefficients reported in Table 5. To address these concerns the sample is limited to those individuals who lived and worked in the same state for the past year.[15] Thus, residents that moved across states for any reason, including those that were responding to state wage differences, are excluded from the sample. Unfortunately, the 2000 1% census sample does not include a question about where the resident lived a year ago, thus the year 2000 is not included in this analysis. Of the remaining 2.1 million individuals, 86% of them lived and worked in the same state the previous year. Table 12 reports the results using this restricted sample. The coefficients are similar in sign, magnitude and significance level to those reported in Table 5 using the unrestricted sample. This suggests that either cross state migration is not significantly driven by local wages or the number of people that are migrating across

[15] Technically these individuals worked and lived in the same state in the current year and lived in the same state the previous year (it is assumed that they also worked in the same state the previous year). It would be appealing to use a longer time frame (i.e. individuals that lived and worked in the same state for the past five years) but unfortunately the ACS does not collect this information.

states is not large enough to significantly alter the fundamental relationship between offshoring, immigration, and native wages

Together the extensions and various specifications pursued in this section support the findings reported in the baseline regressions in Table 5. Offshoring to less developed countries increases the wages of low earners while offshoring to developed countries decreases the wages of low earners. Immigration from less developed countries decreases the wages of native workers while immigration from developed countries increases the wages of native workers. Through a variety of different specifications, samples, and definitions these results remain largely the same.

7. Conclusion:

Americans have become increasingly concerned about the impact of offshoring and immigration on domestic wages. Despite extensive research, which generally focuses on one or the other of these phenomena, the available evidence on the link between offshoring, immigration, and domestic wages remains ambiguous. This paper presents a simple model that identifies the ways in which offshoring and immigration can affect domestic wages. Both offshoring and immigration generate a labor supply effect that adversely affects domestic workers, while only offshoring generates a productivity effect that benefits domestic workers. Thus comparing the impact of offshoring and immigration on domestic wages offers a unique opportunity to test for the productivity effect.

Consistent with the predictions of the model, the results suggest that offshoring increases and immigration decreases the wages of low skilled native workers. Offshoring and immigration are then grouped according to the income level of the foreign country, which focuses attention on the components of offshoring and immigration that are most similar to those envisioned in the model. Offshoring to less developed countries increases and immigration from less developed countries decreases the wages of low skilled native workers, which offers empirical support for the productivity effect identified in the model. In contrast, offshoring to developed countries decreases and immigration from developed countries increases the wages of low skilled native workers. These results suggest that the income level of the foreign host country is a useful mechanism for distinguishing between different motivations for offshoring and different skill levels of immigrants and that this decomposition has important implications for the domestic wage distribution.

On the whole this paper shows that globalization, defined as the sum of offshoring, immigration and inshoring, increases the wages of all types of workers, thus contradicting many of the fears of American workers. However, after controlling for the income level of the foreign country it is evident that certain components of offshoring and immigration do depress the wages of particular types of domestic workers. These contrasting results are consistent with the predictions of the model and they provide empirical support for the productivity effect. Policy makers, whose goal is to increase the wages of native workers, should encourage offshoring to less developed countries, immigration from developed countries, and inshoring. Obviously the impact of offshoring and immigration on other dimensions of the home and foreign economy is important and warrants further research.

Appendix:

Deriving Equation (7):

Total differentiating equation (4), assuming that P_x is the numeraire, yields:

$$0 = d\Omega w a_{LX} + dw\Omega a_{LX} + da_{LX}\Omega w + ds a_{HX} + da_{HX} s$$

or:

$$0 = \hat{\Omega}\theta_{LX} + \hat{w}\theta_{LX} + \hat{a}_{LX}\theta_{LX} + \hat{s}\theta_{HX} + \hat{a}_{HX}\theta_{HX}$$

where θ_{LX} and θ_{LX} are the shares of low skilled and high skilled labor to total costs (and $\theta_{LX} + \theta_{HX} = 1$). Since profit maximizing firms have minimized costs, $\hat{a} = 0$ by the envelope theorem. Thus:

(7) $0 = \theta_{LX}(\hat{\Omega} + \hat{w}) + (1 - \theta_{LX})\hat{s}$

Deriving Equation (8):

Total differentiating the ratio of (5) to (6) gives:

$$\frac{da_{LX}}{a_{HX}}\left(\frac{dw\Omega}{s} + \frac{d\Omega w}{s} - \frac{dsw\Omega}{s^2}\right) - \frac{a_{LX}\, da_{HX}}{a_{HX}^2}\left(\frac{dw\Omega}{s} + \frac{d\Omega w}{s} - \frac{dsw\Omega}{s^2}\right) = \frac{dL(1+I)}{H(1-J)} + \frac{dIL}{H(1-J)} - \frac{L(1+I)dH}{H^2(1-J)} + \frac{L(1+I)dJ}{H(1-J)^2}$$

or

$$\frac{a_{LX}}{a_{HX}}(\hat{a}_{LX} - \hat{a}_{HX})\left(\frac{w\Omega}{s}\right)\left(\hat{w} + \hat{\Omega} - \hat{s}\right) = \frac{L(1+I)}{H(1-J)}\left(\hat{L} + \frac{dI}{(1+I)} - \hat{H} + \frac{dJ}{(1-J)}\right)$$

The first terms on each side cancel following from the ratio of (5) to (6) and $\hat{L} = \hat{H} = 0$ given that the native factor supplies are fixed. Thus:

$$(\hat{a}_{HX} - \hat{a}_{LX})\left(\frac{w\Omega}{s}\right)\left(\hat{s} - \hat{w} - \hat{\Omega}\right) = \frac{dI}{(1+I)} + \frac{dJ}{(1-J)}$$

or:

(8) $\sigma_X\left(\hat{s} - \hat{w} - \hat{\Omega}\right) = \dfrac{dI}{(1+I)} + \dfrac{dJ}{(1-J)}$

where the elasticity of substitution, following Jones (1965), is defined as:

$$\sigma_X = \frac{d\left(\frac{a_{HX}}{a_{LX}}\right)/\left(\frac{a_{HX}}{a_{LX}}\right)}{d\left(\frac{w\Omega}{s}\right)/\left(\frac{w\Omega}{s}\right)} = \frac{(\hat{a}_{HX} - \hat{a}_{LX})(w\Omega/s)(\hat{w} + \hat{\Omega} - \hat{s})}{(\hat{w} + \hat{\Omega} - \hat{s})} = (\hat{a}_{HX} - \hat{a}_{LX})(w\Omega/s)$$

Deriving Equation (9):

Rearranging equation (8) as follows:

$$\hat{s} = \frac{dJ}{\sigma_X (1-J)} + \frac{dI}{\sigma_X (1+I)} + \hat{w} + \hat{\Omega}$$

and plugging this into equation (7) yields:

$$\theta_{LX} (\hat{w} + \hat{\Omega}) + (1-\theta_{LX}) \left[\frac{dJ}{\sigma_X (1-J)} + \frac{dI}{\sigma_X (1+I)} + \hat{w} + \hat{\Omega} \right] = 0$$

or:

$$(9) \quad \hat{w} = -\hat{\Omega} - \frac{1-\theta_{LX}}{\sigma_X} \frac{dJ}{(1-J)} - \frac{1-\theta_{LX}}{\sigma_{LX}} \frac{dI}{(1+I)}$$

Data Sources: Individual level data was obtained from the 2000 1% Census sample and the 2001-2005 American Community Survey (ACS) via IPUMS. The 2000 1% sample was preferable to the 2000 ACS because it was approximately seven times the size (the 2000 sample was by far the smallest ACS). The variables (and their IPUMS code) used in this analysis were state of employment (PWSTATE2), industry of employment (INDNAICS), year (YEAR), wage and salary income (INCWAGE), total personal income (INCTOT), birthplace (BPLD), employment status (EMPSTAT), school attendance (SCHOOL), age (AGE), gender (SEX), marital status (MARST), race (RACED), Hispanic origin (HISPAND), educational attainment (EDUC99) which does not directly correspond to years of schooling, and state or country of residence 1 year ago (MIGPLAC1).

Offshoring data was obtained from the "U.S. Direct Investment Abroad" tables produced by the BEA. Inshoring data was obtained from the "Foreign Direct Investment in the U.S." tables also produced by the BEA. GDP and domestic employment by state, industry and year was obtained from the "Regional Economic Accounts" tables provided by the BEA.

Sample: The sample was restricted to the contiguous 48 states because Alaska, Hawaii, and Washington D.C. were substantial outliers in many dimensions and they had limited census observations for particular industries. Of the 20 2-Digit NAICS industries, the BEA does not provide foreign affiliate employment data for "Education Services", "Arts, Entertainment and Recreation", "Other Services", and "Public Administration". Of the remaining 16 industries, "Agriculture, Forestry, Fishing, and Hunting" and "Mining" were combined and "Professional, Scientific and Technical Services" and "Management of Companies and Enterprises" were combined due to a lack of census observations by state in these industries. Thus the analysis includes 14 NAICS industries. Finally, available Census and BEA data restricts the sample to the years 2000-2005.

Definition of Developed: The countries with the highest 2006 GDP per capital according to the World Development Indicators database (World Bank, April 11, 2008) were Canada, Denmark, Finland, Iceland, Norway, Sweden, UK, Ireland, Belgium, France, Luxembourg, Netherlands, Switzerland, Italy, Austria, Germany, Japan, and Australia (not including San Marino or the U.S.). Immigrants that were born in these 18 countries were assigned to the Developed group, while those immigrants born in the remaining countries were assigned to the Less Developed group. Offshoring to developed countries includes foreign affiliate employment in Europe, Canada, Australia, and Japan, while offshoring to less developed countries consists of the remaining foreign affiliate employment. Unfortunately data limitations do not allow "Europe" to be broken into individual countries that correspond to those included in the immigrant definition. However, of the total foreign affiliate employment in Europe, 85% is going to the 14 European countries included in the immigrant Developed group.

Missing Values: Due to confidentiality concerns the BEA withholds some industry, country specific foreign affiliate employment numbers. There are no missing values for total foreign affiliate employment but when constructing offshoring to developed and less developed countries this issue needs to be addressed. Data for these 18 missing values are filled with the industry, country averages across years. The majority of the time this average falls within the employment range indicated by the BEA for that employment cell, when it does not I replace the missing value with the midpoint of this range instead. It is unlikely that this significantly alters the results since country data is summed to create developed and less developed groups and it is rare that there are multiple countries missing the same industry, year observation. Domestic employment data by state, industry and year also has 18 missing observations over this sample period. These missing values are filled with state and industry averages across years. The results are not sensitive to whether these values are left missing or are replaced with the industry state averages.

REFERENCES:

Bartel, Ann P. (1989), "Where Do the New U.S. Immigrants Live?" Journal of Labor Economics, Vol. 7, No. 4, pp. 371-391.

Borjas, George (1995), "Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?" *Journal of Labor Economics*, vol. 13, pp. 201-45.

Borjas, George (2003), "The Labor Demand Curve is Downward Sloping: Reexamining the Impacts of Immigration on the Labor Market", *Quarterly Journal of Economics*, vol. 118 (November), pp. 1335-74.

Card, David (1990), "The Impact of the Mariel Boatlift on the Miami Labor Market," *Industrial and Labor Relations Review*, vol. 43 (January), pp. 245-257.

Card, David (2005), "Is the New Immigration Really so Bad?" *The Economic Journal*, vol. 115 (November), pp. F300-F323.

Carr, David L., James R. Markusen, and Keith E. Maskus (2001), "Estimating the Knowledge-Capital Model of the Multinational Enterprise," *The American Economic Review*, vol. 91 no. 3 (June), pp 693-708.

Cragg, Michael and Matthew Kahn (1997), "New Estimates of Climate Demand: Evidence from Location Choice," Journal of Urban Economics, vol. 42, 261-284.

Feenstra, Robert C. and Gordon H. Hanson (1999), "The Impact of Outsourcing and High-Technology Capital on Wages: Estimates for the United States, 1979-1990," *The Quarterly Journal of Economics*, August.

Feenstra, Robert C. (2007), "Globalization and Its Impact on Labor," Global Economy Lecture, Vienna Institute for International Economic Studies, February 8, 2007.

Grossman, Gene M. and Esteban Rossi-Hansberg (2008), "Trading Tasks: A Simple Theory of Offshoring," NBER Working Paper #W12721 (forthcoming in AER), January 22, 2008.

Harrison, Ann E. and Margaret S. McMillan (2006), "Outsourcing Jobs? Multinationals and US Employment," NBER Working Paper #12372, July 2006.

Jones, Ronald W. (2005), "Immigration vs. Outsourcing: Effects on Labor Markets," *International Review of Economics and Finance*, pp. 105-114.

Lewis, Ethan G. (2004), "How did the Miami Labor Market Absorb the Mariel Immigrants?" Working Paper 04-3, Federal Reserve Bank of Philadelphia.

Ruggles, Steven, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. *Integrated Public Use Microdata Series: Version 4.0* [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], 2008.

Slaughter, Matthew J. (2000), "Production Transfer within Multinational Enterprises and American Wages," *Journal of International Economics* 50, 449-472.

TABLE 1

STATE AVERAGES

State	Median Wage	Immigration	Offshoring
Alabama	$29,317	3.89	4.54
Arizona	$34,510	17.43	5.32
Arkansas	$26,615	4.44	4.32
California	$40,340	33.65	5.73
Colorado	$36,220	10.63	5.48
Connecticut	$40,422	15.77	5.97
Delaware	$35,365	9.09	5.98
Florida	$32,173	23.25	4.94
Georgia	$33,604	10.71	5.37
Idaho	$26,921	7.40	4.32
Illinois	$36,841	13.70	5.54
Indiana	$30,328	4.07	4.86
Iowa	$27,575	3.14	4.50
Kansas	$29,371	4.42	4.63
Kentucky	$27,674	2.99	4.70
Louisiana	$29,184	3.71	6.43
Maine	$28,730	3.97	4.39
Maryland	$36,572	11.39	5.58
Massachusetts	$40,664	14.68	5.65
Michigan	$33,325	6.11	5.31
Minnesota	$34,203	5.43	4.75
Mississippi	$25,442	2.45	4.23
Missouri	$30,920	3.94	4.82
Montana	$25,895	2.44	3.95
Nebraska	$28,639	4.56	4.87
Nevada	$36,347	16.76	5.57
New Hampshire	$34,269	5.65	5.17
New Jersey	$41,547	21.80	6.28
New Mexico	$29,106	10.11	5.82
New York	$38,180	22.76	6.09
North Carolina	$31,356	8.59	5.30
North Dakota	$27,254	2.61	4.06
Ohio	$31,679	3.89	4.98
Oklahoma	$28,846	5.98	4.57
Oregon	$31,982	10.39	4.94
Pennsylvania	$32,142	5.46	5.35
Rhode island	$35,162	11.82	5.34
South Carolina	$29,745	5.84	4.69
South Dakota	$26,322	2.18	4.30
Tennessee	$29,385	5.00	4.65
Texas	$34,064	17.32	6.41
Utah	$31,734	8.78	4.52
Vermont	$29,815	3.83	4.43
Virginia	$34,850	11.23	5.72
Washington	$36,416	14.44	5.89
West Virginia	$26,272	1.51	4.85
Wisconsin	$30,877	3.80	4.45
Wyoming	$30,032	3.35	5.78

'Median Wage' reflects the state average of the medain native wage by state, industry and year. 'Immigration' is the state average of the share of the labor force that is foreign born by state, industry, and year. 'Offshoring' is the state average of the share of the labor force that is employed abroad by state, industry, and year.

TABLE 2
INDUSTRY AVERAGES

Industry	Median Wage	Immigration	Offshoring
Agriculture, Forestry, Fishing, Hunting, and Mining	$29,804	12.63	3.56
Utilities	$47,652	3.92	9.02
Construction	$32,603	10.22	0.31
Manufacturing	$36,522	11.42	20.48
Wholesale Trade	$35,040	7.88	10.15
Retail Trade	$23,139	7.41	3.19
Transportation and Warehousing	$36,669	7.09	2.59
Information	$36,980	6.43	6.89
Finance and Insurance	$34,527	6.16	3.14
Real Estate, Rental, and Leasing	$29,091	7.21	0.85
Professional, Scientific, Techinical Services and Management	$41,411	7.99	3.16
Administration and Waste Services	$23,315	11.81	4.55
Health Care and Social Assistance	$27,119	8.00	0.06
Accomodations and Food Services	$14,781	16.20	3.60

'Median Wage' reflects the industry average of the medain native wage by state, industry and year. 'Immigration' is the industry average of the share of the labor force that is foreign born by state, industry, and year. 'Offshoring' is the industry average of the share of the labor force that is employed abroad by state, industry, and year.

TABLE 3
YEAR AVERAGES

Year	Median Wage	Immigration	Offshoring
2000	$28,198	8.22	4.73
2001	$31,048	8.39	5.06
2002	$31,855	8.78	5.17
2003	$32,763	9.16	5.21
2004	$33,704	9.33	5.20
2005	$34,710	9.42	5.29

'Median Wage' reflects the yearly average of the medain native wage by state, industry and year. 'Immigration' is the yearly average of the share of the labor force that is foreign born by state, industry, and year. 'Offshoring' is the yearly average of the share of the labor force that is employed abroad by state, industry, and year.

TABLE 4

IMPACT OF TOTAL OFFSHORING AND TOTAL IMMIGRATION ON WAGE DECILES OF NATIVE WORKERS

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshoring	78.8	151.4*	177.7**	165.6*	219.0**	244.3**	296.8**	250.4*	-567.3
	[60.8]	[63.1]	[65.4]	[73.5]	[81.6]	[85.9]	[93.0]	[111.9]	[303.5]
Immigration	-42.1**	-59.1**	-75.2**	-79.3**	-74.4**	-71.1**	-84.1**	-83.6**	-109
	[12.8]	[13.6]	[15.9]	[17.3]	[18.0]	[20.4]	[22.3]	[30.3]	[80.9]
Inshoring	447.9**	559.4**	623.9**	694.6**	759.0**	871.7**	1,011.5**	1,239.4**	2,656.1**
	[100.0]	[100.0]	[97.4]	[106.0]	[118.2]	[129.2]	[144.9]	[182.8]	[537.2]
Age	181.1**	166.5**	252.8**	278.3**	317.3**	265.2**	412.0**	461.1**	1,188.3**
	[61.6]	[60.9]	[63.0]	[67.7]	[71.4]	[91.3]	[97.8]	[134.0]	[368.4]
Education	1,548.4**	2,692.9**	3,492.7**	4,527.6**	5,382.8**	6,634.0**	7,772.7**	10,603.7**	17,441.9**
	[223.8]	[228.7]	[228.8]	[295.4]	[301.6]	[385.2]	[412.2]	[632.5]	[1,343.3]
Male	85.1**	126.9**	148.3**	177.3**	214.7**	272.8**	317.4**	371.8**	666.7**
	[10.1]	[11.0]	[12.3]	[14.3]	[15.2]	[18.0]	[21.1]	[37.8]	[87.1]
Black	31.7**	44.0**	55.4**	65.9**	63.7**	52.5**	19.7	-17.7	-241.0**
	[11.0]	[11.9]	[13.2]	[15.3]	[16.5]	[18.5]	[21.4]	[27.6]	[78.9]
Asian	156.5	305.9**	286.5*	514.6**	578.1**	740.5**	1,032.3**	1,446.4**	3,826.1**
	[103.4]	[118.0]	[122.2]	[185.3]	[174.3]	[188.7]	[207.9]	[305.9]	[1,025.2]
Hispanic	31.5	41	39.9	20.4	-15.7	-50.2	-72.3	-132.5*	-210.7
	[26.1]	[29.9]	[31.9]	[35.1]	[35.4]	[39.9]	[43.2]	[58.5]	[167.6]
Married	-11.2	-6.8	9.1	39.4	47.2*	57.1*	86.3**	84.0*	-127.9
	[17.0]	[19.3]	[19.4]	[21.5]	[23.0]	[26.8]	[30.6]	[38.5]	[150.9]
Single	-74.0**	-110.8**	-107.7**	-109.6**	-113.1**	-119.6**	-70.7	-30	-52.4
	[22.1]	[24.4]	[26.9]	[27.9]	[29.7]	[33.4]	[39.2]	[51.3]	[179.5]
Constant	-23,115.5**	-32,922.0**	-42,898.9**	-54,985.4**	-64,703.0**	-75,868.4**	-94,052.7**	-121,478.0**	-211,373.7**
	[3,172.9]	[3,477.4]	[3,639.4]	[4,175.2]	[4,523.1]	[5,054.6]	[5,870.3]	[8,514.1]	[21,844.2]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.84	0.88	0.89	0.9	0.9	0.9	0.9	0.86	0.68

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 5

IMPACT OF OFFSHORING AND IMMIGRATION TO LESS DEVELOPED AND DEVELOPED COUNTRIES ON WAGE DECILES OF NATIVE WORKERS

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshroring (Less Dev)	644.8**	632.1**	608.9**	507.8**	564.9**	450.9**	282.9	-61.9	-1,695.7**
	[96.4]	[107.7]	[121.8]	[133.4]	[144.3]	[153.0]	[177.2]	[217.2]	[532.5]
Offshoring (Dev)	-511.3**	-416.7**	-365.6**	-308.2**	-280.8*	-131.1	87	289.9	218
	[107.4]	[107.4]	[106.9]	[113.5]	[123.5]	[130.2]	[147.0]	[180.0]	[439.6]
Immigration (Less Dev)	-56.8**	-71.1**	-86.7**	-91.5**	-90.1**	-90.2**	-107.7**	-116.1**	-155.9
	[11.1]	[12.5]	[15.7]	[17.1]	[17.7]	[20.2]	[22.1]	[29.8]	[85.3]
Immigration (Dev)	250.3*	182.6*	157.2*	169.6*	246.4**	322.8**	408.7**	595.6**	875.5*
	[98.5]	[84.6]	[62.2]	[71.9]	[72.7]	[94.4]	[112.8]	[180.4]	[363.8]
Inshoring	413.3**	562.2**	641.7**	731.0**	796.9**	915.9**	1,087.2**	1,359.5**	2,999.0**
	[95.9]	[95.1]	[91.8]	[101.6]	[113.6]	[126.2]	[143.5]	[184.6]	[560.0]
Age	183.4**	167.8**	253.1**	276.1**	312.3**	254.4**	392.4**	428.9**	1,134.0**
	[55.8]	[56.8]	[60.8]	[65.5]	[69.2]	[89.0]	[95.1]	[129.1]	[373.4]
Education	1,661.4**	2,799.8**	3,595.8**	4,622.8**	5,488.8**	6,728.8**	7,853.8**	10,667.6**	17,434.9**
	[203.1]	[217.8]	[222.9]	[290.8]	[295.8]	[376.6]	[400.4]	[613.5]	[1,321.4]
Male	86.3**	128.6**	150.1**	178.7**	216.0**	273.4**	317.2**	369.7**	658.6**
	[10.0]	[11.0]	[12.3]	[14.4]	[15.2]	[18.1]	[20.9]	[37.5]	[85.9]
Black	33.3**	45.5**	56.9**	67.5**	65.8**	55.0**	22.9	-13.4	-235.5**
	[10.9]	[11.7]	[13.1]	[15.2]	[16.4]	[18.4]	[21.5]	[27.6]	[78.6]
Asian	142.1	300.0*	280.7*	500.3**	551.4**	689.9**	949.5**	1,307.3**	3,567.6**
	[102.6]	[122.0]	[121.9]	[190.9]	[179.1]	[192.4]	[208.9]	[300.1]	[1,000.1]
Hispanic	57.1*	61.8*	59.5	40.6	10	-19.6	-35.6	-83.5	-143.7
	[25.5]	[29.4]	[32.0]	[35.3]	[35.5]	[40.4]	[43.8]	[59.3]	[169.8]
Married	-10.9	-6.6	9.2	39.4	47.1*	56.8*	85.7**	82.8*	-131.7
	[16.1]	[18.5]	[18.7]	[21.0]	[22.4]	[26.3]	[30.0]	[38.2]	[152.6]
Single	-67.2**	-105.2**	-102.9**	-106.3**	-110.0**	-118.8**	-73.6	-38.3	-75.9
	[21.2]	[23.5]	[26.2]	[27.5]	[29.1]	[32.9]	[38.9]	[51.4]	[182.3]
Constant	-25,675.2**	-35,218.1**	-45,009.1**	-56,704.1**	-66,430.5**	-76,913.2**	-94,088.2**	-120,092.4**	-206,252.6**
	[3,135.3]	[3,473.8]	[3,648.1]	[4,181.6]	[4,563.9]	[5,132.0]	[5,934.5]	[8,493.6]	[21,967.2]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.84	0.88	0.89	0.9	0.9	0.9	0.9	0.86	0.69

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 6

IMPACT OF GLOBALIZATION (DEFINED AS OFFSHORING+IMMIGRATION+INSHORING) ON WAGE DECILES OF NATIVE WORKERS.

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Globalization	24.8*	35.1**	33.8*	35.4*	54.2**	71.6**	84.2**	98.2**	75.1
	[11.4]	[12.8]	[14.7]	[16.0]	[17.3]	[19.2]	[21.9]	[27.7]	[66.6]
Age	134.9*	101.3	177.4**	199.0**	228.4**	166.5	295.6**	335.4*	1,061.3**
	[62.4]	[62.3]	[65.5]	[70.9]	[74.9]	[90.6]	[98.8]	[132.4]	[372.5]
Education	1,753.9**	2,980.0**	3,824.3**	4,877.9**	5,774.3**	7,068.9**	8,284.9**	11,162.1**	18,056.7**
	[225.4]	[227.9]	[233.9]	[288.6]	[300.7]	[374.5]	[411.2]	[629.0]	[1,357.8]
Male	99.1**	146.5**	171.0**	201.2**	241.4**	302.5**	352.4**	409.8**	707.3**
	[10.5]	[11.6]	[12.8]	[14.7]	[15.6]	[18.5]	[22.0]	[38.2]	[88.0]
Black	32.7**	45.4**	57.1**	67.7**	65.7**	54.7**	22.3	-15	-239.2**
	[11.7]	[12.9]	[14.4]	[16.5]	[17.9]	[19.9]	[23.1]	[28.8]	[79.5]
Asian	192.7	358.6**	348.0**	578.4**	650.4**	820.3**	1,126.8**	1,545.1**	3,891.3**
	[111.7]	[118.8]	[128.0]	[175.5]	[170.0]	[189.3]	[218.0]	[313.8]	[1,040.3]
Hispanic	-16.4	-27.1	-39.1	-62.5	-108.8**	-153.3**	-194.0**	-263.1**	-332.4*
	[26.2]	[30.4]	[32.9]	[36.8]	[37.3]	[41.9]	[46.2]	[60.1]	[164.3]
Married	-3.6	3.3	20.6	51.8*	60.8*	72.4*	104.2**	104.4*	-96.4
	[18.0]	[20.9]	[21.6]	[23.4]	[25.4]	[29.4]	[33.2]	[40.7]	[148.9]
Single	-75.2**	-113.5**	-111.0**	-112.5**	-116.9**	-123.6**	-75.6	-33.5	-37.3
	[23.6]	[26.8]	[29.4]	[30.5]	[32.7]	[36.6]	[42.8]	[53.4]	[175.2]
Constant	-24,960.8**	-35,376.9**	-45,706.3**	-58,016.7**	-68,032.5**	-79,598.5**	-98,418.6**	-126,476.4**	-219,308.1**
	[3,237.0]	[3,633.0]	[3,854.5]	[4,370.9]	[4,671.1]	[5,248.2]	[6,164.9]	[8,743.0]	[22,013.8]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.83	0.87	0.88	0.89	0.89	0.89	0.89	0.85	0.68

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 7
REGRESSIONS WEIGHTED BY GDP

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshroring (Less Dev)	382.5**	452.3**	447.6**	317.5*	251.8	78.7	-294.9	-1,405.8*	-7,095.2**
	[96.7]	[112.5]	[127.4]	[142.5]	[169.8]	[203.2]	[286.1]	[652.2]	[1,705.2]
Offshoring (Dev)	-337.7**	-379.8**	-406.1**	-301.2*	-240.3	-87.9	220	721.7	2,053.90
	[121.8]	[130.1]	[130.7]	[138.5]	[146.5]	[166.4]	[218.4]	[436.7]	[1,109.1]
Immigration (Less Dev)	-69.2**	-68.5**	-79.6**	-72.3**	-85.4**	-107.3**	-114.9**	-184.8**	-833.6**
	[11.4]	[13.2]	[15.9]	[16.4]	[18.7]	[23.8]	[29.9]	[55.6]	[218.5]
Immigration (Dev)	172.9**	172.1*	259.1**	371.2**	500.6**	669.7**	916.3**	1,705.5**	4,688.4**
	[61.8]	[68.5]	[79.0]	[81.1]	[91.8]	[122.9]	[174.2]	[645.2]	[1,642.9]
Inshoring	187.4	264.7*	373.2**	476.6**	638.8**	770.6**	1,027.8**	1,524.2**	6,590.7**
	[105.1]	[114.3]	[119.1]	[129.0]	[141.0]	[190.6]	[240.8]	[319.0]	[2,285.4]
Age	146.5*	152.7*	185.7*	174.0*	199.7*	136.8	192.3	26.7	467
	[58.1]	[63.4]	[75.7]	[82.2]	[91.8]	[121.2]	[150.8]	[284.1]	[801.8]
Education	2,578.0**	3,837.4**	5,101.4**	6,405.3**	8,138.2**	10,371.8**	13,159.5**	20,431.7**	31,499.3**
	[198.8]	[219.6]	[261.6]	[299.1]	[341.2]	[453.5]	[643.4]	[2,499.2]	[3,766.9]
Male	93.1**	135.8**	172.7**	223.8**	281.7**	332.8**	427.4**	665.5**	1,274.4**
	[12.6]	[12.9]	[14.6]	[18.2]	[22.1]	[32.2]	[47.7]	[195.4]	[342.1]
Black	5.5	25.5	53.4**	62.4**	72.2**	63.4*	43.1	-33.5	-200.4
	[12.7]	[15.0]	[17.7]	[19.4]	[21.3]	[25.6]	[33.8]	[74.8]	[211.9]
Asian	290.7**	835.3**	927.5**	1,084.7**	1,164.8**	1,527.8**	1,768.4**	2,078.3**	6,981.9*
	[84.8]	[113.4]	[134.6]	[157.0]	[196.1]	[230.9]	[323.3]	[580.9]	[3,507.4]
Hispanic	33.4	28.3	46	-20.4	-30.1	-62.2	-102	-131.2	309.7
	[25.0]	[31.2]	[34.0]	[35.3]	[39.6]	[51.1]	[65.2]	[109.8]	[495.4]
Married	-37.3*	-11	15.1	10.5	5.5	25.6	42	42.4	24.9
	[18.6]	[19.7]	[20.9]	[23.3]	[26.6]	[33.4]	[43.1]	[78.1]	[240.6]
Single	-68.5**	-85.4**	-78.5**	-108.4**	-123.4**	-148.6**	-134.1*	-79.4	-180
	[24.1]	[26.9]	[29.7]	[32.9]	[37.1]	[45.2]	[61.3]	[125.2]	[388.7]
Constant	-30,583.9**	-44,197.3**	-59,313.9**	-71,337.5**	-89,574.6**	-109,717.5**	-142,800.6**	-218,436.4**	-364,899.6**
	[3,642.3]	[3,826.9]	[4,537.0]	[5,323.4]	[6,051.9]	[7,837.1]	[10,429.1]	[37,802.0]	[55,421.6]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.89	0.92	0.93	0.93	0.94	0.94	0.93	0.81	0.72

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 8

REGRESSIONS WEIGHTED BY EMPLOYMENT

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshroring (Less Dev)	385.0**	544.9**	503.7**	443.7**	486.3**	426.3*	85.2	-666.1	-4,322.0**
	[82.1]	[107.8]	[130.2]	[150.1]	[181.5]	[215.2]	[290.1]	[602.3]	[1,361.6]
Offshoring (Dev)	-227.5*	-370.8**	-317.0**	-240	-237	-107.9	139.5	496.2	-503.9
	[96.2]	[111.1]	[120.0]	[134.4]	[155.1]	[188.1]	[236.6]	[393.9]	[1,195.7]
Immigration (Less Dev)	-42.2**	-51.1**	-68.7**	-71.2**	-78.9**	-86.3**	-97.1**	-144.4**	-533.9**
	[8.8]	[10.7]	[13.1]	[15.3]	[18.7]	[23.1]	[28.5]	[38.6]	[138.6]
Immigration (Dev)	234.7**	257.2**	350.4**	417.4**	533.9**	722.6**	860.1**	1,352.3**	3,029.3**
	[48.6]	[58.9]	[68.7]	[77.1]	[86.5]	[112.7]	[147.5]	[408.2]	[1,031.5]
Inshoring	215.9**	329.7**	402.5**	468.9**	600.5**	678.8**	996.5**	1,555.6**	7,345.9**
	[82.5]	[93.0]	[103.8]	[122.4]	[147.7]	[201.9]	[256.1]	[378.9]	[1,733.9]
Age	56.5	111.7*	133.8*	108.7	99.7	73.9	129.4	24.6	64.5
	[44.5]	[53.8]	[64.2]	[73.1]	[81.9]	[97.6]	[120.8]	[194.4]	[574.8]
Education	2,293.7**	3,559.1**	4,746.7**	5,967.3**	7,452.9**	9,272.0**	11,534.8**	16,765.4**	24,607.6**
	[181.8]	[199.0]	[239.8]	[286.7]	[331.0]	[418.6]	[547.7]	[1,519.2]	[2,632.1]
Male	80.6**	119.8**	147.3**	184.9**	232.7**	276.8**	338.7**	463.8**	852.8**
	[9.4]	[10.8]	[13.2]	[16.5]	[20.0]	[26.7]	[37.5]	[116.5]	[231.6]
Black	14.3	40.9**	75.9**	99.1**	117.6**	123.0**	112.3**	100.1**	94.1
	[9.9]	[11.6]	[13.8]	[15.8]	[18.1]	[21.5]	[26.2]	[35.5]	[120.6]
Asian	328.1**	778.0**	875.5**	1,072.1**	1,242.6**	1,649.5**	2,029.6**	2,583.9**	8,269.1**
	[77.8]	[99.9]	[137.6]	[179.2]	[215.2]	[257.5]	[316.9]	[427.7]	[2,366.3]
Hispanic	20.1	-4.1	7	-31.2	-34.8	-52.9	-78.7	-32.7	396.5
	[21.8]	[29.2]	[33.1]	[35.6]	[39.7]	[50.3]	[57.2]	[82.6]	[422.8]
Married	-36.1*	-25.8	-19.5	-23.6	-25.8	-11.7	-9.8	-55.5	-114
	[14.6]	[17.1]	[20.1]	[23.3]	[27.0]	[33.3]	[41.4]	[55.4]	[182.8]
Single	-87.5**	-110.5**	-133.5**	-172.8**	-193.6**	-224.2**	-226.2**	-240.4**	-496.6
	[19.7]	[23.2]	[27.7]	[33.0]	[37.6]	[46.0]	[56.5]	[78.9]	[255.7]
Constant	-23,170.2**	-37,855.6**	-49,269.9**	-58,984.7**	-73,138.1**	-89,975.8**	-114,025.1**	-160,096.7**	-245,346.0**
	[2,832.8]	[3,397.4]	[4,130.8]	[4,796.9]	[5,597.4]	[6,734.3]	[8,550.1]	[20,022.6]	[36,334.8]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.91	0.93	0.94	0.94	0.94	0.94	0.94	0.88	0.76

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 9

REGRESSIONS WEIGHTED BY THE NUMBER OF CENSUS OBSERVATIONS

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshroring (Less Dev)	379.0**	463.6**	478.0**	400.0**	389.9*	273.6	2.3	-717.1	-4,388.7**
	[88.3]	[105.7]	[123.1]	[139.4]	[165.2]	[187.6]	[248.6]	[478.7]	[1,050.2]
Offshoring (Dev)	-298.0**	-352.4**	-391.0**	-330.5**	-292.8*	-152.2	38.3	358.4	497.8
	[96.2]	[102.5]	[110.1]	[118.5]	[130.9]	[149.9]	[183.3]	[279.1]	[769.3]
Immigration (Less Dev)	-52.6**	-54.5**	-69.8**	-73.1**	-78.9**	-87.4**	-90.4**	-126.0**	-463.9**
	[9.7]	[11.0]	[12.7]	[14.8]	[17.3]	[22.1]	[27.5]	[39.8]	[121.8]
Immigration (Dev)	235.7**	287.8**	375.9**	427.9**	558.3**	766.8**	918.7**	1,621.8**	3,361.8**
	[47.6]	[52.1]	[58.9]	[68.5]	[78.5]	[102.2]	[138.4]	[456.6]	[957.0]
Inshoring	283.5**	367.4**	467.5**	536.4**	647.3**	762.6**	1,012.3**	1,467.2**	5,205.4**
	[77.5]	[82.3]	[89.3]	[102.4]	[120.5]	[153.3]	[193.7]	[281.2]	[1,241.2]
Age	38.5	77.5	111	98.9	122.4	90.6	145.2	97.5	109.8
	[44.5]	[50.4]	[58.2]	[65.1]	[72.5]	[85.3]	[107.0]	[172.2]	[475.3]
Education	2,517.1**	3,733.1**	4,938.0**	6,135.9**	7,592.8**	9,259.6**	11,588.3**	16,368.7**	22,741.2**
	[162.3]	[178.3]	[208.6]	[247.3]	[287.6]	[357.3]	[467.6]	[1,260.6]	[2,090.5]
Male	89.4**	135.1**	167.7**	216.1**	270.4**	336.5**	415.7**	577.2**	1,094.5**
	[9.3]	[10.1]	[12.0]	[15.2]	[18.9]	[25.2]	[36.5]	[124.3]	[226.4]
Black	8	25.4*	49.3**	68.6**	79.3**	72.3**	49.6*	24.4	-79
	[9.7]	[10.9]	[12.5]	[14.4]	[16.6]	[19.5]	[24.1]	[34.3]	[106.5]
Asian	315.1**	656.8**	720.3**	976.8**	1,172.8**	1,640.8**	2,185.1**	2,992.5**	10,097.1**
	[78.9]	[94.7]	[127.3]	[169.0]	[210.1]	[262.6]	[342.3]	[506.1]	[2,314.6]
Hispanic	18.7	-22.7	-19.3	-45.4	-51.3	-50.1	-74.6	-6.5	372.8
	[22.8]	[28.3]	[31.0]	[33.4]	[37.4]	[47.3]	[53.8]	[86.5]	[404.0]
Married	-50.0**	-44.9**	-30.6	-19.7	-11	-1.4	10.6	-10.1	-20.2
	[14.1]	[15.5]	[17.3]	[19.6]	[22.8]	[27.7]	[34.8]	[47.2]	[152.6]
Single	-102.2**	-134.7**	-148.8**	-167.4**	-170.2**	-201.7**	-191.2**	-172.5*	-286.9
	[18.9]	[21.2]	[23.8]	[27.2]	[31.1]	[37.7]	[47.4]	[70.6]	[213.3]
Constant	-24,279.2**	-37,540.7**	-50,587.2**	-62,787.9**	-79,403.1**	-95,682.8**	-122,689.4**	-172,192.2**	-254,979.0**
	[2,820.9]	[3,155.0]	[3,686.0]	[4,241.4]	[4,915.5]	[5,909.2]	[7,659.0]	[19,243.4]	[32,567.2]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.9	0.93	0.93	0.94	0.94	0.94	0.93	0.87	0.76

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 10

OFFSHORING CONSTRUCTED USING 1999 STATE GDP SHARES

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshroring (Less Dev)	709.6**	754.0**	753.9**	678.2**	746.7**	640.9**	463.4**	-6.4	-2,044.3**
	[93.5]	[106.3]	[123.4]	[131.5]	[137.1]	[149.7]	[167.8]	[227.8]	[523.5]
Offshoring (Dev)	-616.5**	-553.6**	-507.5**	-452.3**	-436.5**	-302.5*	-87.3	194	388.1
	[104.0]	[104.1]	[106.2]	[109.8]	[120.6]	[125.9]	[141.2]	[182.1]	[418.2]
Immigration (Less Dev)	-55.6**	-69.8**	-85.1**	-89.7**	-88.2**	-88.6**	-106.4**	-115.2**	-158.6
	[11.3]	[12.6]	[15.6]	[17.0]	[17.8]	[20.3]	[22.3]	[30.1]	[85.3]
Immigration (Dev)	258.7*	189.4*	161.4*	170.9*	247.3**	321.1**	402.2**	580.1**	834.5*
	[102.9]	[89.2]	[65.9]	[75.5]	[76.4]	[98.4]	[116.2]	[182.3]	[360.8]
Inshoring	381.7**	493.3**	580.1**	672.3**	726.0**	827.3**	985.2**	1,293.4**	2,960.2**
	[96.0]	[95.7]	[92.5]	[102.0]	[116.3]	[125.5]	[142.1]	[188.7]	[526.8]
Age	181.1**	165.8**	253.1**	278.0**	313.8**	254.3**	390.2**	422.6**	1,105.8**
	[56.1]	[57.0]	[60.7]	[65.1]	[68.9]	[89.3]	[95.5]	[129.1]	[371.0]
Education	1,702.1**	2,829.9**	3,597.9**	4,599.5**	5,461.5**	6,694.5**	7,797.9**	10,559.8**	17,246.4**
	[205.7]	[218.9]	[220.9]	[287.6]	[292.1]	[375.3]	[398.5]	[599.4]	[1,317.6]
Male	87.6**	130.6**	151.7**	180.0**	217.8**	276.2**	321.3**	374.8**	669.0**
	[9.9]	[11.0]	[12.3]	[14.3]	[15.1]	[17.9]	[20.7]	[36.9]	[85.9]
Black	33.6**	45.6**	56.8**	67.1**	65.3**	54.5**	22.1	-14.4	-236.5**
	[11.0]	[11.8]	[13.1]	[15.1]	[16.3]	[18.3]	[21.5]	[27.6]	[78.5]
Asian	146.3	301.4*	277.3*	492.9**	542.1**	677.8**	930.7**	1,273.4**	3,498.4**
	[104.4]	[120.4]	[119.9]	[189.1]	[177.4]	[191.5]	[208.9]	[297.5]	[996.3]
Hispanic	46.7	48.3	44.4	25.1	-7.8	-38.9	-57.1	-105.5	-156.3
	[26.2]	[30.5]	[33.2]	[36.4]	[37.4]	[42.1]	[46.5]	[62.3]	[170.4]
Married	-9.4	-4.9	10.5	40.2	48.1*	57.9*	86.8**	83.1*	-131.1
	[16.4]	[18.7]	[18.7]	[20.9]	[22.4]	[26.3]	[29.9]	[38.2]	[152.6]
Single	-63.4**	-99.9**	-96.8**	-99.7**	-102.9**	-111.9**	-67.2	-35.5	-87.7
	[21.3]	[23.5]	[26.1]	[27.3]	[29.0]	[32.7]	[38.7]	[51.2]	[183.1]
Constant	-26,430.8**	-36,086.4**	-45,690.4**	-57,214.9**	-66,965.3**	-77,414.0**	-94,355.4**	-119,407.0**	-203,195.7**
	[3,124.8]	[3,470.2]	[3,639.6]	[4,161.6]	[4,529.2]	[5,112.0]	[5,888.7]	[8,237.3]	[21,789.7]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.84	0.88	0.89	0.9	0.91	0.9	0.9	0.86	0.69

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 11
TOTAL INCOME

	Income 10th%	Income 20th%	Income 30th%	Income 40th%	Income 50th%	Income 60th%	Income 70th%	Income 80th%	Income 90th%
Offshroring (Less Dev)	518.7**	549.0**	516.9**	448.7**	489.4**	374.7*	216	-136.8	-1,777.1**
	[90.0]	[105.0]	[117.9]	[132.3]	[144.0]	[152.2]	[175.3]	[241.0]	[561.2]
Offshoring (Dev)	-356.5**	-332.1**	-291.8**	-276.0*	-196	-165.7	113.6	297.7	404.8
	[100.8]	[105.0]	[104.1]	[115.6]	[124.4]	[132.4]	[150.6]	[190.0]	[460.3]
Immigration (Less Dev)	-59.9**	-80.2**	-95.0**	-106.8**	-106.1**	-116.9**	-134.7**	-151.7**	-372.2**
	[11.7]	[13.8]	[15.3]	[17.2]	[18.4]	[21.5]	[24.8]	[39.9]	[78.2]
Immigration (Dev)	23.5	122.4	108.3	126.1	184.0*	208.8*	172.3	434.5**	1,342.5**
	[50.7]	[78.8]	[64.4]	[96.3]	[87.0]	[84.6]	[100.8]	[138.8]	[374.7]
Inshoring	374.4**	513.8**	647.6**	749.6**	775.3**	975.0**	1,093.0**	1,340.2**	2,618.6**
	[91.4]	[93.7]	[89.9]	[105.5]	[113.3]	[130.5]	[148.4]	[192.2]	[580.7]
Age	194.0**	207.8**	267.3**	284.0**	297.9**	282.8**	416.7**	537.8**	1,253.8**
	[51.1]	[61.0]	[59.1]	[72.7]	[73.9]	[85.8]	[104.6]	[202.6]	[362.4]
Education	1,944.2**	2,829.0**	3,786.7**	4,908.5**	5,706.5**	6,831.7**	8,675.7**	10,765.4**	17,754.4**
	[185.3]	[205.9]	[205.2]	[252.9]	[274.1]	[349.1]	[443.4]	[828.4]	[1,429.2]
Male	83.6**	130.1**	149.9**	190.8**	231.6**	288.5**	329.4**	407.5**	706.9**
	[9.9]	[10.9]	[11.5]	[13.2]	[14.9]	[18.7]	[23.3]	[41.2]	[93.4]
Black	17.7	32.4**	49.0**	58.1**	50.0**	35.4	5.3	-62.8	-244.3**
	[10.5]	[11.5]	[12.6]	[15.1]	[16.6]	[19.2]	[23.4]	[34.9]	[84.4]
Asian	216.3*	170.7	197.7	292.9*	358.6*	721.9**	1,051.2**	1,611.6**	3,808.0**
	[108.0]	[125.8]	[127.8]	[143.0]	[156.1]	[202.9]	[250.0]	[394.0]	[1,065.8]
Hispanic	36.5	69.7*	61	19.2	-24.3	-44.3	-60	-108.4	-152.7
	[26.7]	[28.5]	[31.2]	[35.2]	[36.6]	[41.4]	[47.2]	[65.5]	[175.2]
Married	-51.1**	-60.3**	-27.7	-6.5	17.6	35	23.8	42.4	113.3
	[15.2]	[16.2]	[17.8]	[20.2]	[22.5]	[25.5]	[31.2]	[42.1]	[108.9]
Single	-98.9**	-135.0**	-116.0**	-122.5**	-126.9**	-127.9**	-91.0*	-34.7	195.5
	[20.9]	[23.3]	[23.9]	[27.1]	[28.8]	[35.1]	[45.6]	[70.9]	[143.9]
Constant	-25,788.6**	-33,451.0**	-45,191.4**	-57,561.4**	-67,057.8**	-78,030.6**	-98,845.7**	-123,538.2**	-235,289.6**
	[3,022.4]	[3,293.7]	[3,468.4]	[4,198.6]	[4,639.7]	[5,468.1]	[6,882.7]	[9,528.3]	[21,430.4]
Observations	4032	4032	4032	4032	4032	4032	4032	4032	4032
R-squared	0.86	0.89	0.9	0.91	0.91	0.91	0.9	0.86	0.74

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.

TABLE 12

SAMPLE RESTRICTED TO THOSE THAT DID NOT MIGRATE ACROSS STATES IN LAST YEAR (2000 EXCLUDED)

	Wage 10th%	Wage 20th%	Wage 30th%	Wage 40th%	Wage 50th%	Wage 60th%	Wage 70th%	Wage 80th%	Wage 90th%
Offshroring (Less Dev)	533.0**	573.5**	622.8**	535.3**	560.8**	514.3**	180.1	-86.8	-985.1
	[123.9]	[145.8]	[158.6]	[174.1]	[190.5]	[198.7]	[222.8]	[270.2]	[695.1]
Offshoring (Dev)	-353.4**	-298.2*	-394.3**	-308.2*	-179.2	-147.3	213.4	321.2	52.7
	[130.6]	[139.8]	[137.4]	[147.6]	[160.1]	[169.5]	[197.3]	[234.3]	[565.2]
Immigration (Less Dev)	-36.3**	-50.1**	-58.9**	-74.5**	-83.1**	-70.3**	-80.5**	-99.1**	-317.4**
	[14.0]	[15.2]	[18.0]	[18.5]	[19.7]	[22.6]	[25.6]	[32.6]	[104.7]
Immigration (Dev)	194.4*	111.4	132.1	116.3	176.7	253.6*	254.5**	494.0*	486.9
	[86.9]	[68.6]	[102.0]	[77.1]	[90.8]	[100.9]	[85.3]	[240.9]	[361.7]
Inshoring	398.1**	597.5**	721.9**	827.7**	818.4**	1,009.0**	1,176.8**	1,515.3**	2,176.5**
	[111.9]	[115.8]	[106.7]	[116.2]	[126.2]	[141.2]	[166.1]	[198.8]	[502.9]
Age	160.1**	95.8	190.1**	215.5**	234.4**	266.0**	358.6**	414.1**	920.6*
	[59.5]	[64.7]	[68.0]	[68.7]	[71.9]	[88.2]	[102.5]	[139.1]	[357.4]
Education	1,630.4**	2,755.9**	3,660.7**	4,460.4**	5,232.6**	6,081.5**	7,480.3**	9,408.8**	17,409.2**
	[253.3]	[269.6]	[354.7]	[330.6]	[344.7]	[381.9]	[403.6]	[545.7]	[1,981.1]
Male	99.2**	134.1**	147.2**	176.5**	206.0**	261.6**	297.2**	328.7**	526.3**
	[12.3]	[12.8]	[14.2]	[15.0]	[15.5]	[18.2]	[21.4]	[30.4]	[76.0]
Black	26.2*	48.6**	58.3**	62.6**	62.5**	38.9	9.3	-19	-206.8*
	[12.7]	[13.7]	[16.1]	[17.3]	[18.5]	[21.1]	[24.4]	[31.4]	[91.4]
Asian	96.5	165.2	450.5*	381.9*	407.0*	611.7**	715.3**	822.6**	2,409.8**
	[113.1]	[143.4]	[209.5]	[188.4]	[175.0]	[184.6]	[201.0]	[243.5]	[845.4]
Hispanic	13.2	15.2	4.6	4	-10	-37.8	-69.5	-85.6	-162
	[30.1]	[36.9]	[32.6]	[36.1]	[37.4]	[40.0]	[45.8]	[60.9]	[185.4]
Married	-36.4	-15.6	7.8	33.3	62.3	62.4	81.5*	99.5*	-359.7
	[28.0]	[27.0]	[32.9]	[29.7]	[31.8]	[36.5]	[35.3]	[43.7]	[306.3]
Single	-106.7**	-149.0**	-138.2**	-132.4**	-124.0**	-139.2**	-97.1*	-77.6	-436.6
	[31.7]	[32.3]	[37.7]	[35.6]	[37.8]	[42.7]	[44.6]	[59.0]	[361.0]
Constant	-22,193.0**	-30,282.9**	-41,712.1**	-50,925.0**	-59,738.5**	-68,882.8**	-85,320.4**	-102,861.0**	-165,843.1**
	[3,672.9]	[4,135.7]	[4,330.4]	[4,472.5]	[4,734.2]	[5,414.1]	[6,319.3]	[8,071.3]	[26,393.4]
Observations	3360	3360	3360	3360	3360	3360	3360	3360	3360
R-squared	0.82	0.86	0.88	0.89	0.9	0.9	0.89	0.87	0.66

Robust standard errors in brackets. * significant at 5%; ** significant at 1%. Coefficients for year, state, and industry dummy variables not shown.