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The Multinational Wage Premium and Wage Dynamics

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Abstract

Using detailed administrative data linking French firms and workers over the years 2002-2007, we document a distinct U-shaped pattern in worker-level wages surrounding the time their employer is acquired by a foreign firm, with a dip in earnings observed for several years before domestic firms switch to MNE status. This pre-acquisition decline in earnings can partly explain why prior evidence found no impact of foreign ownership on worker-level wages. Accounting for the pre-acquisition earnings dip and other confounding wage dynamics we find that MNEs increase remuneration to workers by 4.8% initially, and by 6%-8% after several years. Unique information about in-kind payments reveals that bonuses and other non-monetary remuneration also exhibit a U-shaped pattern surrounding foreign acquisition.

JEL-Code: F660, F140, F230.

Keywords: multinational enterprises, wage premium, in-kind payments.

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1 Introduction

For many countries, multinational enterprises (MNEs) account for a substantial share of total domestic employment. For example, in France, MNEs account for upwards of 25% of total hours worked and total national employment. Slaughter (2009) reports similarly large volumes of labor usage by MNEs within the US. An important implication of this concentration of hiring activity is that the expansion of MNEs in the global economy can substantially impact nations' aggregate wage distributions. Nocke & Yeaple (2007), Head & Ries (2008), and UNCTAD (2000) document that the dominant mode of expansion MNEs use to enter foreign economies is cross-border merger & acquisitions (M&A). Hence, a key mechanism by which globalization impacts local incomes is through changes in wages for workers whose domestic employers are acquired by an MNE.

In this paper we examine the wage dynamics of workers employed at firms that transition from being domestic enterprises to being part of an MNE through cross-border acquisition. Our analysis empirically investigates both pre- and post-acquisition changes in worker-level earnings, and shows that wages exhibit a distinct U-shaped pattern surrounding in the incidence of cross-border M&A activity. We find similar patterns in other compensation using unique information about benefits in-kind given to workers, which includes bonuses and various forms of non-monetary remuneration. These U-shaped patterns in earnings dynamics are substantial in both their magnitude (wage levels) and duration (time surrounding acquisition).

We estimate relative wage declines of approximately 7.9% over the three-year period prior to foreign acquisition. Recognizing that there is a pre-acquisition dip in worker-level earnings, we implement a year-over-year difference estimation strategy to account for the observed pre-trends in wage levels, and assess the potential for MNEs to pay a wage premium to otherwise observationally equivalent workers. We find that the initial increase in wages in the year following acquisition is approximately 4.8%, and that wages are 6-8% higher two and three years after domestic firms switch to MNE status. These estimates imply that more than 50% of the observed wage premium is attributable to the unique features of MNEs, rather than other observable worker and firm characteristics. Finally, we show that the pre-acquisition dip for earnings including benefits in-kind over three years prior to acquisition is even more pronounced, though the post-acquisition recovery appears not to be as favorable for workers.

We observed the quasi-exhaustive population of French workers, with information about earnings that offer several advantages for our purposes. First, wages are recorded net of employee and employer payroll tax contributions. In this sense, our measurement of wages best captures retained worker earnings rather that firm-level labor costs. Second, we are able to distinguish worker-level earnings in the form of benefits in-kind, in addition to their net wages. Benefits-in-kind include, for example, the private use of a company car, free or subsidized accommodation and preferential loans, allowances for lunch or travel, communication tools such as phones, computers or internet, etc. This feature allows us to explore not only how the *level* of worker earnings changes as domestic firms transition to becoming MNEs, but also how the *composition* of earnings changes. Finally, we are able to merge worker-level information with detailed data about their employer. The matched employee-employer dataset allows us to examine the the relative wages paid by MNEs overtime controlling for a rich set of worker, firm, and occupation characteristics.

Our finding of a reduction in wages prior to cross-border M&A activity is a consequence of the selection of targets by foreign acquirers. Blonigen et al. (2013) shows that the incidence of foreign acquisition is preceded by a series of negative productivity shocks within domestic target firms; in an active M&A market, negative internal productivity shocks raise the net benefit of selling valuable assets to external firms, and subsequently domestic firms will become an MNE whenever the acquiring firm originates abroad. Importantly, these productivity shocks are also associated with remuneration to workers, so that workers employed at firms that become MNEs face different pre-trends in wages than those employed at firms that remain domestic. Specifically, the negative productivity shocks that precipitate foreign acquisition lead to persistent relative wage declines for employees in advance of foreign takeover. Moreover, we document that these negative productivity shocks are associated with changes in workforce composition several years prior to the incidence of foreign takeover. The subsequent increase in wages following acquisition is consistent with the evidence that MNEs invest substantially in the production capacities of target firms, thereby raising workers' marginal products; see Arnold & Javorcik (2009) and Guadalupe et al. (2012).

Early studies of MNEs indicated that average firm-level wages are indeed higher than observed at domestic firms, yet the recent availability of matched employee-employer datasets across several countries casts doubts about the actual impact on worker-level wages. Much of the evidence using information about worker characteristics suggests that the observed multinational wage premium

may be almost entirely due to the sorting of different workers across firms. The seminal work in Heyman et al. (2007) concludes that foreign ownership does not increase wages of Swedish workers, with some evidence that MNEs may even pay lower wages. Hijzen et al. (2013) incorporates administrative data from several countries (Brazil, Germany, Indonesia, Portugal, & UK) and finds little evidence that MNEs increase wages to otherwise identical workers. Huttunen (2007) does find some evidence in Finland of a small wage premium ($< 2\%$ - 3%), but only for high skill workers, and not until several years after their employer becomes an MNE. Each of these studies combine a difference-in-difference (DID) estimator with propensity score matching techniques to control for the selection of firms that are selected into multinational status.[1] However, the key result we document here is that worker-level wages exhibit a distinct U-shape pattern as domestic firms switch to MNE status – declining several years prior to foreign acquisition, and increasing for several years after – indicates that there is a pre-trend in worker-level earnings which confounds DID estimates. It is only after accounting for these persistent declines in wages prior to acquisition that we find evidence of multinational wage premium paid to workers with similar characteristics employed by domestic establishments.

We also highlight dynamics in MNE activity at more aggregate levels that may also confound DID estimates of the multinational wage premium. A prominent feature of aggregate M&A activity is the existence of merger waves, so that the propensity of firms to become MNEs ebbs and flows over time.[2] The year to year oscillations in merger waves varies substantially across sectors. We highlight that the differences between sectors in the dynamics of M&A activity are correlated with inter-industry wage differentials, so that the omission of sector-by-time effects can lead to substantial bias. Consistent with expectations, we show that omitting information about sector-specific dynamics in our sample – which covers an expansion period in M&A activity – leads to an upward biased estimate. Importantly, most prior studies of wages at MNEs examine periods of contraction in cross-border investment activity that would lead to downward biased estimates when sector-specific dynamics are omitted, which may also partly explain why they have generally found no evidence of a significant wage premium.

[1] As an alternative strategy, Martins (2011) examines changes in wages due to labor mobility and finds that they are similar for Portuguese workers that transition from employment at a domestic to a foreign firm, or from one foreign firm to another, suggesting there is a negligible impact of MNEs on worker earnings.

[2] For recent analyses of merger waves see Harford (2005) and Forbes & Warnock (2012), among many others.

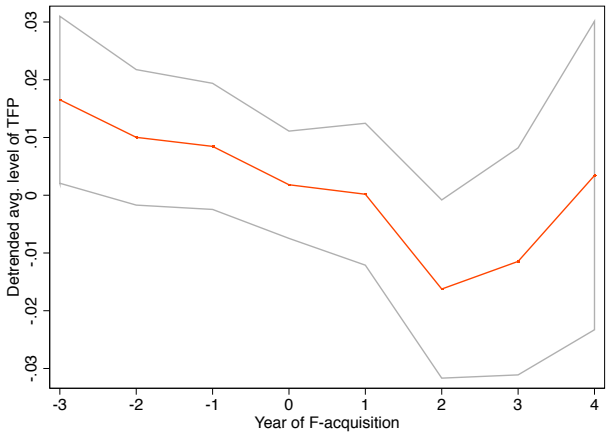

Figure 1: Firm-level productivity prior to and after foreign acquisition

2 A First Look at MNE Characteristics Across Time

In order to motivate our empirical strategy for estimating the worker-level wage dynamics surrounding cross-border M&A activity, here we illustrate the systematic patterns in firm-level characteristics prior to being acquired by an MNE, as well as changes in MNE activity over time at the sector-level. Figure 1 takes advantage of detailed administrative data from French firms to illustrate systematic changes in firm characteristics as they transition from domestic to multinational status. Specifically, we plot TFP for firms that are acquired by foreign owners relative to sector and year averages, from three years prior to the acquisition through four years after the firm is acquired.[3] The middle line shows the relative detrended TFP for the average French firm acquired by a foreign owner, whereas the lines above and below show the relative detrended TFP for the 95th and 5th percentiles, respectively.

There are several important features of Figure 1. First target firms are, on average, 1.5% above the mean in three years prior to their of acquisition, and significantly above the typical firm in their same sector each year before acquisition. Second, even the targets of acquisition with the lowest relative productivity levels (say, at the 5th percentile) have greater than average productivity prior to acquisition. Third, we see that prior to acquisition, relative detrended TFP among target firms is falling significantly for any initial TFP level – from the 5th to 95th percentile in target firm productivity levels we see significant declines. By the time of acquisition, the average target

[3]The data sources used to estimate firm-level TFP and construct Figure 1 are described in section 4.

firm is indistinguishable from non-acquired firms in terms of productivity. Fourth, the relative dip in productivity of domestic firms that become MNEs is realized for several years prior to acquisition.[4] These facts all indicate that relatively high productivity levels may be predictors of future acquisition, but not the state of the firm characteristics at the time of their acquisition.[5]

The dynamics of firm-level productivity illustrated in Figure 1 are relevant here because these productivity shocks in the pre-acquisition period are also informative about the evolution of wages paid to workers whose employers become MNEs. The relative reductions in productivity are associated with relative reduction in wages at firms that switch to being MNEs upon acquisition by a foreign firm. Hence, over the entire pre-acquisition period, wages will appear on average higher then they are at the incidence of acquisition, which will likely confound DID estimates. Moreover, the tendency for firms that become MNEs to have nearly identical productivity to non-MNEs at the time of foreign acquisition, and the fact that the entire distribution of firms acquired by MNEs to experience declines in productivity for several years, each suggest that static TFP levels have only a tenuous relationship with the propensity of firms to become MNEs at any given point in time. In other words, simply controlling for firm productivity levels still omits important information about the propensity of firms to select into MNE status at a given point in time, and therefore may lead to biased estimates of the multinational wage premium.

In addition to wage dynamics, shocks to productivity within firms prior to becoming an MNE also inform about potential changes in workforce composition. The realization of negative firm-level shocks may induce some workers to exit and seek employment elsewhere. Indeed, Hijzen et al. (2013) proved evidence that target of foreign acquisition exhibit significantly higher worker separation rates before foreign takeover than following acquisition. Negative productivity shocks may cause employers to shed select types of occupations, which also causes the composition of target firms' workforce to change before an acquisition occurs. To demonstrate this point, in Table 1 we calculate the average skill intensity of the workforce for French firms that are targets of foreign acquisition year-by-year over the period preceding acquisition. Specifically we calculate

[4]We note that our results indicate that firm-level productivity and worker-level wages decline for several years prior to foreign acquisition, while Fich, Cai & Tran (2011) provides evidence from administrative filings by firms declaring their potential intent to merge that the length of M&A negotiations, from first contact, is approximately 120 days on average, and only 160 days at the upper quartile. Hence, it is highly unlikely that changes in wages two or three years prior to acquisition are related to the negotiation of a takeover by a foreign MNE. See Blonigen et al. (2013) for further discussion of how these productivity shocks promote foreign acquisition of domestic targets.

[5]Other key characteristics such as target firm market shares exhibit patterns similar to Figure 1.

Table 1: Changes in Workforce Composition Preceding Foreign Acquisition

Average Share of Total Hours Worked by Employees in Unskilled Occupations					
Average over pre-acquisition period	Three Years before acquisition	Two Years before acquisition	One Year before acquisition	Year of of acquisition	**Average over post-acquisition period**
0.293	0.263	0.256	0.254	0.242	**0.219**

the share of average total annual hours worked at target firms by workers employed in unskilled occupations, where unskilled occupations is composed by unskilled industrial, independent and agricultural workers.[6]

Table 1 shows that, coincident with their realization of negative productivity shocks, firms that are targets of foreign acquisition begin to alter the composition of their workforce several years prior to acquisition. From three years prior to acquisition, up to the year of acquisition, the typical firm steadily reduces the share of hours worked by employees in unskilled occupations from 0.263 to 0.242. The first and last column of Table 1 report the average share of total hours worked in unskilled occupations across the entire pre- and post-acquisition periods. Focusing solely on the difference between the skill mix of target firms' workforces prior to and after acquisition, one might conclude that one effect of foreign takeover is that the MNEs recruit substantially high skilled workers. However, target firms appear to be shedding unskilled jobs before the acquisition takes place. Thus, standard DID estimates of the multinational wage premium that treat pre-acquisition workforce characteristics as fixed are likely to be biased.

The dynamics of cross-border investment also exhibits distinct patterns at more aggregate levels. In Figure 2 we plot global cross-border M&A activity (the predominant mode of foreign investment) for the years 1990-2008. The data to construct Figure 2 come from the SDC Platinum Database available from Thompson Reuters. Panel A plots the number of cross-border M&As observed in each year aggregated across all manufacturing sectors and countries, while Panel B plots the

[6]It corresponds to PCS-ESE French occupation groups 67, 68 and 69: unskilled industrial workers, unskilled independant workers and unskilled agricultural workers, respectively.

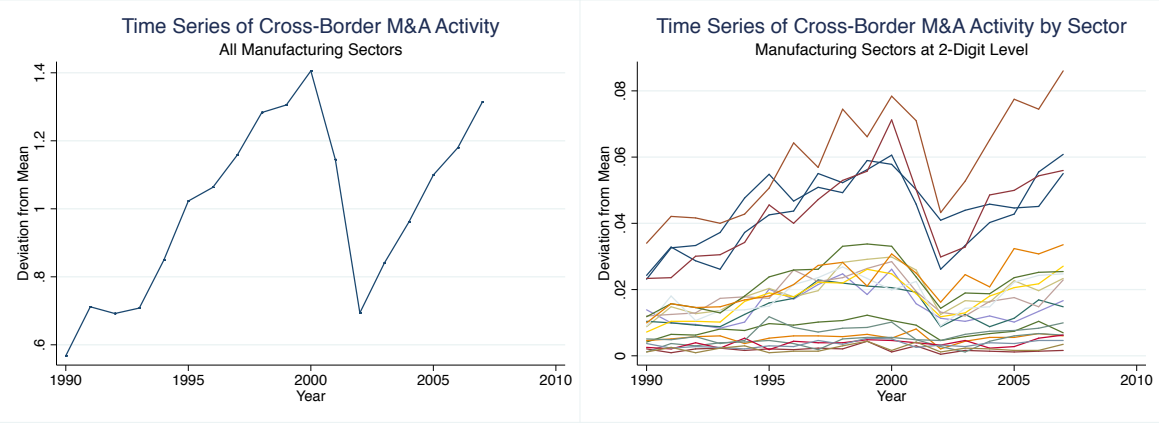

Figure 2: Source – SDC Platinum Database, Thompson Reuters

number of M&As for each manufacturing sector defined at the 2-digit SIC level. The values in each panel correspond the volume of M&A activity relative to the sample mean observed across all manufacturing sectors and all years.

Consistent with the large literature on merger activity, Panel A reveals a distinct wave pattern in the aggregate amount of cross-border acquisitions over time. The changes in activity are substantial; for example, the relatively low volume of activity at the beginning of the sample is less than half the volume of M&A activity in 2000, with another sharp decline in activity in 2001 and 2002. While time-period fixed effects may capture this aggregate oscillation, Panel B demonstrates that the fluctuations in multinational activity are quite different across sectors.

On average, sectors with higher levels of M&A activity are also those with relatively larger growth over the sample period, while low volume sectors experience a flat trend in M&A activity over time. Looking year to year, there are also substantial differences in the variation in activity across manufacturing sectors; note that the growth in aggregate activity from 2002 to 2008 is primarily the result of increases in the M&A activity of only a few sectors. If these sectors with relatively high flows of cross-border investment activity during 2002-2008 are also those with relatively high wages, then one might spuriously attribute higher wages to the effects of MNE. Alternatively, if one were to examine a different sample period of, say, 1997-2004, it would appear that there is a downward trend in M&A activity among these high wage sectors, which would spuriously lead to smaller estimates of the effects of MNE status. At a minimum, the patterns in Figure 2 suggest that it is crucial to account for sector-specific dynamics to accurately identify the wage premium paid

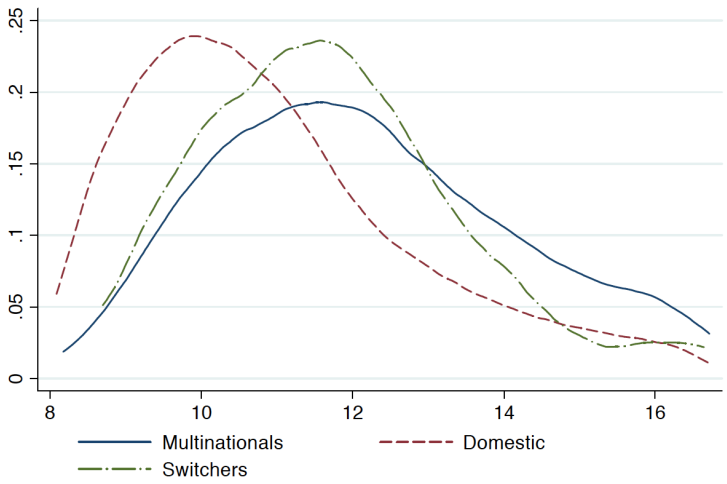

Figure 3: Annual Wage Distribution by Type of Firm:
MNE, Domestic Firm & Switcher

by MNEs. But it is also important to recognize that the direction of the bias generated by omitting sector-by-year effects depends on whether the sample period covers an expansion or contraction period within a merger wave.

Finally, Figure 3 plots the unconditional densities of worker-level hourly wages observed among domestic firms, MNEs, and those firms that switch from domestic to being foreign-owned during the sample period. The well-known fact that MNEs pay relatively higher wages is apparent, as the density of observed MNE wages lies is concentrated at higher wage levels as compared to that observed for domestic firms. Over the whole sample, observed wages at MNEs are approximately 11% higher on average. Interestingly, we find that firms that switch from being domestic to MNEs within our sample appear to have a relatively higher wages over the whole distribution than those firms that remain domestic, but a distribution of wages that is relatively lower than that for firms that are observed to be MNEs throughout our sample.

The key question is whether or not the higher wages observed among MNEs are a consequence of their participation in the global economy, or attributable to other worker and firm characteristics. In the next section we develop an empirical strategy that explicit accounts for the confounding implications of these firm-specific dynamics and sector-specific dynamics in MNE activity.

3 Empirical Strategy

In this section we describe our empirical strategy to estimate wage levels for workers employed at firms that switch from domestic to MNE status via cross-border M&A activity. Consistent with much of the literature, we estimate a linear wage equation with the following form:

$$\ln \omega_{ijsy} = \alpha + \beta MNE_{ijsy} + X_{ijsy}\Gamma + \sigma_{sy} + \epsilon_{ijsy} \tag{1}$$

where ω_{ijsy} is the individual net wage – or earning that includes net wage and benefits-in-kind, of individual i in year y employed by firm j in sector s. MNE_{ijsy} is an indicator variable that equals unity if the firm belongs to a multinational enterprise. The vector X_{ijsy} contains several individual and firm control variables, and the term σ_{sy} represent sector-by-year fixed effects. Our key parameter of interest is β, which indicates the wage premium paid by multinational firms. To identify β, we exploit variation in MNEs status as firms switch from domestic to multinational status when they are acquired by foreign firms. This variation in MNE status due to cross-border M&A activity is particularly relevant, as it is the predominant mode of foreign investment (UNCTAD, 2000), and also corresponds to a common empirical strategy adopted in prior literature.

A unique feature for our data is that, for a sub-sample of French workers (the October-birth cohort), we observe earnings in the form of benefits-in-kind, in addition to individuals' wages. We will also estimate (1) using total worker-level earnings as the dependent variable. Contrasting the results for total earnings and wages will allow us to examine how the composition of payments to workers changes as domestic firms are acquired by foreign MNEs.

Pertinent to our analysis here, Blonigen, Fontagne, Sly & Toubal (2013) show that firms are more likely to become multinational firms upon realizing negative shocks to their productivity, because these shocks raise their propensity to accept takeover bids and be acquired by multinational firms. As discussed above, these firm-level productivity shocks also inform about the potential remuneration to workers; negative productive shocks lead to reductions in relative wages. This potential for workers employed at firms that are acquired by MNEs to experience reductions in wages prior to acquisition raises concerns about using the sample years prior to acquisition as the appropriate counterfactual. As Heckman & Smith (1999) explain, the key issue in constructing

the appropriate counterfactual is whether pre-treatment (i.e., pre-acquisition) dips in earnings are transient or persistent. If the decline in earnings prior to acquisition is transient, then a pre/post comparison of wages will overstate the effect of MNE, whereas if they are persistent reductions in earnings, the pre/post comparison will understate the impact MNEs have on worker-level wages.

There are several facts that suggest that the observed worker-level dip in wages prior to acquisition is persistent. Postel-Vinay & Turon (2010) show that even if firm-level productivity shocks are transitory, the resulting worker-level wage shocks are persistent. They argue that even transitory productivity shocks can give firms a credible threat to terminate the workers' employment, which allows the firm to renegotiate wages downward, thereby generating a persistent wage shock. Similarly, Lise et al. (2013) show how persistent firm-level productivity shocks induce renegotiation of long-term contracts, and thus generate persistent wage dynamics. It is also useful to note that the evidence confirms that firm-level productivities are highly persistent and evolve through time as a random walk in our sample; the coefficient of a regression of the contemporaneous TFP on lagged TFP is 1.01.

We take full advantage of administrative data that links employees to their employer, which allows us to also control for a variety of worker-level characteristics. Smeets et al. (2012) confirm that the attributes of employees do change substantially following acquisition. However, in addition to persistent reductions in wages prior to domestic firms becoming MNEs, negative productivity shocks among firms induce distinct changes in workforce composition during the pre-acquisition period; see Table 1. Prior evidence also suggests that such concerns are quantitatively important, as target firms exhibit significantly higher worker separation rates before foreign takeover than observed in the years after to acquisition. (Hijzen et al., 2013).[7] Failing to account for any pre-acquisition changes in the workforce may also bias estimates of the multinational wage premium.

To avoid understating the multinational wage premium due to the persistent earnings dip and changes in workforce composition prior to foreign acquisition, we compare post-acquisition wages

[7]As a result, if one were to focus solely on workers that remain at the same firm as their employer switches to MNE status, the sample of workers will appear spuriously to have lower capabilities than is employed on average. Prior studies have taken several approaches to dealing with changes in workforce composition within MNEs. For example, Hijzen et al. (2013), Heyman et al. (2007) and, Huttunen (2007) focus exclusively on workers that remain employed at the same firm, even as they switch to MNE status. Alternatively, Martins (2011) and Andrews et al. (2010) focus exclusively on workers that switch between employment at MNEs and domestic firms. Our point here is that, regardless if one considers static or mobile workers employed at MNEs, at the time of acquisition the composition of the workforce is much different in the years prior to, and the years after, a firm becomes an MNE, and that these differences are likely to be non-random.

to the year just prior to acquisition. Specifically, let t denote the year of acquisition for each observation. To estimate the change in wages immediately following foreign acquisition, we estimate (1) using the years $y = t, t-1$ for each observation of workers employed at firms that are acquired. In this sense, our empirical strategy identifies the average treatment effect on the treated for workers employed at firms that switch to MNE status. However, we will also report estimates of the difference in wages in the year of acquisition, t, relative to several years prior ($t-2$ and $t-3$), and show how the worker-level wages systematically declines over the pre-acquisition period.

We are also interested in separating the short-run effect of MNEs on wages from the long-run effect, which may be the more policy relevant impact to consider. The long-run effect of MNE status may differ as acquirers make unobserved investments in the capabilities of target firms that subsequently increase worker marginal products. (Guadalupe et al., 2012) Indeed, even after accounting for heterogeneous worker and firm characteristics, Malchow-Moller et al. (2013) find that foreign firms exhibit faster wage growth. To separate the short- and long-run effects we estimate the change in wages from year $t-1$ to each year following acquisition individually; i.e., we separately estimate the differences in wages paid between (t) and $(t-1)$, $(t+1)$ and $(t-1)$, and then $(t+2)$ and $(t-1)$. A U-shaped pattern in worker-level wages is evidenced by a reduction in worker-level wages prior to acquisition, and increasing wages at MNEs across the post-acquisition period, which we will see looking across each of the separate specifications of time periods.[8]

Our preferred strategy includes sector-by-time fixed effects, σ_{sy}. While time period specific effects capture aggregate fluctuations in wages and multinational activity, the patterns in Figure 2 demonstrate that there is substantial heterogeneity, and often divergence, in year-to-year changes in multinational activity across sectors. Importantly, these sector-specific fluctuations in MNE activity may be correlated with inter-industry wage differentials, so that the omission of σ_{sy} would bias estimate of our key parameter of interest.

The remaining set of control variables in X_{ijsy} includes a rich set of characteristics for both individuals and firms suggested by previous literature. These include gender, age (and its squared

[8] An alternative strategy to account for persistent reductions in earnings prior to acquisition would be to employ a dynamic propensity score matching technique in order to control for pre-acquisition *changes* in target firm characteristics. We view our approach as more conservative in that the estimates of post-acquisition wages relative to the counterfactual downward trend in estimated earnings would be mechanically larger than the difference in post-acquisition wages relative to our counterfactual wage level observed in year $t-1$. In this sense, our results represent a lower bound estimate on the wage differences at MNEs. Moreover, our empirical strategy does not rely on correctly specifying how changes in target firm characteristics both impact wages and promote selection into MNE status.

value) and a dummy indicating the skill level of each worker's occupation. The detailed information about the location of workers' employment allows us to also control for the spatial distribution of wages across regions within a country using regional fixed effects. The regional fixed effects control for unobservable local labor market conditions that might have influence wage dynamics. We also observe workers' occupation within a particular job spell, which provides better information about the skill level employment than the fixed education level of the worker.

On the firm side, it is well-known that high productivity firms pay higher wages. In addition, there is evidence from inbound foreign investment flows that high productivity firms are more likely to be acquired by MNEs; see evidence across several countries in Ramondo (2009), Arnold & Javorcik (2009), Criscuolo & Martin (2009), and Guadalupe et al. (2012). Thus, we include a measure of firm-level TFP in X_{ijsy}. Besides firm-level productivity we include observed capital intensity, and an export status dummy for each firm. Table 1, as well as prior evidence, show that parent companies alter the skill composition of the workforce after acquisition. To account for this we include a measure of overall skill intensity at a firm, in addition to the observed skill level of each worker's occupation.

4 Data

Our dataset is comprised of information from several confidential sources covering French firms and workers. First, the DADS is an administrative dataset by which employers communicate information to tax authorities and various social security organizations regarding the annual wages of their employees. Any legal entity established in France that pays wages must report to the DADS, with the only exception being for the employment of household or domestic staff. Each plant delivers a form, which includes all employees, regardless of the amount of compensation that was paid to them in the year. In addition to information about net wages, gross wages and employer and employee social security contributions, the DADS reports information on individual characteristics such as age, gender, occupation, sector, region of employment. Information on benefits-in-kind is available for a smaller sample of employees within the DADS. It is reported in a separate file called the DADS *panel* that covers all employees born in October. All employers are required to disclose the value and specific purpose of the in-kind payments made to each worker. Benefits-in-

kind include for instance the private use of a company car, free or subsidized accommodation and preferential loans, allowances for lunch, travel, and communication tools such as phones, computers, internet, etc.

Second, we identify firms involved in a merger or acquisition using the "extended' LIFI (LIaison FInancière) dataset, which has information on the ownership and nationality of the parent company of firms located in France. Each plant in France has a unique 12-digit identifier, which is subsumed by its 9-digit firm identifier. We use the firm identifier to construct our sample, and indicate a firm as being foreign owned if a foreign group controls more than 50% of its shares or voting rights; the results are insensitive to the specified cutoff for an acquisition to take place, as the median share of voting shares owned by a group is 99%. We use LIFI to identify the year of a takeover and the foreign status of the acquiring firm, and define a firm as having undergone a foreign M&A if the owner in year t is foreign, while the owner in year $t-1$ is French.

Finally, we obtain information about firm-level characteristics from the EAE (Enquête Annuelle d'Entreprise) annual business survey dataset. The survey has information on firms with more than 25 employees. Importantly, the EAE dataset is exhaustive above this reporting threshold. EAE contains information from firms' income statements and balance sheets, and also reports the location of firms in France and their 4-digit sector of main activity. In order to compute total factor productivity (TFP), we restrict the data to the manufacturing sectors. We compute firm-level TFP using the procedure described by Olley & Pakes (1996), controlling for the simultaneity bias that arises from the endogeneity of a firm's input selection.

Matching of these data is facilitated by the use of the unique administrative firm identifier. While these data have been used frequently in prior literature, there is a subtle reporting issue that is particularly relevant to our purposes. While the EAE reports information for all firms that *operate* in France, the DADS reports information for all workers at firms that are *registered* in France. Since MNEs may choose to alter the categorized nationality of a new French affiliate, there are some firms for which we observe workers only in the pre- or post-acquisition periods. Note that we obtain the same results, with a U-shaped pattern in wages surrounding acquisition and quantitatively similar increases in wages following acquisition, regardless if we include worker-level observations from firms that switch their categorization. Our sample covers the years 2002-2007. Table 2 contains summary statistics for each of the key variables in our analysis.

5 Results

In this section we present our estimates of the wage dynamics for workers surrounding the time that employers switch from domestic to MNE status via cross-border M&A. We begin by estimating equation (1) to examine post-acquisition wage dynamics, comparing MNE wages in the year prior to domestic firms being acquired by foreign multinationals ($t-1$) sequentially to later years (t, $t+1$, and $t+2$). Next, we examine the wage dynamics for workers in the years prior to their employer becoming an MNE, and highlight the U-shaped pattern exhibited in worker-level wages. Finally, we examine worker compensation including benefits in-kind surrounding acquisition activity.

5.1 The Short-Run and Long-Run Effects of MNEs on Wages

Table 3 presents the results from our preferred empirical strategy across three different time spans: the short-run corresponding to the first year as an MNE (t), the medium-run corresponding to second year as an MNE following acquisition ($t+1$), and the long-run effect corresponding to third year as an MNE following acquisition ($t+2$). Standard errors are in parenthesis, which are estimated via bootstrapping. All specifications include include region and sector-by-year fixed effects.

For the first year that a firm has MNE status, Column (1) indicates that foreign ownership is immediately associated with higher wages; without any controlling for firm or worker characteristics the simple correlation in between MNE status and wages is 0.018. As Egger & Kreickemeier (2013) and Malchow-Moller et al. (2013) argue, the firm-level wage premium paid to workers employed at MNEs can be attributed to both the access to foreign markets that these firm grant, as well as the superior attributes of firms that select into MNE status. When we introduce the set of firm-level controls to account for other attributes in Column (2), the coefficient on the MNE variable rises to 0.036. In other words, MNEs increase firm-level wages by 3.6% on average with the first year of switching from being a domestic firm, and this effect is significant at one percent level. This increase in firm-level wages is consistent with the large literature extolling the benefits of MNE status; see Aitken et al. (1996), Lipsey & Sjöholm (2004), and Budd et al. (2005). Note that this firm-level effect ignores differences in workforce composition as firms become MNEs, which may confound their estimated impact on worker-level wages.

Column (3) is our preferred estimate of the short-run effect with the full set of worker and firm controls. We find that MNEs increase wages to workers by 4.8% on average. The estimated short-run impact is significant at the one percent level. Both the significance and the magnitude of this estimate are distinct. Prior studies that exploit matched employer-employee data have generally found insignificant effects of MNEs after controlling for workforce characteristics. Moreover, the point estimates of the MNE wage premium in these studies typically lie between 1% to 3%, even several years after a firm ascends to multinational status: see for example Huttunen (2007), and Hijzen et al. (2013). Some prior evidence even points to a negative wage premium paid by MNEs: see Heyman et al. (2007). Our empirical strategy differs in that we control explicitly for sector-specific oscillations in MNE activity over time, as well as persistent shocks to earnings prior to a domestic firm being acquired by foreign multinational, which reveals an immediate effect of MNEs on worker level wages of nearly 5%, which is significant at high degrees of confidence.

It is worth nothing that looking across columns (1)-(3), the coefficient on MNE status becomes larger as we introduce firm- and worker-level controls, rather than becoming smaller. This fact indicates that, near the time of acquisition, the characteristics of firms that become MNEs, as well as the characteristics of workers employed at firms that transition to being MNEs, are both negatively correlated with relative wage levels. Hence these estimates provide evidence consistent with firms suffering negative shocks in performance, and their workforce being non-randomly selected in the years just prior to acquisition.

The short-run effects in Column (3) may understate the total effects MNEs have on wages. In the medium and long run, the positive effect may continue several years after acquisition as firms might adjust to new investments in productive capabilities. Firm-level frictions in the wage setting process as could also delay potential increases in earnings.[9] Columns (4)-(6) of Table 3 present results for the changes in payments to workers two years after a French domestic firm is acquired by a foreign MNE. Column (4) indicates that foreign acquisition by an MNE has a positive correlation with wages of 0.027 in the second year as an MNE. Columns (5) & (6) sequentially introduce firm and worker-level control variables. Including firm-level controls we find that MNE status is associated with 6.3% higher wages. Our preferred estimate of the MNE wage premium in medium-

[9] Malchow-Moller et al. (2013) provide some evidence that MNEs exhibit faster wage growth in addition to higher wage levels. Relatedly, Huttunen (2007) does find some evidence that foreign acquisition increases wages among high skill workers several years after acquisition, despite little or no effect detected immediately.

term with both worker and firm-level controls in Column (6) is 0.06, which is significant at the one percent level. This 6.0% increase in wages after two years suggests that MNEs may continue to increase wages beyond their initial impact; however we note that the estimated 6.0% effect in the second year as an MNE does not differ statistically from the estimated immediate effect of 4.8%. The difference between the two point estimates corresponds to approximately one standard error.

In Columns (7)-(9) of Table 3, we consider the increase in wages realized by workers employed by a firm in its third year as an MNE. Column (7) indicates that there is much higher correlation between MNE status and wages after three years; 0.115 as opposed to 0.027 or 0.018 in the medium and short-run, respectively. Even after we introduce firm and worker characteristics the long-run impact of MNEs on wages appears larger than the shorter term impacts. Our preferred estimate in Column (9) suggests that MNEs pay a wage premium of 7.8% three years after the switch from being a domestic firm, and this estimate is significant at the one percent level. By way of comparison, the estimated long-run impact is more than 60% larger than the immediate effect of joining an MNE. The estimated long-run impact of 7.8% is also statistically different from the point estimate of the increased wages realized in the first year as an MNE; by way of comparison the long-run impact is more than two standard errors away from the estimated short-run effect. Moreover, the magnitude of the effect in Column (9), relative to the simple correlation between wages and MNE status in Column (7), indicates that a significant majority of the observed MNE wage premium is due to access to global markets, rather than selection effects.

Across each time horizon, we find that the estimated coefficients on worker and firm characteristics corresponds with prior evidence. Male workers earn between 20% and 27.5% higher wages than female workers. Job tenure is associated with higher wages, albeit with decreasing returns. Workers classified in low-skill occupation categories earn relatively less. Conditional on worker characteristics we also see that firms which use skill intensive and capital intensive production methods tend to pay higher relatively higher wages. One potentially surprising finding is that, although exporting firms tend to pay higher wages in the short- and medium-term, being an exporter in the third year as an MNE are associated with lower wages. However, the endogeneity surrounding the acquisition of firms with pre-existing export networks, as evidenced in Blonigen et al. (2013), as well as investments in export capacity after acquisition, documented by Guadalupe et al. (2012), suggests that the coefficient on the export indicator should not be interpreted as a causal effect.

5.2 Pre-Acquisition Wage Dynamics

The positive and significant wage premium estimated in the previous section for both the short and long-run contrasts with prior evidence that MNEs have negligible impacts on worker wages. We have argued that standard DID empirical strategies which examine changes in wages as domestic firms are acquired by foreign multinationals may be downward biased estimates of the MNE wage premium because they fail to account for persistent reductions in wages during pre-treatment (i.e., pre-acquisition) periods. In this section we elucidate this source of bias by comparing the wages paid by MNEs to several years prior to a firm being acquired by a foreign firm.

Table 4 reports the results from estimating the wage regression in (1), comparing the year of a domestic firm is acquired by a foreign MNE to the two and three years *prior* to acquisition; i.e., we estimate the difference between wages in year t and years $t-2$ and $t-3$, separately. Contrary to the increase in wages observed after a firm becomes an MNE reported in the last section, Column (1) indicates that wages paid in the first year that a firm becomes an MNE are negatively correlated with wage levels two years before; the correlation is -0.075. Additionally, Column (2) reports that firm-level wages in the first-year after acquisition are 5.7% lower on average than the same firm paid two years prior. Even with additional controls for worker characteristics, Column (3) indicates that, on average, wages paid to similar workers are 3.2% *lower* in the first year a firm becomes an MNE than they were two years before. This estimated reduction in wages prior to acquisition is significant at the five percent level.

Columns (4)-(6) of Table 4 report estimates of the difference in wages between the first year a firm joins an MNEs and wages paid three years earlier. The reduction in wages prior to acquisition is even more pronounced with the additional lagged year. Column (6) is the preferred estimate which includes both worker and firm controls, and indicates that wages in the first year of a firm becomes an MNE are 7.9% *lower* than they were three years prior to acquisition by a foreign MNE. The estimated reduction in wages across this time span is significant at the one percent level.

The results in Table 4 demonstrate that workers that are employed at the firms that are acquired by foreign MNEs have recently suffered significant wage reductions. To illustrate these systematic patterns in wage changes across different time horizons, Figure 4 plots the coefficient estimates from our preferred specifications with both worker and firm controls for the various time spans

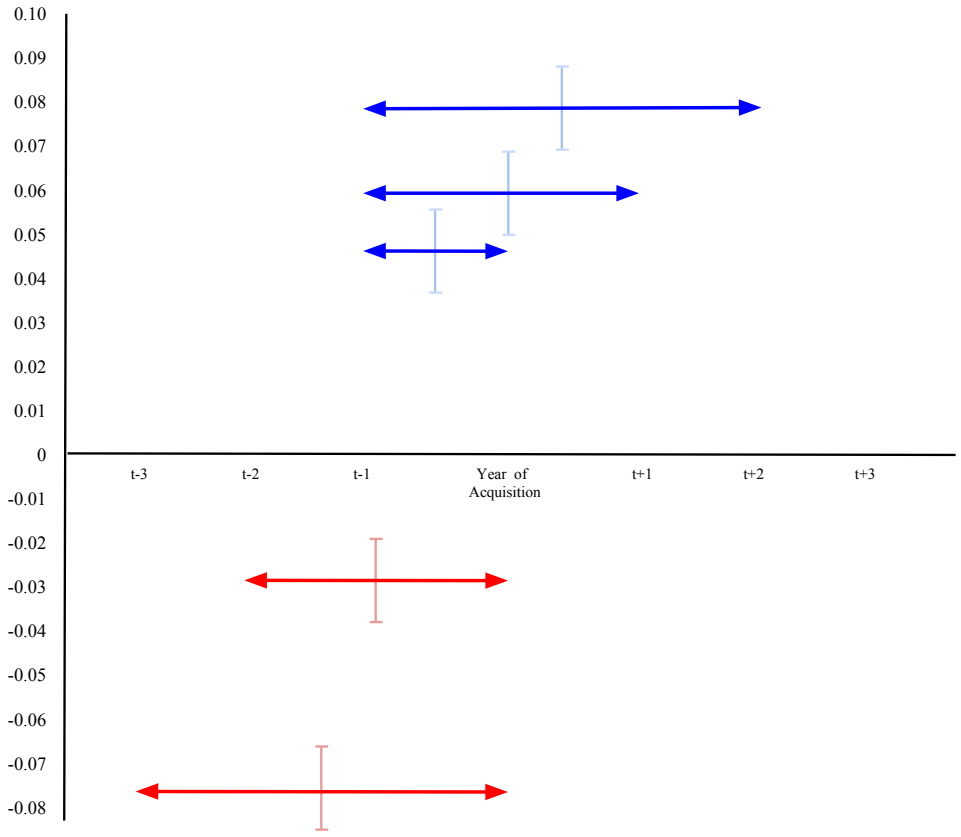

Figure 4: Estimated Change in Wages Across Various Pre- and Post- Acquisition Time Spans
Notes: The length of each line indicates the time span over which the change in wages is estimated, while the vertical position of the line indicates the actual estimated change in wages. The vertical bar on each line represents standard errors. All estimates are from our preferred specifications in Tables 3 & 4, with a full set of controls.

reported in Tables 3 and 4. If foreign ownership, or foreign takeovers of domestic firms, truly had no wage effects, then we should expect to see that there is little difference in wages regardless if we consider the two and three years prior to acquisition, or if we consider the two and three years after acquisition. In other words, a true 'null' effect of MNEs on worker-level wages would be illustrated in Figure 4 by estimates that lie on or near the horizontal axis. Instead, each of the estimates differ substantially from zero. Moreover, the systematic reductions in wage levels that occur prior to acquisition confound simple DID estimates of the MNE wage premium, and may have led several previous studies to underestimate the effects of MNE status on wages that we observe after firms switch from domestic status.

5.3 Wages and in-kind transfers

An important distinction exists between worker-level wages and earnings that include benefits-in-kind, such as the use of a vehicle, expenses for work-related clothing, mobile phone services, etc. In this section we use a unique feature from French administrative data sources providing information on in-kind payments for the October-birth cohort. This allows us to examine the extent to which MNEs offer a different structure of worker compensation relative to domestic firms, in addition to the differences in wages reported previously. Table 5 reports the results of our preferred specifications, including a full set of employee and firm controls, as well as region and sector-by-year fixed effects, for the years before and after foreign acquisition. We continue to report in parentheses standard errors estimated via bootstrapping.

The dependent variable in Table 5 is the sum of benefits in-kind and net wages. In Column (1) of we observe a very steep decline in worker compensation inclusive of in-kind payments in the year preceding acquisition by a foreign MNE. Specifically, worker compensation including benefits in-kind falls by approximately 11.4%. The corresponding estimate from Column (3) in Table 4 indicates a reduction in net wages of only 3.2%. The respective estimates for the decline in wages and compensation including wages and benefits in-kind are several standard errors apart from one another, indicating that firms indeed significantly alter the composition of payments to workers in advance of acquisition activity.

Following acquisition, Columns (2)-(4) of Table 5 indicate that the rebound for benefits in-kind is not as quick, nor as robust, as that estimated for wages alone. In the first year as an MNE, combined wages and benefits in-kind do not differ significantly on average from the that earned by workers in the year prior to acquisition. In the second and third years that a firm is part of an MNE, estimated wage and in-kind compensation does appear to increase; the point estimates are 0.071 and 0.092 respectively. These positive coefficients in the years after acquisition indicate a upward swing in compensation following the steep decline in benefits-in kind prior to the domestic firm switching to foreign ownership, consistent with the U-shaped pattern observed in worker-level wages. However, the upswing in compensation including both wages and benefits in-kind for later years is only marginally significant.[10]

[10]Recall that information on in-kind benefits is available only for the October-birth cohort of French workers, which limits power in estimation.

6 Sector-Specific Dynamics in MNE Activity and Wages

Figure 2 demonstrates that there is substantial heterogeneity across sectors in the average volume, the variation, and the growth of multinational activity over time. If these sector-specific dynamics are correlated with inter-industry wage differentials, then empirical specifications that fail to account for sector specific effects could lead to substantially biased estimates. Moreover, the propensity for multinational activity to occur in merger waves makes this source of bias generally difficult to sign for arbitrary sample periods. Across our entire sample period 2002-2007 there is an upward trend in M&A activity, led principally by a few sectors. If these sectors are those that have relatively higher wages, then specifications which omit sector-specific effects will be upward biased. However, if the sample were restricted to the period of 1997-2004 (for example), then we would observe a downward trend in M&A activity that is particularly driven by the same high wage sectors; in this case, the omission of sector-specific effects would lead to downward biased estimates of the multinational wage premium.[11]

Table 6 reports estimates from the wage regression in (1) for both the short and long-run including sector fixed effects and year effects, rather than the preferred sector-by-year effects. Across all time horizons, the coefficient on the MNE variable is significant at the one percent level. The estimated short-run effect reported in Column (3), which includes a full set of worker and firm-level controls, is 0.052. This estimate is quite close to the preferred estimate of the short-run effect of 0.048 from the corresponding specification in Table 3. Moving to the second year after a firm switches to being an MNE we find that, for specifications in Column (6) with a full set of controls but omitted sector-by-year effects, MNEs are associated with wages that are approximately 6.5% higher. By comparison, the preferred estimate with sector-by-year effects for the corresponding specification is a 6.0% increase in wages. Finally, in the the long-run, estimates which omit sector-specific effects suggest that MNEs are associated with 10.9% higher wages after the third year of acquisition (Column 9), while the preferred estimate with sector-by-year effects from Column (9) in Table 3 is only a 7.8% MNE wage premium. Importantly, the estimated long-run effect

[11] The differences in the direction of the bias generated by omitting sector-specific dynamics across different sample periods is important in this context given that previous studies have typically focused on periods of contraction in cross-border M&A activity (typically, 1997-2004), whereas our sample period covers an expansion period in M&A activity. Although we report a strong upward bias, the opposite would be expected in estimates obtained across periods of contraction, as in Hijzen et al. (2013) and Heyman et al. (2007).

for specifications that omit information about sector-specific dynamics are nearly four standard errors larger than the preferred estimate in Table 3. In other words, the results in Table 6 suggests that ignoring sector-specific dynamics when estimating the MNE wage premium leads to negligible biases in the short and medium time horizons, but economically substantial biases in the long-run.

The omission of sector-specific dynamics may also confound estimates of pre-acquisition wage dynamics. Table 7 reports the estimates of the changes in wages from two and three years prior to acquisition, respectively. These estimates correspond to the specifications in Table 4, but include only sector and year effects individually. Column (3) includes all worker and firm-level control variables, and the coefficient on the MNE variable is -0.037, which is significant at the one percent level. This estimate corresponds closely to the estimate of -0.032 obtained when sector-by-time effects are included in Table 4. However, the estimates look much with an additional lag. When sector-specific dynamics are omitted, worker-level earnings three prior to acquisition are indistinguishable from those paid in the first year that a firm becomes an MNE. The point estimate for the three-year lag is -0.013, as compared to the -0.079 obtained when sector-by-year fixed effects are included. By way of comparison, the point estimates are more that four standard errors apart. As we found with the post-acquisition wage changes, there appears to be substantial upward bias generated as on considers time periods further away from the year a firm switches to MNE status.

The upshot from the estimates in Tables 6 and 7 is that worker-level wages still exhibit a distinct U-shaped dynamic pattern, with a substantial reduction in earnings observed prior their domestic employer being acquired by a foreign firm, and increasing for several years after. However, the level of wages observed across these years is spuriously higher when sector-specific dynamics are omitted from the analysis, especially several years before and after acquisition.

7 Conclusion

Cross-border investment by MNEs is known to respond to several national and international policies; in fact, the key purpose many of globalization policies is to facilitate incoming investment by foreign multinationals. Most of the prior evidence has suggested individual workers do not necessarily benefit from increased MNE activity that result from these policies, as the greater entry for foreign firms appeared to have negligible impacts on worker-level wages. The results that we have

presented here indicate that the specific wage dynamics of workers before their employer becomes an MNE masks the true benefits in labor earnings. Contrary to prior evidence that MNEs do not increase worker-level wages, we find that globalization polices that promote cross-border investment can have a economically substantial impact on worker-level wages in both the short- and long-run.

We have documented that the employees of MNEs face a distinct U-shaped pattern in earnings as their employer switches from domestic to MNE status, such that wages decline for several years before being acquired by an MNE, and increase for several years afterward. The pre-acquisition earnings dip is significant in both its duration and its magnitude, such that workers earn almost 8% less in the year that their employer is first acquired by a foreign MNE than they did three years prior. In addition to wage declines, our evidence showed that workers employed at firms that become MNEs face substantial reduction in benefits in-kind, and that these reductions were on average larger than for wages. Following cross-border acquisition, we find that employees realize an increase their wages by 4.8% within one year, and by 7.8% in the third year after acquisition.

Finally, we have shown that inter-industry wage differentials are correlated with industry-specific dynamics in MNE activities, so that omitting disaggregated information about cross-border investment activity will lead to spurious estimates of the multinational wage premium. Cross-border investment flows oscillate according to merger wages, with ebbs and flows in MNE activity that vary across sectors. Accounting for this industry-specific variation over time is necessary to accurately identify the effects of MNEs on wages. Moreover, the fact that cross-border investment flows exhibit a wave pattern means that the direction of the bias generated by omitting industry-specific time effects will depend on whether the sample is drawn from a contraction or expansion period. The difficulty in signing the direction of this bias generally across different time spans should raise caution when trying to compare prior estimates obtained from different sample periods, and should deter future studies from omitting information about sector-specific dynamics in MNE activity.

One of our goals in this paper is to motivate further research into the mechanisms through which MNEs increase wages for workers, and the labor market structure that limits the potential of this multinational wage premium to be arbitraged away. Likely candidates may be the access to internal finance markets within MNEs or the potential to better screen workers on unobservable characteristics. Despite the general view from prior empirical literature, our results indicate that there is indeed a multinational wage premium that warrants further study.

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Table 2: Descriptive Statistics

	Mean	Standard Deviation	Min	Max
MNE	0.162	0.368	0	1
TFP shock	0.003	0.125	-6.934	1.517
TFP shock	2.898	0.850	-2.566	6.958
Exporter	0.860	0.346	0	1
Capital Intensity	3.637	1.061	-6.171	8.662
Skill Intensity	0.429	0.227	0	1
Male	0.698	0.209	0	1
Unskilled	0.179	0.210	0	1
Age	39.69	3.969	17	81.42
Age sq	1696	320.0	289	6655

Table 3: Short- & Long-Run Wage Effects of Multinational Firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	First Year as MNE			Second Year as MNE			Third Year as MNE		
MNE	0.018**	0.036***	0.048***	0.027**	0.063***	0.060***	0.115***	0.114***	0.078***
	(0.009)	(0.011)	(0.010)	(0.011)	(0.012)	(0.011)	(0.019)	(0.018)	(0.013)
TFP		0.038***	0.066***		-0.040***	0.015*		0.097***	0.131***
		(0.007)	(0.006)		(0.007)	(0.008)		(0.010)	(0.009)
Exporter		0.102*	0.094**		1.617***	1.078***		-0.104**	-0.167***
		(0.059)	(0.045)		(0.064)	(0.052)		(0.043)	(0.037)
Capital Intensity		0.049***	0.021***		0.050***	-0.003		0.008	-0.005
		(0.005)	(0.005)		(0.006)	(0.005)		(0.005)	(0.006)
Skill Intensity		0.353***	0.177***		0.290***	0.085***		0.237***	0.145***
		(0.027)	(0.029)		(0.028)	(0.032)		(0.028)	(0.029)
Gender			0.275***			0.205***			0.235***
			(0.007)			(0.008)			(0.007)
Unskilled			-0.394***			-0.403***			-0.399***
			(0.007)			(0.008)			(0.011)
Age			0.219***			0.223***			0.220***
			(0.003)			(0.003)			(0.003)
Age^2			-0.002***			-0.002***			-0.002***
			(0.000)			(0.000)			(0.000)
FE r,sxy	98,338	98,338	98,338	112,028	112,028	112,028	99,994	99,994	99,994
	0.060	0.062	0.261	0.164	0.187	0.364	0.094	0.096	0.278

All Specifications include Sector-by-Year Fixed Effects. Bootstrapped standard errors in parentheses.

*** $p < 0,01; ** p < 0,05; *p < 0,1$.

Table 4: Wage Dynamics Prior to Domestic Firm Acquisition by MNE

	(1)	(2)	(3)	(1)	(2)	(3)
	(t)-(t-2)			**(t)-(t-3)**		
MNE	-0.075***	-0.057***	-0.032**	-0.054***	-0.100***	-0.079***
	(0.012)	(0.016)	(0.014)	(0.016)	(0.019)	(0.015)
TFP		-0.049***	0.001		-0.009	0.034***
		(0.009)	(0.008)		(0.010)	(0.010)
Exporter		0.188***	0.205***		-0.016	0.042
		(0.042)	(0.040)		(0.073)	(0.054)
Capital Intensity		0.117***	0.066***		0.211***	0.113***
		(0.006)	(0.006)		(0.011)	(0.009)
Skill Intensity		0.312***	0.057*		0.402***	0.126***
		(0.032)	(0.031)		(0.035)	(0.033)
Male			0.259***			0.253***
			(0.008)			(0.009)
Unskilled			-0.399***			-0.403***
			(0.009)			(0.011)
Age			0.203***			0.211***
			(0.004)			(0.003)
Age^2			-0.002***			-0.002***
			(0.000)			(0.000)
Observations	68,586	68,586	68,586	59,443	59,443	59,443
R-squared	0.046	0.052	0.236	0.054	0.063	0.249

All Specifications include Sector-by-Year Fixed Effects. Bootstrapped standard errors in parentheses.

*** $p < 0,01; * * p < 0,05; * p < 0,1$.

Table 5: Total Earnings Dynamics Surrounding Acquisition by MNE

	(1)	(2)	(3)	(4)
	Pre-Acquisition Period (t)-(t-2)	**First Year as MNE (t)-(t-1)**	**Second Year as MNE (t+1)-(t-1)**	**Third Year as MNE (t+2)-(t-1)**
MNE	-0.114***	0.012	0.071*	0.092*
	(0.042)	(0.033)	(0.036)	(0.051)
TFP	-0.036	0.059**	0.077***	0.063**
	(0.030)	(0.024)	(0.024)	(0.030)
Exporter	0.010	-0.042	0.206	-0.149
	(0.101)	(0.115)	(0.126)	(0.134)
Capital Intensity	0.039*	0.042*	0.028	0.052**
	(0.022)	(0.022)	(0.020)	(0.023)
Skill Intensity	0.206**	0.400***	0.388***	0.571***
	(0.089)	(0.082)	(0.077)	(0.085)
Gender	0.228***	0.269***	0.258***	0.196***
	(0.030)	(0.028)	(0.021)	(0.021)
Unskilled	-0.322***	-0.272***	-0.223***	-0.291***
	(0.030)	(0.024)	(0.024)	(0.030)
Age	0.190***	0.196***	0.197***	0.179***
	(0.011)	(0.008)	(0.007)	(0.009)
Age^2	-0.002***	-0.002***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	5,411	7,464	8,432	7,357
R-squared	0.272	0.272	0.300	0.282

All Specifications include Sector-by-Year Fixed Effects. Bootstrapped standard errors in parentheses.

*** $p < 0,01; * * p < 0,05; * p < 0,1$.

Table 6: Short- & Long-Run Wage Effects of Multinational Firms
Ignoring Sector-Specific Dynamics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	First Year as MNE			Second Year as MNE			Third Year as MNE		
MNE	-0.004	0.014	0.052***	0.094***	0.056***	0.065***	0.112***	0.119***	0.109***
	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.007)	(0.011)	(0.009)	(0.008)
TFP		0.015***	0.049***		0.022***	0.064***		0.098***	0.120***
		(0.005)	(0.006)		(0.007)	(0.005)		(0.006)	(0.006)
Exporter		0.047	0.034		1.654***	1.180***		-0.116***	-0.142***
		(0.045)	(0.034)		(0.054)	(0.034)		(0.040)	(0.033)
Capital Intensity		0.058***	0.022***		0.076***	0.028***		0.029***	0.022***
		(0.006)	(0.005)		(0.005)	(0.005)		(0.006)	(0.006)
Skill Intensity		0.560***	0.325***		0.332***	0.120***		0.279***	0.179***
		(0.030)	(0.022)		(0.028)	(0.025)		(0.028)	(0.024)
Male			0.278***			0.206***			0.234***
			(0.007)			(0.006)			(0.007)
Unskilled			-0.383***			-0.415***			-0.407***
			(0.008)			(0.008)			(0.012)
Age			0.219***			0.224***			0.221***
			(0.002)			(0.002)			(0.003)
Age^2			-0.002***			-0.002***			-0.002***
			(0.000)			(0.000)			(0.000)
Observations	98,338	98,338	98,338	112,028	112,028	112,028	99,994	99,994	99,994
R-squared	0.045	0.051	0.252	0.120	0.161	0.344	0.078	0.083	0.269

All Specifications include Sector & Year Fixed Effects. Bootstrapped standard errors in parentheses.

*** $p < 0,01; * * p < 0,05; * p < 0,1$.

Table 7: Wage Dynamics Prior to Domestic Firm Acquisition by MNE
Ignoring Sector-Specific Dynamics

	(1)	(2)	(3)	(1)	(2)	(3)
	(t)-(t-2)			**(t)-(t-3)**		
MNE	-0.096***	-0.100***	-0.037***	-0.116***	-0.099***	-0.013
	(0.012)	(0.014)	(0.013)	(0.015)	(0.013)	(0.014)
TFP		-0.012*	0.034***		-0.034***	0.031***
		(0.007)	(0.008)		(0.008)	(0.007)
Exporter		0.087**	0.132***		-0.081	-0.046
		(0.035)	(0.035)		(0.055)	(0.045)
Capital Intensity		0.114***	0.057***		0.152***	0.072***
		(0.006)	(0.006)		(0.009)	(0.007)
Skill Intensity		0.419***	0.159***		0.643***	0.281***
		(0.032)	(0.026)		(0.033)	(0.028)
Male			0.268***			0.261***
			(0.007)			(0.007)
Unskilled			-0.398***			-0.398***
			(0.011)			(0.011)
Age			0.204***			0.212***
			(0.003)			(0.003)
Age^2			-0.002***			-0.002***
			(0.000)			(0.000)
Observations	68,586	68,586	68,586	59,443	59,443	59,443
R-squared	0.034	0.042	0.231	0.039	0.051	0.240

All Specifications include Sector & Year Fixed Effects. Bootstrapped standard errors in parentheses.

*** $p < 0,01; * * p < 0,05; * p < 0,1$.