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The presence of MNCs and the differentials and spillovers of productivity and wages in Southeast Asian manufacturing

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Abstract

This literature survey paper overall investigates the presence of multinational corporations (MNCs) and its associations with productivity and wages in Southeast Asian manufacturing during the last few decades prior to 2010. Despite the fact that MNC-share tendency and levels are mixed across countries, the levels demonstrate the MNC characters of high labor productivity and high export propensities. Besides, the empirical results of differentials and spillovers somewhat give similar implications between productivity and wages. The evidence is rather positive for all manufacturing combined, softened after accounting for firm and industry character indicators, and varied at the industry level. Nevertheless, the spillover study of Vietnamese manufacturing in particular relatively has problems with fixed-effects panel estimates.

Keywords: multinational corporations (MNCs), productivity, wages, Southeast Asia, manufacturing

JEL classification: F23, L60, O53

1. Introduction

There have been numerous empirical studies accomplished in order to analyze MNC activities and impacts through the latest time periods in the manufacturing sectors and industry groups of foremost Southeast Asian developed and developing countries including Singapore (considered developed, only), Indonesia, Thailand, Vietnam, and Malaysia. The analyses were mainly carried out by means of all manufacturing combined but less often at the industry level. Both cross-section (estimating points across sections at a certain period of time, across-industry explanation, for instance) and fixed-effects panel (explanatory variables are non-random, efficient when random effects do not hold) tests were also taken into account with respect to particular studied cases.

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This research survey is to illustrate the overall view of such activities and impacts in those advanced and emerging economies. Besides, essentially, related existing empirical pieces of evidence are brought to correspond economic theoretical frameworks and expectations. The next three sections along with their conforming three purposes are thereafter structured as follows. Section 2 is 'MNC presence' as to highlight how the tendency and concentration of MNC shares are and also to subsequently demonstrate some possibly interpreted unique MNC characteristics. Section 3 is 'productivity differentials and spillovers' as to examine how the distinction and influence among MNCs and local firms, regarding productivity, are. Finally, section 4 is 'wage differentials and spillovers' as to examine how the distinction and influence among MNCs and the local, regarding wages, are.

2. The presence of multinational corporations

Prior to discussions on the matters such as differentials and spillovers of productivity and wages, the brief outlook of MNC presence is assessed via three respects, MNC-share trends in countries, MNC-share concentration in different hosts, and MNC-share concentration in specific measures (e.g. employment, production, exports, etc.). The former two respects are how large MNC shares are, meanwhile, the other respect is whether MNC shares tend to be increasing, decreasing, or relatively constant.

The tendency of MNC shares studied in terms of employment, value added (as a production determination), fixed assets, or exports, was quite mixed across host economies (Ramstetter, 2009). From the early 1990s to the middle 2010s, MNC shares, for all manufacturing combined, were overall likely to enlarge in Indonesia and Vietnam, reduce in Singapore and Thailand, and somewhat remain in Malaysia (Ramstetter, 2009: Tables 1-6; Takii, 2006: Tables 4.1-4.2). Moreover, at the industry level, the results in terms of employment for Indonesia were consistent (Takii, 2006: Table 4.1). Nonetheless, in terms of value added, only the results (for Indonesia) of the period before the 1997 financial crisis were aligned (Takii, 2006: Table 4.2). Conversely, post-crisis MNC shares in Indonesia declined (Takii, 2006: Table 4.2).

The number of MNC shares (the same measures and time period as the study of MNC-share tendency), for all manufacturing combined, was in general descriptively huge in Singapore, intermediate in Malaysia and Vietnam, and low in Thailand and Indonesia (Ramstetter, 2009: Tables 1-6).

From 1970 to 1996, MNC shares in Indonesia, Malaysia, and Singapore, for all manufacturing combined, tended to be relatively large, moderate, and small in terms of exports, production, and employment, respectively (Ramstetter, 1999: Table 1; Ramstetter and Haji Ahmad, 2009). This implies that MNCs rather have high labor productivity and high export propensities (Ramstetter, 1999; Ramstetter and Haji Ahmad, 2010).

3. Productivity differentials and spillovers

Theoretically, MNCs are thought to be more productive than are non-MNCs due to superior firm-specific, especially intangible, assets which are technology, capabilities, knowledge, production techniques and processes, marketing networks, management abilities, etc. (Haji Ahmad, 2010; Ramstetter, 2006; Ramstetter and Ngoc, 2008; Takii, 2006). Such firm-specific asset possession is indeed one of major reasons why MNCs can successfully compete with local firms who have cost advantages and know more about local traditions and practices (Haji Ahmad, 2010; Ramstetter, 2006; Ramstetter and Ngoc, 2008; Takii, 2006).

Econometric hypothesis testing is a crucial tool for differential investigation providing consequences as follows. For all manufacturing combined, average productivity differentials were substantially positive and statistically significant in Indonesia (Takii, 2006: Tables 4.3, 4.5) and Vietnam (Ramstetter and Ngoc, 2008: Tables 2, 4), often significantly positive in Malaysia (Haji Ahmad, 2010: Table 6.5), and considerably small and statistically insignificant in Thailand (Ramstetter, 2006). After accounting for possibly influential firm and industry characteristics such as factor intensities, firm size, vintage, investment promotional status, or producer concentration, the differentials were elementarily smaller in Indonesia (Takii, 2006: Table 4.4), and mostly insignificant in Thailand (Ramstetter, 2006) and Vietnam (Ramstetter and Ngoc, 2008). At the industry level, the regressed results of productivity differentials across industries were remarkably mixed and varied in Indonesia (Takii, 2006: Tables 4.3-4.5), Thailand (Ramstetter, 2002, 2006), Vietnam (Ramstetter and Ngoc, 2007, 2008: Tables 2, 4), and Malaysia (Haji Ahmad, 2010: Table 6.6). These positive, even though sometimes not statistically significant or varied, regression results overall could to some extent reasonably counter the earlier mentioned fundamental expectations.

The appearance of MNCs can affect local productivity (or so-called productivity spillovers) in many ways where demonstration, backward linkages, forward linkages, and labor mobility are among them (Takii, 2006). Demonstration effect is to learn and adapt MNC behaviors. Backward linkages are local improvements to catch MNCs up through MNC technological assistance and services. Forward linkages are those similar assistance and services supplied for firms that are customers. Last but not least, labor mobility is that trained MNC employees move to local firms (Haji Ahmad, 2010; Ramstetter, 2006; Ramstetter and Ngoc, 2007, 2008; Takii 2006).

Available associated empirical results, for all manufacturing combined, generally suggest that the relationship between MNC presence and local productivity, namely productivity spillovers, was strongly positive in Indonesia (Takii, 2006: Table 4.6; Ramstetter, 2009) as well as Vietnam solely by means of cross-section tests but without significant outcome by means of fixed-effects panel tests by which companies might enter or move significantly in Vietnamese manufacturing during the tested period (Ramstetter and

Ngoc, 2008: Tables 5-6). However, the spillovers in Thailand and Malaysia did not contribute much to the growth of local production (Haji Ahmad, 2010: Table 7.2; Ramstetter, 2006). This could be stemmed from exceptionally rapid spillover prospects (Ramstetter, 2006). At the industry level, the positive spillovers were ambiguous in Thailand (Ramstetter, 2006) and unnecessarily related to high foreign presence in Malaysia (Haji Ahmad, 2010: Tables 7.3-7.4). Furthermore, highly foreign-level MNCs tended to create slight productivity spillovers in Indonesia (Takii, 2006). Reasons for this could be intangible asset leakage control, technological gaps (bigger the gap, smaller the know-how and skills are spilled over), and high research and development (R&D) activities of the local (Takii, 2006).

4. Wage differentials and spillovers

MNCs are hypothetically expected to possess firm-specific assets, be technological and human capital intensive (could be due to having loads of patents and high expenses on R&D and advertising), thereby highly demand for a large numbers of skilled and educated human resources, and also know little about local labor markets (Lipsey and Sjöholm, 2006; Movshuk and Matsuoka-Movshuk, 2006; Ramstetter and Ngoc, 2007). As a result, MNCs are likely to pay higher premiums as compensation and attraction for local employees. If the premiums are high enough, turnover ratios could be diminished, and explicit (e.g. training) and implicit (e.g. adaptation) costs perhaps consequently shrink (Lipsey and Sjöholm, 2006; Movshuk and Matsuoka-Movshuk, 2006; Ramstetter and Ngoc, 2007).

Existing empirical observations for Indonesia, Thailand, Malaysia, and Vietnam, for all manufacturing combined, relatively show strong positive results in line with the aforementioned explanation (Lipsey and Sjöholm, 2006; Movshuk and Matsuoka-Movshuk, 2006: Tables 3.4-3.5, 3.7; Ramstetter and Haji Ahmad, 2009; Ramstetter and Ngoc, 2007). For Thailand, its results were in terms of non-production rather than production workers (Movshuk and Matsuoka-Movshuk, 2006: Tables 3.4-3.7). For Vietnam, its results were similar because the local economic policies require MNCs to pay high minimum wages and compensations (Ramstetter and Ngoc, 2007). After accounting for some prominent firm and industry characteristic indicators, e.g. factor intensities, firm size, labor quality, trade propensities, etc., similar, although smaller positive, results for Thailand and Vietnam were still drawn out (Movshuk and Matsuoka-Movshuk, 2006: Tables 3.5-3.6; Ramstetter and Ngoc, 2007). At the industry level, the results for Thailand were varied by some means (Movshuk and Matsuoka-Movshuk, 2006: Tables 3.6, 3.8).

Wage-spillover-wise, MNC existence could have an impact on local wage levels via channels. One is local labor markets where MNCs naturally shift the demand for labor outwards systematically forcing the local to also pay employees at higher rates (Lipsey and Sjöholm, 2006; Movshuk and Matsuoka-Movshuk, 2006; Ramstetter and Ngoc, 2007). Another one is technological spillovers from MNCs that possibly affect the productivity

and afterwards the wage and compensation levels of non-MNCs (Lipsey and Sjöholm, 2006; Movshuk and Matsuoka-Movshuk, 2006; Ramstetter and Ngoc, 2007).

Empirically, wage spillovers from MNCs averagely were positive in Indonesia (Lipsey and Sjöholm, 2006; Ramstetter, 2009), limitedly positive in Thailand (Movshuk and Matsuoka-Movshuk, 2006: Table 3.9), and statistically insignificant in Vietnam (Ramstetter and Ngoc, 2007). Additionally, the spillover statistical study of compensation levels for Vietnam indicates significantly positive correlations in terms of cross-section, not fixed-effects panel, tests (Ramstetter and Ngoc, 2007). The cause concerning such fixed-effects panel results could be explained in alignment with the previous section (section 3, the last paragraph) as regards productivity spillovers in Vietnamese manufacturing sector due to similar suggestion drawn from fixed-effects panel estimates (Ramstetter and Ngoc, 2007). In addition, if the positive results of wage spillovers are on discussions, it was stated that there is a possible bright side effect, which is that people are encouraged to obtain high education in order to receive high salary in the future (Lipsey and Sjöholm, 2006).

5. Concluding remarks

This literature review paper has highlighted MNC presence and examined the differentials and spillovers of productivity and wages in Southeast Asian manufacturing over the recent decades before 2010. The retrieved empirical results were various across countries but often consistent with theoretical frameworks.

On the matter of MNC presence, although the tendency and shares of MNCs are quite mixed and varied among studied host countries, specific results show that MNCs tended to possess high labor productivity and high export propensities in accordance with the recognized conditions of MNCs.

Pertaining to productivity differentials and spillovers, the statistical evidence is commonly positive for all manufacturing combined, smaller after accounting for the factors of influential firm characteristics and diverse at the industry level. However, productivity differentials were relatively small and insignificant in Thailand. Moreover, there was empirically no productivity spillover in Vietnam with respect to fixed-effects panel estimates because companies possibly entered or moved significantly in Vietnamese manufacturing during the studied period.

Lastly, with regard to wage differentials and spillovers, very similarly to the issue of productivity differentials and spillovers, results are generally positive for all manufacturing combined, less significant after accounting for influential firm characteristic indicators and various across industries. Again, likewise productivity spillovers, compensation spillovers statistically did not exist in Vietnamese manufacturing and this could be explained by similar perspectives discussed previously as well.

Additional notes

The following points are noted because these details deeply beyond the critical contexts contained in the above five sections could considerably be applicable and meaningful in understanding the several viewpoints of this literature survey paper.

- Lipsey and Sjöholm (2006) argued that firm-specific asset possession and technological and human capital intensity are the only sufficient but not necessary condition for a firm to be an MNC. Internalization is instead such necessary condition (Ramstetter and Ngoc, 2007).
- The analytical results as regards the analyses of productivity differentials and spillovers in Thai manufacturing were also drawn from the comparisons based on the assumptions of Cobb-Douglas or translog technology production functions, as explained in the referred papers of Ramstetter (2002) and Ramstetter (2006), including Ramstetter's (2006) Tables 5.4-5.6.
- The Enterprise Law implemented in 2000 in Vietnam has had a profound effect on state-owned enterprises through privatization and consolidation, not on MNCs. In other words, such law relatively does not influence this literature review paper.
- Producer concentration as an industry characteristic indicator that is also taken into account for analyzing influential factors can be measured by two well-known ratios, four-firm concentration (proportion of the market shares of the biggest four firms in an industry) and Herfindahl Index (proportion of summed squared market shares of the biggest 50 firms in an industry, if less than 50 in the industry, all firms are brought into consideration).
- To be more convenient in seeing certain correlations among variables, the regression equations inclusive of dummy variables were also used as one of analytical tools as obviously seen in the referred papers of Haji Ahmad (2010), Ramstetter (2006), Ramstetter and Ngoc (2007), Ramstetter and Ngoc (2008), etc.
- Those tables, as supplements, mentioned in the citations can be found in the corresponding referred papers and articles.

Bibliography

- Haji Ahmad, S. B. (2010). A Quantitative Study on the Productivity of the Manufacturing Industry in Malaysia. *PhD diss., University of Kitakyushu*, Ch. 6-7.
- Lipsey, R. E. and Sjöholm, F. (2006), Foreign MNCs and Wages in Indonesia. In E. D. Ramstetter and F. Sjöholm (Eds.), *Multinational Corporations in Indonesia and Thailand: Wages, Productivity, and Exports*, Hampshire, UK: Palgrave Macmillan, 35-53.

- Matsuoka, A. (2001). *Wage Differentials among Local Plants and Foreign Multinationals by Foreign Ownership Share and Nationality in Thai Manufacturing* (Vol. 25). ICSEAD working paper series 2001.
- Movshuk, O. and Matsuoka-Movshuk, A. (2006). Multinationals and Wages in Thai Manufacturing. In E. D. Ramstetter and F. Sjöholm (Eds.), *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave Macmillan, 54-81.
- Ramstetter, E. (1999). Comparisons of foreign multinationals and local firms in Asian manufacturing over time. *Asian Economic Journal*, 13(2), 163-203.
- Ramstetter, E. D. (2002). *Does technology differ in local plants and foreign multinationals in Thai manufacturing? Evidence from translog production functions for 1996 and 1998*. Working Paper 2002-04, Kitakyushu: International Centre for the Study of East Asian Development.
- Ramstetter, E. D. (2006). Are Productivity Differentials Important in Thai Manufacturing? In E. D. Ramstetter and F. Sjöholm (Eds.), *Multinational Corporations in Indonesia and Thailand: Wages, Productivity, and Exports*. Hampshire, UK: Palgrave Macmillan, 114-142.
- Ramstetter, E. D. (2009). *Firm- and Plant-level Analysis of Multinationals in Southeast Asia: the Perils of Pooling Industries and Balancing Panels*. Working Paper, 2009-22, Kitakyushu: International Centre for the Study of East Asian Development.
- Ramstetter, E. D. and Ngoc, P. M. (2007). *Employee Compensation, Ownership, and Producer Concentration in Vietnam's Manufacturing Industries*. Working Paper 2007-07, Kitakyushu: International Centre for the Study of East Asian Development.
- Ramstetter, E. D. and Ngoc, P. M. (2008). *Productivity, Ownership, and Producer Concentration in Transition: Evidence from Vietnamese Manufacturing*. Working Paper 2008-04, Kitakyushu: International Centre for the Study of East Asian Development.
- Ramstetter, E. D. and Haji Ahmad, S. B. (2009). *Foreign Multinationals in Malaysian Manufacturing After the Crisis*. Working Paper 2009-13, Kitakyushu: International Centre for the Study of East Asian Development.
- Ramstetter, E. D. and Haji Ahmad, S. B. (2010). *Economic Downturns and Foreign Multinationals in Asian Manufacturing*. Working Paper 2010-04, Kitakyushu: International Centre for the Study of East Asian Development.
- Takii, S. (2006). Productivity differentials and spillovers in Indonesian manufacturing. In E. D. Ramstetter and F. Sjöholm (Eds.), *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave Macmillan, 85-103.