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著者(英)	Eric D. Ramstetter
journal or publication title	AGI Working Paper Series
volume	2016-05
page range	1-28
year	2016-03
URL	http://id.nii.ac.jp/1270/00000102/

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Working Paper Series Vol. 2016-05

March 2016

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Abstract

This paper examines how foreign multinational enterprises (MNEs) have grown in Vietnam's manufacturing and trade industries, and tries to shed light on how MNE takeovers of Vietnamese firms have affected employment, and wages between 2000 and 2012. Although the scale of MNE activity has been substantial and grown in recent years, there are substantial discrepancies in measures of MNE shares from alternative sources and uncertainty over the actual share of MNEs in Vietnamese production or employment. On the other hand, the number of MNE takeovers has been very small and they appear to have played only a small role in changes of MNE shares. Rather, changes in MNE shares have resulted primarily from the entry and exit MNEs and changes in the scale of MNE activity.

JEL Classification Codes: F23, J31, L60, O53

Keywords: Multinational enterprises, state-owned enterprises, ownership, employment, wages

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1. Introduction

Many previous studies and compilations of official statistics have documented the rapid growth of foreign multinational enterprises (MNEs) in Vietnam after the substantial reforms (*Doi Moi*) that began in 1986 and stabilization of the economy in the mid-1990s. After firm-level data from Vietnam's relatively comprehensive, annual enterprise surveys for 2000 forward became available, studies of MNEs and how they compared to or affected local firms performance also became numerous. For example, Athukorala and Tien (2012) and Ramstetter and Phan (2013) provide evidence that MNEs, especially exporting MNEs, tend to have relatively high productivity compared to local firms, but evidence was relatively weak in several industry groups. The latter study suggests that productivity spillovers from MNEs to local firms are generally weak, while Le and Pomfret (2011) indicate that only vertical spillovers are significant and Truong et al (2015) provide evidence that spillovers were relatively large in industries with low effective rates of protection and low shares of wholly foreign MNEs. Evidence on wage effects is somewhat stronger, suggesting that MNEs tend to pay relatively high wages even after accounting for numerous other differences in firm characteristics as well as worker education and occupation (Nguyen 2015, Nguyen and Ramstetter 2015a). However, there is also evidence that MNE-local wage differentials were largest for a relatively few number of highly skilled workers (Nguyen and Ramstetter 2015b).

Another set of interesting questions can be asked about how MNE takeovers affect target firms. Because MNE shares of firm turnover and employment have grown rapidly for most of the last two decades, we assumed that MNE takeovers had been relatively common, as they were in Indonesia after the large trade reforms of 1986 and in China after the run up to its WTO accession in 2001. Substantial policy changes in Vietnam reinforced this perception because the promulgation of the Enterprise Law in late 2000 and its subsequent implementation (Van Arkadie and Mallon 2003), reforms related to the implementation of the

Bilateral Trade Agreement between Vietnam and the United States in 2001 and the implementation of the ASEAN Free Trade Agreement in 2005, and further reforms related to Vietnam's own WTO accession in late 2006 all reduced previous biases against private ownership. Correspondingly, we thought that analyzing how MNE takeovers affect wages or employment in target would facilitate better understanding Vietnam's economy.

However, as we will document below, takeovers by MNEs appear to have been extremely rare during 2000-2012 in Vietnam. Not surprisingly, there were even fewer takeovers by state-owned enterprises, but somewhat more numerous takeovers by private firms. Another puzzle that emerges from comparison of the enterprise data and economy-wide estimates of GDP or employment surrounds the extent to which MNE shares have been growing and SOE or state shares have been falling, particularly the latter. Thus, after a brief review of the literature on the effects of MNE takeovers (Section 2), we first compare alternative estimates of MNE and SOE shares of Vietnam's economy and trends in those shares (Section 3). We then examine the data we have been able to compile on takeovers (Section 4) and offer some concluding remarks, focusing on the future research agenda (Section 5).

2. Literature Review

Theory and empirical evidence suggest MNEs are likely to possess relatively large amounts of generally knowledge-based, intangible, firm-specific assets related to production technology, marketing, and entrepreneurship that should make these firms more productive than non-MNEs (Buckley and Casson 1992; Casson 1987; Caves 2007; Dunning 1993; Rugman 1980, 1985). This is reflected by larger firm size, higher factor productivity and factor returns, and/or higher capital or technology intensity. If labor productivity is higher in MNEs than in non-MNEs as often assumed, wages should also be higher, and MNE takeovers should also lead to higher wages. On the other hand, the effects of MNE ownership on

employment levels or changes in employment are ambiguous.

In contrast, economists since Adam Smith have long assumed that SOEs will tend to be more inefficient than private firms because SOE managers have weaker incentives to minimize costs than managers of private firms. If this inefficiency leads to low labor productivity, then SOEs are likely to pay relatively low wages. In contrast, previous empirical evidence suggests that SOEs often pay relatively high wages and have relatively high productivity, both in Vietnam (Ramstetter and Phan 2007, 2013; Nguyen 2015; Nguyen and Ramstetter 2015a, 2015b) and elsewhere (Brown et al., 2004, 2005; Djankov and Murrell 2002; Megginson, and Netter 2001). Governments often choose to establish SOEs in relatively high productivity, high wage industries such as steel, this is an important reason that SOEs may have appear to have relatively high productivity or wages in samples covering several different industries. However, even within the steel industry, firm-level evidence suggests that SOEs or former SOEs were among the most efficient producers in China, Korea and Taiwan, for example (Ramstetter and Movshuk 2005).

Previous research on manufacturing firms in Vietnam (Nguyen 2015; Nguyen and Ramstetter 2015a, 2015b) and manufacturing plants in Indonesia (Lipsey and Sjöholm 2004a; Ramstetter and Narjoko 2013) and Malaysia (Ramstetter 2014) have provided strong evidence that multinational enterprises (MNEs) tend to pay relatively high wages, even after the educational background of workers, worker occupation, and other firm- or plant-level characteristics are controlled for. These studies also provide evidence that and MNE-local or MNE-private wage differentials were relatively large for high-wage, white-collar (non-production) workers in Indonesia and Vietnam. Hale and Long (2011) also found a similar pattern for a small sample of Chinese firms, but that foreign ownership had no effect on wages of relatively low-wage, ordinary workers.

Studies of Indonesian manufacturing plants Lipsey and Sjöholm (2002), Sjöholm and

Lipsey (2006), Lipsey et al. (2010) and a recent study of Chinese manufacturing firms by Wang and Wang (2015) are the only ones known to examine how changes in ownership affected wages and/or employment at the firm or plant level in developing economies. Descriptive statistics for Indonesian plants in 1975-1999 (Lipsey and Sjöholm 2002; Sjöholm and Lipsey 2006), first suggest that MNE takeovers tended to lead to higher wages or unchanged after private, manufacturing plants were taken over, but that MNEs did not target high-wage plants for takeover. Blue collar employment also tended to increase after takeover, but white collar employment generally declined.

On the other hand, fixed effects (FE) regressions suggested that MNE takeovers led to statistically significant increases in both wages and employment for both blue and white collar workers after accounting for plant characteristics such as size, input intensity, and energy intensity (Lipsey and Sjöholm 2002; Sjöholm and Lipsey 2006). Wage increases were larger for white collar workers but employment increases were larger for blue collar workers. Both takeover effects were relatively large after the drastic liberalization of Indonesian trade policy in 1985-1986 and varied substantially among specific industry groups. Propensity score matching (PSM) estimates also indicate that MNE takeovers led to employment growth, but small sample size made it impossible to examine differences among industries using this technique and PSM estimates of wage effects are not available (Lipsey et al. 2010).

Wang and Wang's (2015) study of Chinese manufacturing firms focuses more narrowly on PSM estimates comparing the effects of MNE takeovers with the effects of domestic takeovers in an attempt to "investigate the purified effect of foreign ownership" (p. 325). In contrast to our data on Vietnam, their data suggest there were a relatively very large number of MNE takeovers (an average of over 500 per year in 2000-2007, p. 329) and a much larger number of domestic takeovers of other domestic firms (an average of 3,834 per year). Their analyses suggest that MNE takeovers led to larger increases in output, employment, and

wages in target firms than did comparable domestic takeovers, but revealed no evidence of corresponding productivity improvements. Somewhat similarly, evidence that productivity is higher in manufacturing MNEs than in Vietnam's local firms (Ramstetter and Phan 2013) is substantially weaker than the aforementioned evidence than correspondingly evidence that MNEs tend to pay relatively high wages in Vietnam, especially when estimates are performed at the industry level.

3. MNE and SOE or State Shares of Vietnam's Economy

Ramstetter and Phan (2013, pp. 31-32) previously pointed out discrepancies between levels and patterns of MNE and SOE shares of firm sales (=turnover) and corresponding MNE or "State" shares of non-household GDP in 2000-2008. There are of course several important reasons for such discrepancies to exist. First, the sales variable includes intermediate consumption, while GDP excludes it. MNEs in particular are often observed to have relatively low ratios of value added to sales, especially in key processing industries like electronics and footwear, which suggests that MNE shares of sales might exceed corresponding shares of value added or GDP. Second, definitions of ownership groups may differ among data sets and sources, especially when joint ventures are involved. Third, sampling and compilation methodologies differ greatly. Fourth, the state share of GDP is likely to be larger than the SOE share of firm production because the state sector includes the government and other state-controlled organizations that produce goods and services, not just SOEs.

Compilations of firm sales are relatively straightforward. If one believes firms report sales accurately can simply sum the amounts reported by firms on survey questionnaires. Alternatively, if one believes specific groups of firms tend to underreport sales (because, for example, they fear that accurate reporting could result in tax difficulties), one can adjust sales figures for those firms. Even when firms fail to report sales, it is often possible to estimate

missing values using information on other aspects of firm performance or firm performance in other years. One would also like to make similar calculations of firm-level value added but unfortunately Vietnam does not collect firm-level information on intermediate costs necessary to calculate value added.¹ Compilation of firm-level information is also time-consuming, which means that definitive firm-level data are not usually available until two years after the year they refer to, and Vietnam's enterprise survey compilations are available more quickly than similar compilations for most other economies.

GDP, on the other hand, must be estimated much more rapidly, often on the basis of relatively incomplete information. This is why preliminary GDP estimates and revised GDP estimates often differ greatly for most economies in the world, and there are often several rounds of revisions. In contrast, there are usually relatively small differences between preliminary and revised estimates of GDP for Vietnam. There is also a large difference in coverage, because GDP estimates must cover the entire economy, including all firms, households, and other public and private organizations. On the other hand, the enterprise surveys explicitly exclude organizations other than firms and household firms, and collect limited information from most small firms with 10 or fewer employees (Jammal et al, 2006).²

Despite all of these differences, estimates of MNE and SOE shares of non-household GDP and corresponding shares of firm sales were remarkably similar in 2000 (57 vs. 56 percent for SOEs and 20 percent each for MNEs, Table 1). MNE shares of both measures remained similar at 19-22 percent through 2005. However, from 2006 they diverged with MNE shares of GDP rising to 25 percent in 2007-2009 and then to 30 percent or more in 2013-2014. In

¹ The General Statistics Office does, however, provide estimates of value added for major products of firms. These estimates are calculated from product-level sales data and industry-level (5-digit level of revision 4 of the Vietnam Standard Industry Classification [VSIC] for recent years and 4-digit level of revision 3 for previous years) input-output coefficients. Presumably, these input-output are the same as those used to calculate GDP estimates.

² Casual inspection of the firm-level data also indicates that most firms reporting unrealistic or highly unusual data are small firms. This is not at all uncommon because the statistical agencies usually find it much easier to identify and correct obvious mistakes in data for large firms.

contrast, MNE shares of firm sales fell to 18 percent in 2008-2009 before rebounding to 20-22 percent in 2011-2012 and 25 percent in 2013. The reasons for the divergence after 2006 are not clear.

State shares of GDP and SOE shares of firm sales fell in most years, but state shares of GDP declined very little, while SOE shares of firm sales began to decline rapidly as early as 2003 (Table 1). By 2004 the discrepancy in the two shares was over 10 percentage points (56 versus 45 percent), and the discrepancy continued to widen, reaching 20 percent points or more in 2010 (53 versus 33 percent) and 2013 (50 versus 28 percent). The widening divergence suggests that production by the government and other state-controlled organizations has grown especially rapidly after the mid-2000s. It is difficult to understand precisely which government or other state entities have been growing so quickly and reached such a large scale.

Because the GDP data indicate that state and MNE shares were relatively large, MNE shares grew relatively quickly, and state shares fell relatively slowly, they also imply that the share of private firms and other private entities was relatively small and declined in recent years, from 22-24 percent in 2000-2009 to 20-21 percent in 2010-2014 (Table 1). In marked contrast, private shares of firm sales increased markedly from 24 to 47 percent in 2000-2007, before stabilizing at 47-49 percent in 2008-2013. Here again, the reasons for the large discrepancies in trends over time are particularly difficult to understand.

The major possible definitional difference between these two sources involves the classification of MNE joint ventures (JVs) with SOEs. Enterprise surveys suggest this group was relatively large in earlier years, accounting for 12-13 percent of firm sales in 2000-2001 and 11 percent in 2002-2005 (Table 1). However the share of MNE JVs subsequently declined to 5-6 percent in 2009-2013. To the extent that the national accounts definition of the state includes these MNE-SOE JVs (which is not clear from public information), while the

enterprise survey definition is known to exclude them, this divergence can explain a small part of the discrepancies in recent years. On the other hand, if MNE-SOE JVs are reclassified as SOEs in the enterprise data, the discrepancy between alternative estimates of MNE shares widens. Moreover, reclassification cannot explain the growing discrepancies in state/SOE or MNE shares over time.

Comparisons of non-household employment estimates from the Labor Force Surveys (LFS) and enterprise employment also suggest that state shares of non-household employment reported in the LFS (56 percent in 2007, 45-47 percent in 2009-2013) were much larger than corresponding SOE shares of enterprise employment (26-30 percent in 2007-2009 and 18-22 percent in 2010-2014, Table 2). Here again, this presumably results primarily because the LFS estimates of state employment (4.8-5.5 million in 2007 and 2009-2013) include numerous state sector workers that didn't work for SOEs (2.1-2.2 million workers according to the enterprise surveys). However, it is difficult to understand why the discrepancy between the two estimates was so much smaller in 2009-2010 (2.5 million workers) than in other years (2.9-3.0 million in 2007 and 2011, 3.2-3.3 million in 2012-2013). Smaller discrepancies in 2009-2010 are also counterintuitive because they suggest that the government and other non-SOE, state entities reduced employment substantially just after the World Financial Crisis.

In marked contrast to patterns observed for SOEs or MNE production, LFS estimates of foreign firm employment were substantially smaller than enterprise survey estimates after 2009 (Table 2). Moreover, enterprise survey estimates for wholly-foreign MNEs were larger than LFS estimates for all foreign firms, especially in 2011-2013 when the discrepancy reached 35-56 percent of the LFS estimate. SOE shares of non-household employment (56 percent in 2007, 44-47 percent in 2009-2014) were thus much larger than corresponding shares of firm employment (30 percent in 2007 and 18-26 percent in 2009-2013). On the other hand, MNE shares of non-household employment (11 and 14-17 percent, respectively) were

much smaller than MNE shares of firm employment (22-26 percent in 2007 and 2009-2013). Both the GDP data and LFS estimates of economy-wide employment suggest a much smaller role for private firms than the enterprise survey estimates.

It is also important to note that SOE and MNE shares of non-household GDP or firm sales tended to exceed corresponding shares of non-household employment for MNEs and SOEs, and that the gap between these shares was relatively large for MNEs. This would suggest that MNEs had the highest GDP per employee followed by SOEs and that both groups had higher GDP per employee than the economy-wide average. On the other hand, GDP per employee was relatively low in the private sector. However, if the same comparison is made using the enterprise data, shares of sales were larger than shares of employment for SOEs, but not for MNEs or private firms. In other words, sales per employee were relatively large for SOEs compared to the overall average, but this was not true for MNEs or private firms.³

The most important, reasonable conclusion one can make from careful examination of Tables 1 and 2 is that there are large discrepancies between GDP and LFS estimates of state and MNE shares and corresponding estimates of SOE and MNE shares from the enterprise surveys, especially in recent years. The largest source of these discrepancies is probably the fact that the state employs many workers and has substantial production outside of SOEs. However, the precise magnitude and institutions involved in this activity is unclear. Moreover, there are important discrepancies in measures of MNE production and employment that are much more difficult to explain, except by measurement error. Correspondingly, one needs to interpret the trends and levels of SOE and MNE shares observed in these data with caution, recognizing that substantial measurement errors that probably affect all estimates.

³ See Ramstetter and Phan (2013, Table 2 for more detailed comparisons of productivity in manufacturing industries; these comparisons suggest that MNEs generally had relatively high productivity once factor intensity and scale effects are accounted for and a lagged specification is used to partially account for simultaneity problems.

4. Changes in Firm Ownership, Employment, and Wages

As documented in the previous section, Vietnam experienced rapid changes in ownership patterns and related changes in production and employment structures in recent years. Perhaps the most important change has been the relatively rapid growth of the formal enterprise sector relative to the whole economy. For example, according to the LFS data underlying Table 2, the share of non-household employment in total employment increased from 20 percent in 2007 to 23 percent in 2014. If the enterprise data are used to calculate the ratio of firm employment to the total, this change appears to be even more rapid, the ratio rising from 16 percent in 2007 to 22 percent in 2011-2013. Thus, although Vietnam remains a relatively poor developing economy where households (and individual proprietorships) still account for the vast majority of employment, the formal, corporate sector has been growing relatively rapidly.

Among enterprises, MNEs have been growing relatively rapidly, while SOEs have been growing relatively slowly. Changes in the relative shares of MNEs and SOEs have three distinct causes, (1) the entry of new firms or exit of old ones, (2) changes in the scale of existing firms, and (3) changes of ownership (takeovers) of existing firms. The latter category is of particular interest for two reasons. First, many academics and policy makers believe that Vietnam can benefit from further privatization of existing SOEs. Second, as Wang and Wang (2015) emphasize in their study of Chinese firms changing ownership, studies of firms changing ownership are arguably better able to identify the effects of MNE ownership than studies which compare MNE takeovers to firms that didn't change ownership. This is because focusing on comparisons of different groups of takeover firms can better control for the special characteristics of firms changing ownership which are not present in firms with constant ownership.

In order to identify firms changing ownership, one must first construct a panel of all firms and then identify firms changing ownership. The six columns on the right side of Table 3

reports total employment for the unbalanced panels we have been able to assemble from information on manufacturing firms and firms in trade, transport, and storage services (referred to as “trade and related services” or simply “trade” below) that were purchased from the General Statistics Office (GSO). In principle, these data should yield the same employment totals as those reported in published compilations such as General Statistics Office (2010, 2013, 2015). However, totals from the panel data are somewhat smaller than the totals from corresponding published compilations, which are reproduced in the third and fourth columns of Table 3, primarily because the panel data exclude a substantial number of firms reporting non-positive values for paid workers, compensation per worker, sales, and fixed assets.⁴ Employment of panel firms include the vast majority (93 percent or more) of published totals for manufacturing firms in all years except for 2000 and 2007, when panel coverage was markedly lower (82 and 70 percent, respectively). Panel coverage of employment in trade and related services was also quite high in 2001-2003 (91 percent or more), but substantially lower in other years (58 percent in 2007, 65-67 percent in 2011-2012, and 73-79 percent in other years).

Primarily because most takeovers involve relatively large firms and because data on small firms contain a relatively large number of outlier observations, we further restrict the panel samples to medium-large firms with 20 or more employees in Tables 4-10. We also exclude manufacturing firms in four outlier industries (tobacco, printing and publishing, oil and coal products, and recycling) because these industries are highly regulated, very small, and or contain firms with very unusual characteristics in Vietnam. We had also wanted to further disaggregate manufacturing firms into more homogeneous industry groups similar to the eight groups identified by Ramstetter and Phan (2013), for example. However, such disaggregation

⁴ The existence of substantial numbers of apparently duplicate entries (i.e., numerous entries for the same firm identification code), which was especially common in earlier years in the sample, is another possible cause, though we do not know how these entries were treated in the published compilations (see Ramstetter and Phan 2007, pp. 24-25 for more details on the duplicate problem).

is meaningless in this context because samples of takeovers firms are extremely small.

Comparing Tables 3 and 4, medium-large firms accounted for the vast majority (94 percent or more) of panel firm employment in manufacturing and trade MNEs as well as in trade SOEs in all years and in manufacturing SOEs through 2005. Shares of medium-large firms were also relatively high (87-93 percent) for manufacturing SOEs in 2006-2012 and private manufacturing firms in all years, but much lower for private firms in trade and related services (60-78 percent). Thus, sample coverage remains relatively high for all ownership groups even after eliminating small firms with 19 or fewer workers.

Table 4 also suggests that SOEs paid the highest real wages on average, followed by MNEs, and distantly by private firms, in both manufacturing and trade. This pattern contrasts with patterns revealed in previous studies of manufacturing firms, which suggested that MNEs generally paid the highest wages. One important reason for this difference is that previous studies provided more detailed disaggregation of manufacturing industries. In other words, SOEs tend to be concentrated in relatively high-wage industries and this is a major reason they appear to pay the highest wages in Table 4. The tendency for MNEs to pay the highest wages is even stronger further if the influences of firm characteristics such as size, capital intensity, the female share of the workforce, and worker education or occupation are accounted for (Nguyen 2015, Nguyen and Ramstetter 2015a, 2015b).

Correspondingly, similar to Sjöholm and Lipsey's (2006) analysis of Indonesian plants, we initially planned to use a fixed effects estimator to estimate the wage effects of MNE takeovers relative to firms that didn't change ownership, after controlling for such firm-level characteristics to the greatest extent possible with the panel data. Likewise, using a PSM methodology such as in Wang and Wang's (2015) analysis of MNE takeovers in Chinese manufacturing firms compared to other takeovers is potentially very useful. However, as Table 5 reveals, the number of takeovers was extremely low in Vietnam during 2000-2012,

only 22 per year in sample manufacturing and 27 per year in trade and related services. Moreover, there were very few MNE takeovers, only 1.2 per year in manufacturing and 0.4 per year in trade. These MNE takeovers affected an average of only 1,418 manufacturing workers and 305 trade workers per year. Takeovers by SOEs were similarly rare but they were larger, affecting almost as many workers as the much larger number of private takeovers. 10 firms per year were also recorded as experiencing multiple ownership changes during 2000-2012. These firms are excluded from the main samples because the ownership of the takeover firm cannot be defined unambiguously and because we suspect multiple takeovers may in fact reflect data errors in several cases. Nonetheless, it remains that the extremely small number of takeovers by MNEs and SOEs renders the use either fixed effects or PSM estimators useless because they are only valid asymptotically (i.e., in very large samples).

Table 6 then shows that private takeovers tended to be substantially larger (employ more workers per firm on average) than private firms that did not change ownership in both manufacturing and trade. The same pattern was observed for MNE takeovers in trade. On the other hand, SOE takeovers in trade and both MNE and SOE takeovers in manufacturing tended to be relatively small compared to corresponding MNEs or SOEs that didn't change ownership.

More importantly, however, the information in Tables 7 and 8 further underscores the fragility of the evidence from these small samples. Table 7 report mean levels of employment and associated standard deviations, showing that mean employment levels were always smaller than associated standard deviations. In other words, the calculations suggest that it is impossible to reject the null hypothesis that takeover firms had zero employees on average, in all five years surrounding the takeover. Table 8 reports that mean compensation per worker was usually larger than associated standard deviations, but here again the variation was so large that the null hypothesis of zero wages in all years surrounding the takeover could not be

rejected for MNE takeovers in manufacturing or private takeovers in trade.

Most importantly, calculations of mean growth rates of firm-level employment (Table 9) or firm-level wages (Table 10) and associated standard deviations all revealed extremely large variation, with standard deviations usually being several times larger than their corresponding means. Thus, unlike previous studies of Chinese manufacturing firms or Indonesian manufacturing plants, the samples of takeover firms are simply too small and variation too large to yield reliable conclusions about how takeovers have affected firm employment and wages in Vietnam. Although this result is disappointing to the academic, it also reflects an important aspect of Vietnam's corporate sector. Namely, takeovers have apparently been too few and too varied in nature to have imparted systematic effects on employment and wages in Vietnamese firms.

5. Conclusion

This paper has examined how foreign MNEs have grown in Vietnam's manufacturing and trade industries, and shed light on how MNE takeovers of Vietnamese firms have affected employment, and wages between 2000 and 2012. As highlighted in the literature review, comparisons of employment and wages in MNE takeovers with employment and wages in firms with constant ownership, and particularly with other types of takeovers, are of particular interest to those seeking to understand the effects of foreign ownership.

Although the scale of MNE activity has been substantial in Vietnam and grown in recent years, there are substantial discrepancies in measures of MNE shares from alternative sources and uncertainty over the actual share of MNEs in Vietnamese production or employment. On the other hand, the number of MNE takeovers has been very small and they appear to have been only a very small source of changes of MNEs shares. Rather changes in MNE shares have resulted primarily from the entry and exit MNEs and changes in the scale of existing

MNE activity.

This exercise thus raises far more questions than it answers, three of which are prominent. First, why have takeovers been so rare in Vietnam? Is there a strong policy bias that prevents takeovers that has remained undetected in the recent literature? Second, alternatively, is there a problem with the data, specifically with the firm identifying codes used in the data set used in this study and many others like it? In this respect, we know several academics who have expressed reservations about the firm identifiers in the data. Assuming that takeovers are more common than these data reveal, the evidence in this paper would seem to give further credence to those reservations. Third, our method of identifying ownership changes has been at an aggregate level; that is we have focused on distinguishing three groups of owners, SOEs, MNEs, and private firms. However, the ownership variable available in the data distinguishes several types of SOEs and private firms, in addition to wholly foreign MNEs and two types of MNE JVs. Would the use of more ownership groups as in Wang and Wang's (2015) study of Chinese firms yield more meaningful results and show ownership changes to be more common? We doubt use of more ownership groups would change the number of MNE takeovers much but we certainly need to explore the answers to all of these questions in more detail before more definitive conclusions can be reached.

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Table 1: Shares of Non-Household GDP and Enterprise Turnover (percent)

Year	Non-Household GDP			Enterprise turnover, published				
	SOEs	MNEs	Private	SOEs	MNEs	MNEs 100%	MNE JVs	Private
1995	63	10	27	-	-	-	-	-
1996	62	11	27	-	-	-	-	-
1997	62	14	25	-	-	-	-	-
1998	60	15	24	-	-	-	-	-
1999	58	18	24	-	-	-	-	-
2000	57	20	23	56	20	7	13	24
2001	56	20	23	54	20	8	12	27
2002	56	20	24	54	19	8	11	28
2003	56	21	23	49	20	9	11	31
2004	56	22	22	45	22	11	11	33
2005	55	22	22	44	22	11	11	35
2006	54	24	23	42	22	12	10	36
2007	52	25	23	38	21	12	9	41
2008	51	25	24	35	18	11	7	47
2009	51	25	24	33	18	12	6	49
2010	53	27	20	33	19	13	6	49
2011	52	28	20	33	20	14	5	48
2012	51	28	21	32	22	17	5	47
2013	50	30	20	28	25	20	5	47
2014	49	31	20	-	-	-	-	-

Notes: For 2010-2014, non-household GDP also excludes product taxes less production subsidies; the SOE share of enterprise turnovers includes central government SOEs, local government SOEs and joint stock companies with state capital.

Sources: General Statistics Office (2010, 2013, 2015, various years).

Table 2: Total Employment and Enterprise Employment (thousands)

Year	Non-household employment						Enterprise employment, published					
	Total LFS	State LFS	State web	Foreign LFS	Foreign web	Private LFS	Total	SOEs	MNEs	MNEs 100%	MNE JVs	Private
2000	-	-	4,358	-	359	-	3,537	2,150	408	286	122	979
2001	-	-	4,474	-	349	-	3,933	2,229	489	364	125	1,215
2002	-	-	4,634	-	426	-	4,658	2,404	691	536	155	1,563
2003	-	-	4,919	-	753	-	5,175	2,426	860	688	173	1,889
2004	-	-	5,031	-	915	-	5,771	2,434	1,045	865	180	2,291
2005	-	-	4,967	-	1,113	-	6,237	2,318	1,221	1,028	192	2,698
2006	-	-	4,916	-	1,322	-	6,565	2,267	1,445	1,237	208	2,853
2007	9,058	5,074	4,988	968	1,562	3,017	7,225	2,190	1,686	1,459	227	3,349
2008	-	-	5,059	-	1,694	-	7,949	2,198	1,829	1,604	225	3,921
2009	10,283	4,794	5,041	1,398	1,525	4,091	8,719	2,277	1,920	1,691	229	4,522
2010	10,645	4,780	5,107	1,756	1,727	4,110	9,831	2,197	2,156	1,902	254	5,478
2011	11,188	5,251	5,251	1,700	1,700	4,238	10,896	2,165	2,551	2,289	262	6,180
2012	11,544	5,336	5,354	1,700	1,703	4,507	11,085	2,082	2,720	2,476	244	6,283
2013	11,610	5,330	5,330	1,786	1,786	4,494	11,566	2,094	3,051	2,783	268	6,421
2014	12,311	5,474	5,474	2,057	2,057	4,781	-	-	-	-	-	-

Notes: For non-household employment LFS series come from Labour Force Survey reports (General Statistics Office various years b) and also exclude self-employment while web estimates come from General Statistics Office (various years a, 2015 downloads); for enterprises, SOE enterprises include central government SOEs, local government SOEs, and joint stock companies with state capital.

Sources: General Statistics Office (2010, 2013, 2015, various years a; various years b).

Table 3: Total Employment and Enterprise Employment in Manufacturing and Trade (thousands)

Year	Total		Enterprises, published		Enterprises in panel data					
	Manu- factur- ing	Trade, trans- port, storage	Manu- factur- ing	Trade, trans- port, storage	Manufacturing			Trade, transport, storage		
					Total	SOEs	MNEs	Total	SOEs	MNEs
2000	-	-	1,571	500	1,295	540	327	387	235	6
2001	-	-	1,769	546	1,714	662	425	538	320	7
2002	-	-	2,166	627	2,115	723	613	570	299	9
2003	-	-	2,515	682	2,450	738	778	620	284	11
2004	-	-	2,845	780	2,756	695	952	617	231	12
2005	5,031	5,884	3,048	890	2,854	601	1,058	648	216	16
2006	-	-	3,345	996	3,181	473	1,315	741	189	21
2007	5,665	6,271	3,724	1,099	2,625	383	1,098	636	170	18
2008	5,999	6,534	3,927	1,299	3,822	409	1,671	1,031	211	28
2009	6,449	6,577	4,092	1,493	4,021	425	1,751	1,151	231	30
2010	6,646	6,966	4,442	1,803	4,289	319	1,976	1,353	168	34
2011	6,973	7,242	4,872	2,027	4,620	283	2,269	1,361	217	42
2012	7,102	7,812	4,991	1,988	4,658	267	2,379	1,290	152	46
2013	7,267	8,094	5,334	2,061	-	-	-	-	-	-
2014	7,415	8,187	-	-	-	-	-	-	-	-

Notes: SOE enterprises include central government SOEs, local government SOEs, and joint stock companies with state capital; for published enterprise data, 2000-2005 estimated using growth rates of VSIC revision 3 compilations (which yield 1-2% larger totals for manufacturing and trade in 2006-2007, and 19-20% larger totals for transport and storage) and VSIC revision 4 compilations for 2006-2013. Panel data include firms reporting non-negative paid workers, compensation per worker, turnover, and fixed assets.

Sources: General Statistics Office (2010, 2013, 2015, various years); authors' calculations (for panel data).

Table 4: Employment and Mean Compensation per Worker in Medium-Large Enterprises in Sample Industries (employment in thousands, mean wages in million dong)

Year	Employment						Mean real compensation per worker					
	Sample manufacturing			Trade, transport, storage			Sample manufacturing			Trade, transport, storage		
	SOEs	MNEs	Private	SOEs	MNEs	Private	SOEs	MNEs	Private	SOEs	MNEs	Private
2000	515	326	400	235	6.2	114	6.69	6.60	1.35	4.72	4.38	1.05
2001	629	423	586	319	6.5	156	6.94	6.37	1.36	4.95	4.18	0.92
2002	688	610	725	298	9.3	183	8.26	6.79	1.42	5.62	5.15	0.84
2003	703	775	871	283	11	227	9.95	7.32	1.55	6.61	5.40	0.92
2004	658	947	1,034	231	12	253	10.64	7.39	1.56	5.75	4.88	0.86
2005	564	1,053	1,116	215	16	293	12.24	8.34	1.71	7.65	6.08	1.00
2006	440	1,305	1,290	189	20	339	13.47	8.52	1.84	7.80	6.15	1.04
2007	355	1,091	1,055	170	18	293	14.85	8.89	2.09	10.89	7.37	1.15
2008	376	1,658	1,572	211	27	473	13.08	8.92	1.95	11.74	7.32	1.12
2009	392	1,737	1,648	230	29	533	13.80	9.04	2.17	11.34	8.69	1.24
2010	289	1,962	1,794	168	32	723	14.51	10.89	2.33	20.73	8.17	1.54
2011	249	2,254	1,865	217	40	717	16.08	11.97	2.38	16.80	7.67	1.73
2012	233	2,364	1,806	152	43	688	14.37	15.39	2.85	18.57	9.33	1.67

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' calculations.

Table 5: Number of medium-large firms and total workers by industry and takeover status or owner

Sample, industry, type	Number of Firms per year			Total Workers per year		
	2000-06	2007-12	2000-12	2000-06	2007-12	2000-12
SAMPLE FIRMS, SINGLE TAKEOVERS						
All sample industries	50	50	50	98,597	107,928	102,904
Sample manufacturing	22	23	22	49,476	54,025	51,575
Private takeovers	21	19	20	16,463	42,678	28,562
MNE takeovers	0.0	2.7	1.2	470	2,523	1,418
SOE takeovers	1.4	1.7	1.5	32,542	8,824	21,596
Trade, transport, storage	28	27	27	49,122	53,903	51,328
Private takeovers	27	24	25	16,146	40,860	27,552
MNE takeovers	0.0	0.8	0.4	0	660	305
SOE takeovers	0.7	2.3	1.5	32,976	12,384	23,472
SAMPLE FIRMS, CONSTANT OWNERSHIP						
All sample industries	19,609	41,890	29,893	3,344,664	5,355,397	4,272,695
Sample manufacturing	9,261	17,649	13,132	2,187,367	3,438,039	2,764,601
Private	6,447	13,490	9,698	863,245	1,577,763	1,193,022
MNEs	1,771	3,614	2,622	784,100	1,612,108	1,166,258
SOEs	1,043	545	813	540,022	248,168	405,320
Trade, transport, storage	10,349	24,242	16,761	1,157,297	1,917,357	1,508,094
Private	8,554	22,908	15,179	562,661	1,522,330	1,005,585
MNEs	137	388	253	17,012	41,336	28,238
SOEs	1,658	945	1,329	577,624	353,692	474,270
EXCLUDED FIRMS IN SAMPLE INDUSTRIES						
Multiple ownership changes	9	12	10	17,832	16,978	17,438
Small size	33,491	122,466	74,556	266,834	870,093	545,261
Implausible data	6,616	15,922	10,911	78,992	144,192	109,085

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' compilations.

Table 6: Mean workers per firm and compensation per worker in medium-large firms by industry and takeover status or owner

Sample, industry, type	Mean workers per firm			Mean compensation per worker		
	2000-06	2007-12	2000-12	2000-06	2007-12	2000-12
SAMPLE FIRMS, SINGLE TAKEOVERS						
All sample firms	420.59	412.20	416.49	16.33	24.20	20.18
Sample manufacturing	477.04	454.63	465.94	14.03	22.11	18.03
Private takeovers	385.43	504.07	460.11	13.64	21.16	18.37
MNE takeovers	365.67	225.97	242.51	25.84	30.46	29.91
SOE takeovers	544.97	383.66	504.93	14.06	21.56	15.92
Trade, transport, storage	375.79	376.95	376.35	18.15	25.95	21.92
Private takeovers	299.79	378.33	349.44	17.41	25.16	22.31
MNE takeovers	-	232.88	232.88	-	45.30	45.30
SOE takeovers	429.05	384.98	417.42	18.67	26.86	20.83
SAMPLE FIRMS, CONSTANT OWNERSHIP						
All sample firms	180.20	134.49	150.59	12.58	19.10	16.80
Sample manufacturing	247.20	209.29	223.92	11.84	17.08	15.06
Private	137.71	120.96	126.98	9.36	14.68	12.77
MNEs	455.91	543.19	507.99	19.86	26.29	23.70
SOEs	627.83	597.28	618.88	13.82	26.62	17.57
Trade, transport, storage	119.15	81.96	94.10	13.25	20.51	18.15
Private	68.86	68.18	68.38	12.16	19.53	17.33
MNEs	126.55	135.01	132.15	44.85	61.96	56.17
SOEs	410.54	466.41	428.19	16.54	32.81	21.68
EXCLUDED FIRMS IN SAMPLE INDUSTRIES						
Multiple ownership changes	308.21	232.04	268.59	18.75	25.21	22.11
Small size	7.97	7.10	7.31	10.96	17.94	16.26
Implausible data	12.61	9.06	10.18	10.63	17.18	15.21

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' compilations.

Table 7: Mean workers per firm in medium-large takeover firms by industry and takeover status or owner by year (t=takeover year)

Sample, industry, type	t-2	t-1	t	t+1	t+2
MEAN WORKERS PER FIRM					
All sample firms	462.58	451.12	409.25	387.27	373.53
Sample manufacturing	499.33	501.56	463.04	445.72	421.30
Private takeovers	271.00	234.58	497.04	474.29	445.53
MNE takeovers	305.54	504.21	127.50	160.06	164.65
SOE takeovers	528.83	527.25	296.20	311.40	334.20
Trade, transport, storage	432.63	410.93	365.01	339.80	334.75
Private takeovers	86.20	113.29	376.62	350.72	343.90
MNE takeovers	38.00	-	250.80	250.60	235.67
SOE takeovers	444.15	429.42	192.74	171.84	213.55
STANDARD DEVIATIONS OF WORKERS PER FIRM					
All sample firms	703.25	719.00	658.81	581.11	578.73
Sample manufacturing	698.94	740.32	697.89	650.57	621.09
Private takeovers	333.93	305.04	730.43	680.59	652.17
MNE takeovers	319.17	673.05	151.56	199.61	188.69
SOE takeovers	731.10	769.61	375.95	373.75	351.88
Trade, transport, storage	706.33	699.99	622.35	513.95	539.69
Private takeovers	99.20	136.26	638.34	526.82	554.72
MNE takeovers	1 firm	-	404.22	407.26	394.54
SOE takeovers	714.75	716.62	270.28	184.58	229.55

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' compilations.

Table 8: Mean compensation per worker in medium-large takeover firms by industry and takeover status or owner (t=takeover year)

Sample, industry, type	t-2	t-1	t	t+1	t+2
MEAN COMPENSATION PER WORKER					
All sample firms	17.23	19.18	20.25	21.92	22.24
Sample manufacturing	15.24	16.63	17.79	19.58	20.85
Private takeovers	13.58	17.39	16.91	18.59	20.12
MNE takeovers	22.54	21.24	31.66	36.00	35.31
SOE takeovers	15.00	16.29	17.94	18.97	17.77
Trade, transport, storage	18.85	21.21	22.27	23.83	23.36
Private takeovers	25.99	22.73	21.81	22.17	22.82
MNE takeovers	23.15	-	39.56	55.09	45.61
SOE takeovers	18.62	21.11	25.67	44.76	25.72
STANDARD DEVIATION OF MEAN COMPENSATION PER WORKER					
All sample firms	14.63	17.69	17.87	20.60	16.70
Sample manufacturing	10.97	11.58	13.66	15.33	17.24
Private takeovers	8.09	10.84	11.02	13.67	15.50
MNE takeovers	17.64	14.56	35.41	31.33	35.28
SOE takeovers	10.65	11.45	7.93	8.42	8.63
Trade, transport, storage	16.88	21.15	20.51	23.89	16.19
Private takeovers	17.53	14.54	20.83	16.33	14.99
MNE takeovers	1 firm	-	19.35	54.02	50.85
SOE takeovers	16.87	21.50	11.54	70.24	12.68

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' compilations.

Table 9: Mean growth rates of workers in medium-large takeover firms by industry and takeover status or owner by year (t=takeover year)

Sample, industry, type	t-2	t-1	t	t+1	t+2
MEAN GROWTH RATES OF WORKERS					
All sample firms	25.43	47.98	34.46	25.26	8.39
Sample manufacturing	34.34	66.94	53.17	41.61	2.86
Private takeovers	-2.76	756.35	1.37	0.71	-0.27
MNE takeovers	202.42	134.08	486.54	730.24	33.08
SOE takeovers	27.84	-3.57	369.46	10.15	16.65
Trade, transport, storage	18.48	32.84	19.07	11.98	12.88
Private takeovers	13.29	389.49	-4.71	11.35	6.24
MNE takeovers	-	-	284.94	-3.65	308.56
SOE takeovers	18.58	11.74	363.30	27.16	33.73
STANDARD DEVIATIONS MEAN GROWTH RATES OF WORKERS					
All sample firms	197.43	369.56	326.66	460.69	87.13
Sample manufacturing	277.38	504.40	334.37	680.16	42.99
Private takeovers	8.33	1600.61	79.28	37.26	39.22
MNE takeovers	484.57	237.48	673.23	2890.07	66.64
SOE takeovers	269.59	24.60	985.17	36.76	52.89
Trade, transport, storage	96.81	205.82	319.84	95.82	110.58
Private takeovers	23.03	681.48	53.77	97.75	58.64
MNE takeovers	-	-	539.86	8.45	682.73
SOE takeovers	97.73	103.43	1,318.70	70.77	131.92

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' compilations.

Table 10: Mean growth rates compensation per worker in medium-large takeover firms by industry and takeover status or owner by year (t=takeover year)

Sample, industry, type	t-2	t-1	t	t+1	t+2
MEAN GROWTH RATES OF COMPENSATION PER WORKER					
All sample firms	24.80	42.41	26.55	36.61	22.75
Sample manufacturing	26.66	32.14	27.29	42.63	28.95
Private takeovers	27.83	45.70	23.11	44.66	32.30
MNE takeovers	24.63	46.94	102.89	55.28	4.89
SOE takeovers	26.70	29.99	20.26	6.73	7.16
Trade, transport, storage	23.35	50.61	25.95	31.71	17.73
Private takeovers	55.43	143.56	24.75	27.62	18.51
MNE takeovers	-	-	43.80	32.66	17.68
SOE takeovers	22.71	45.11	42.10	103.06	4.89
STANDARD DEVIATIONS OF COMPENSATION PER WORKER GROWTH					
All sample firms	118.60	168.06	109.99	192.06	121.87
Sample manufacturing	135.02	119.12	116.23	250.04	163.78
Private takeovers	34.19	106.51	112.70	263.94	173.46
MNE takeovers	133.85	192.75	181.64	163.40	45.67
SOE takeovers	138.87	115.44	72.61	27.66	78.59
Trade, transport, storage	104.21	198.47	104.74	126.98	71.61
Private takeovers	94.53	297.97	105.88	99.20	70.88
MNE takeovers	-	-	80.65	72.47	116.33
SOE takeovers	104.44	190.21	91.57	361.26	71.13

Note: Sample manufacturing excludes tobacco, printing and publishing, oil and coal products, and recycling. Medium-large firms are those with 20 or more paid workers, and positive compensation per worker, turnover, and fixed assets.

Source: Authors' compilations.