CORRUPTION AND SUBSIDIARY PROFITABILITY: U.S. MNC SUBSIDIARIES IN THE ASIA PACIFIC REGION

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Abstract

Would multinational corporation (MNC) subsidiaries be more profitable in host countries where corruption is less severe? Would MNC subsidiaries be more profitable in less corrupt countries if they focused on local sales? This paper examines the impact of the level of corruption on the profitability of US MNCs' profitability in the Asia Pacific region. Using foreign direct investment (FDI) data archived by the US Bureau of Economic Analysis and corruption data reported by the World Bank, we find that MNC subsidiaries located in countries with a lower level of corruption are more profitable. In addition, MNC subsidiaries with a greater focus on local sales are more profitable when the corruption level is low. This study contributes to the literature by showing that when local sales are important to MNC subsidiaries, a lower level of corruption by host countries positively affects the profitability of the MNC subsidiaries.

Key words: Corruption; MNC; Institutional environment

Prior research finds that corruption in a host country discourages inward foreign direct investment (FDI) (Globerman & Shapiro, 2003; Habib & Zurawicki, 2002; Lee & Oh, 2007; Meschi, 2009; Robertson & Watson, 2004; Voyer & Beamish, 2004). This is understandable in that going abroad itself is a risky endeavor and investing in a country with a high level of corruption adds even more risk. For example, Robertson and Watson (2004) argue that the prevalence of corruption adds greater risks and costs in business transactions. There is further added risk to MNCs given that the MNCs are less familiar with the local environment (Zaheer, 1995). Due to the illegal nature of bribery, a high level of corruption may incur even more costs than high tax rates in a host country (Wei, 2000). Shleifer and Vishny (1993) define corruption as "the sale by government officials of government property for personal gain." Consistent with this traditional definition, we define corruption in this study as the abuse or misuse of the positions of public officials for private gains.

With regard to institutional influences on the costs of doing businesses in a host country, previous literature has distinguished between the effects of legal institutions versus the effects of other country-level governance factors. For instance, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) emphasize the roles of the legal protections of investors based on each country's legal origin. While there are many different institutional environments affecting the profitability of MNCs, here we argue that corruption can be one important factor affecting MNC performance. The reason is that while acts of corruption such as bribery may bring immediate benefits to individual firms (Boddewyn, 1988; Lenway, Morck, & Yeung, 1996), a higher level of corruption tends to increase the level of uncertainty in doing business (Habib & Zurawicki, 2002).

While it is widely studied whether the level of corruption affects FDI, it has been less studied whether the level of corruption also affects the level of profitability once an MNC has invested in a host country. However, this is an important question given that MNCs worldwide have invested in countries with both high and low levels of corruption.

Once invested in a host country, would a host country's level of corruption be associated with the level of subsidiary performance? To take up this challenge, this paper examines the impact of a host country's level of corruption on the profitability of US MNCs' investments made in the Asia Pacific region. Here the level of corruption is defined as the extent of bribes demanded by government officials in a country. The lower the level of corruption, the less likely bribes are demanded by government officials. We specifically examine US MNCs, as when an MNC is constrained from bribing foreign government officials by the home country law the level of corruption would be an important country-level factor in determining the subsidiary profitability of the MNC.

Since it is unclear who and how much to bribe, it is not easy to do business within a high-corruption environment. Furthermore, the secrecy attached to bribery makes it harder for the firms attempting to decrease the uncertainty attached to it. Even when it is rather clear who and how much to bribe, it is a kind of onerous tax adding costs in doing business (Doh, Rodriguez, Uhlenbruck, Collins, & Eden, 2003; Lee & Oh, 2007; Shliefer & Vishny, 1993). For example, President Suharto of Indonesia was often referred to as "Mr. Ten Percent" because it was widely known that paying ten percent of a deal to the government would guarantee business in Indonesia (Wei, 2000). Thus, we posit that, other things being equal, the higher costs incurred by a high level of corruption would restrict the average profitability of subsidiaries in a host country, compared with the profitability of subsidiaries operating in countries with less corruption.

Overall, to the best of our knowledge, this study is the first attempt to examine the impacts of corruption on MNCs' subsidiary profitability in the Asia Pacific region.

Hypotheses

In the FDI literature, location choices were critical in the success of foreign investment endeavors. For example, conventional wisdom of existing FDI theories, such as the OLI (ownership-location-internalization) paradigm (Dunning, 1998), particularly emphasizes the importance of location choices for the success of an FDI. In particular, the fit of institutional environments between host and home countries, including governance infrastructure, are identified as critical determinants of FDI flows and performance (Globerman & Shapiro, 2003; Habib & Zurawicki, 2002; Luo & Park, 2001). Operating in a country with a high level of corruption would restrict the profit-generating opportunities by raising the costs of doing businesses in the country.

Shleifer and Vishny (1993) provide three rationales that doing businesses in a corrupt country would be more costly. First, countrywide corruption would make control and coordination by the central government weaker. When the control of the central government is weak toward various regulatory government agencies, foreign investors are under cumulative bribe burden on numerous government officials (Shleifer & Vishny, 1993). Second, by definition, bribery demands secrecy as it is usually illegal. Government officials' needs for keeping secrecy would distort the direction of policy, because they must provide policy favors for the firms participating in the business which offers better opportunities for secret corruption. Thus, foreign investors have to choose the business where secrets are well-kept should they want to exploit the benefits of bribery. Third, governments in corrupt countries are hostile to change and innovation

(Shleifer & Vishny, 1993). It would be easier for corrupt governments to keep corruption secret if they prevent the entry of new firms.

Considering firm heterogeneity in regards to dealing with corrupt governments, one might argue that higher levels of corruption will not always lead to lower levels of subsidiary profitability. One might argue that MNCs could enjoy firm-specific advantages by bribing government officials in regulated industries within a corrupt host country. However, this argument implicitly assumes that MNCs are willing and able to bribe. In the case of US MNCs, the Foreign Corrupt Practices Act (FCPA) of 1977 strictly prohibits US firms from bribing foreign government officials; firms or their officers will be penalized with fines or jail terms if they bribe foreign government officials (Wei, 2000). In this sense, US MNCs have much less incentives to gain political favors by bribery in corrupt host countries. Even if foreign government officials require bribery, US MNCs could rely on the FCPA excuse that "I am sorry, I can't bribe. If I do, I will go to jail" (Wei, 2000: 2). In cases where the FCPA excuse would not work well, US MNCs' subsidiary profitability might be heavily dependent on each host country's level of corruption. In other words, under the constraint of the FCPA, US firms would be able to reduce the costs of doing business in countries where the level of corruption is low. If the host country's central government is not effective in monitoring and controlling corruption, or government officials at the central government agencies themselves are corrupt, foreign investors have to waste time negotiating with government officials. In addition, if corruption tendency is ubiquitous in countries where the regulatory agencies enjoy excessive and discretionary power, the uncertainties created by discretionary regulatory power will add significant costs to doing businesses in these countries (Habib & Zurawicki, 2002; Peng, Sun, Pinkham, & Chen, 2009; Peng, Wang, & Jiang, 2008).

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In addition, US MNCs are less familiar with corrupt transactions such as paying bribes in the home market. For this reason, compared to MNCs from countries with a higher level of corruption, US MNCs are less able to pay the right amount of bribes to the right person who can provide preferential treatment in the host countries. Therefore, even when US MNCs would want to pay bribes it would be more costly to do so. Conversely, we argue that US MNC subsidiaries may be able to do better when the level of corruption is low in a host country. Formally:

Hypothesis 1 The lower the level of corruption in a host country, the higher the average profitability of US MNCs' subsidiaries in the host country will be.

Unlike domestic firms, MNCs are less embedded actors in the host country's institutional environment (Zaheer, 1995). While being less embedded in a host country can be a weakness, it can also be a strength. In particular, MNCs are more likely to have alternative investment opportunities than local firms as MNCs possess location choice flexibility over local firms. For example, alternatives such as exporting to home countries and the rest of the world are usually easier for MNCs compared to their domestic counterparts.

Past research shows that exporting firms may tap into new capabilities which would lead to better performance (Clerides, Lach, & Tybouts, 1998; Salomon, 2006). Given that consumers in different countries have different preferences, firms that are selling overseas have to tailor their products to different consumer preferences (Vernon, 1966). Repeated interactions with foreign consumers and competitors would also provide access to new technologies for exporting firms (Grossman & Helpman, 1991).

Some might argue that the knowledge gained from exporting may also spillover to domestic sales, increasing both exports and domestic sales. Past research finds that this is the case for domestic firms but not MNCs. With more options outside the host country where subsidiaries are

located, many MNCs focus this knowledge toward export outside the host country (Lee & Makhija, 2009; Salomon & Shaver, 2005). In other words, while domestic sales and exports are *compliments* for domestic firms, the two are *substitutes* for MNCs considering their location choice flexibility. For example, MNC subsidiaries not only have the option of exporting to a third party, but also have the option to sell products to the MNC headquarters and the rest of the subsidiaries around the world (Allen & Patzalis, 1996). For this reason, knowledge gained from export experience would be more utilized toward exports than domestic sales for MNC subsidiaries. Therefore, those MNC subsidiaries with higher levels of local sales would see less knowledge accumulated from exports and lower levels of performance.

In addition, most Asian countries are small in size as well as the level of consumption. Relying on a small host country's consumption level makes MNC subsidiaries less able to enjoy economies of scale, which is one of the important sources of profits. Furthermore, focusing on the host market's consumption would make the MNC subsidiaries more adapted to local environments. Becoming adapted to local environments may mean that the products made at the MNC subsidiaries are less likely to be sold outside the host country's market. This is why Rangan (1998) suggests that even when MNC subsidiaries try to flexibly export outside the host country, those subsidiaries with strong local market orientation would have difficulty doing so.

Furthermore, those MNC subsidiaries more interested in satisfying local preferences may have less interaction with the rest of the subsidiaries of a MNC, which would make it even harder to tailor their products to the taste of consumers in other countries. For this reason, MNCs with more focus on the domestic markets of host counties would be less likely to perform better than those with emphasis on outside the host market. Thus, we argue:

Hypothesis 2 The higher the local sales ratio in a host country (the ratio of local sales in a host country over total sales of the subsidiary), the lower the average profitability of US MNCs' subsidiaries in the host country will be.

The role of local sales on profitability, however, might change in corrupt countries. While we argue that high local sales would be associated with lower level of profitability, in countries with low levels of corruption, MNC subsidiaries with high levels of local sales might be more profitable compared to their counterparts with low levels of local sales. The reason is that when the local sales portion is high, MNCs have larger stake in the local market rather than foreign markets. Should bribery be prevalent, high local sales provide incentives for host government officials to demand bribes (Makihja, 1993). The reason is that while bribery is costly at the societal level (Mauro, 1995; Rose-Ackerman, 1999), receiving bribes can bring immediate private benefits to government officials.

Given that MNCs have less incentive to bribe even in corrupt countries, MNCs would perform better in a host market environment where the level of corruption is low. Compared to local firms, MNCs are less informed about who and how to bribe. For this reason, in a more corrupt host country, MNCs may have a considerable disadvantage compared with local firms. On the other hand, when the level of corruption is low, MNCs would be less likely to lose deals because they did not pay bribes.

In addition, from the MNC's perspective, the level of corruption becomes more critical when a host country is strategically important. For example, Dunning (1998) distinguishes the types of FDI location motivation between market seeking and efficiency seeking. Market-seeking FDI and efficiency-seeking FDI are fundamentally different in that efficiency-seeking FDI does not require that MNCs commit to host country's embedded investments (Song, 2002).

An MNC with only efficiency-seeking investments in a host country tends to have more flexibility in switching its operating locations than an MNC with market-seeking investments (Kogut & Kulatilaka, 1994).

When a host country is merely an exporting platform to third countries from the perspective of the focal MNC, the extent of corruption in the host country would be of less concern for operations in the host country. Since each host country's government has incentives to attract capital inflows from foreign firms, MNCs have relatively higher bargaining power in host countries used as exporting platforms. However, if the main motivation for investing in a host country is to serve the local market, the costs added by corruption would be much more severe because MNCs are required to behave as embedded actors in local institutional environments. In that case, MNCs are pressured to bribe in the same fashion they pay taxes (Wei, 2000) even in cases where MNCS possess superior technological or size advantages by which they can realize economies of scale.

In addition, in an environment with a high level of corruption, those firms that pay bribes would receive preferential treatment from the local governments. Past research finds that MNCs savvy on dealing with a host country's governments are more likely to obtain better deals, which positively affects the bottom line (Boddewyn, 1988). As Murphy, Shleifer, and Vishny (1993: 409) argue, an increase in corrupt activities in a country makes corrupt behaviors more attractive; "the probability of any one … getting caught is much lower" when more people are bribing. For this reason, in a country with a high level of corruption, MNC subsidiaries would be less likely to be caught for bribing.

Given that US MNCs are less seasoned at bribing and have less incentive to do so due to domestic legal restrictions, a high level of corruption may hamper the bottom line. In addition,

local governments are more keen on business with larger sales in the domestic market (Makhija, 1993). As larger sales in the host country means that the MNC has more at stakes should things go wrong, there would be more incentive to pay bribes when requested by local government officials. Therefore, for the US MNCs, a low level of corruption would provide a fair chance to compete in the host country's market. Based on the above discussions, we argue:

Hypothesis 3 Local sales will moderate the relationship between the level of corruption and the average profitability of US MNCs' subsidiaries in the Asia Pacific region in such a way that there will be a negative interaction effect between the level of corruption and local sales ratio on the level of profitability of MNC subsidiaries.

Model Specification

In order to test the three hypotheses suggested in the previous section, we employ the following regression models:

$$ROS_{ijt} = \alpha_0 + \alpha_1 * X_{ijt-1} \qquad \text{(control variables only model) (1)}$$

$$ROS_{ijt} = \beta_0 + \beta_1 * (\text{Level of Corruption}_{it-1}) + \beta_2 * (\text{Local Sales Ratio}) + \beta_3 * X_{ijt-1}$$

(main effect only model) (2)

$$ROS_{ijt} = \gamma_0 + \gamma_1 * (\text{Level of Corruption} * \text{Local Sales Ratio}) + \gamma_2 * (\text{Level of Corruption}) + \gamma_3 * (\text{Local Sales Ratio}) + \gamma_4 * X_{ijt-1}$$

(full model with interaction term) (3)

where:

ROS_{ijt} = Average return on total sales of the US majority-owned subsidiaries in the host country i, doing business in industry j at year t.

X_{ijt} = Vector of control variables in the host country i in industry j at year t, if applicable.

α_k, β_k, γ_k = Vector of slope coefficients of control variables, including industry and year dummies.

This study employs a feasible generalized least square (FGLS) estimation model to control for heteroskedasticity and serial correlation problems as shown in our panel sample. Before we finalize the FGLS model with heteroskedasticity and panel-specific AR(1) corrections, we checked the heteroskedasticity and serial correlation statistics by using a log likelihood test and the Wooldridge (2002) test. The p-values for each test confirm that our sample has both heteroskedasticity and serial correlation problems.[1] In order to address these problems, we used the "xtgls" procedures provided by the STATA 9.0 program with "panels(hetero)" and "corr(psar1)" options.

Data and measurement

Sample description

This study uses FDI data provided by the US Bureau of Economic Analysis (BEA), which is affiliated with the US Department of Commerce. The BEA conducts annual surveys and regular benchmark surveys to analyze trends for US MNCs' FDIs. Among several survey categories, the "majority-owned foreign affiliates" section of the survey provides the most detailed information about the financial and operating results of US MNCs' subsidiaries. We specifically use only majority-owned US subsidiaries in our sample because cooperative relationships with local

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[1] P values for heteroskedasticity test and autocorrelation test were 0.0000 and 0.0001 respectively.

partners might mean that the relationship with host government officials can be deferred to local partners.

To collect information on the dependent variable and several control variables, this study focuses on the profitability of majority-owned subsidiaries. Therefore, we implicitly control for the entry modes of US MNCs' FDI by selecting our sample. By using a majority-owned subsidiary sample, we also control for the effect of local partners on joint ventures (JVs) in host countries.

Following the country classification of BEA data 13 host countries are included in this study. Out of 13, tencountries are East Asian countries,[2] one country (India) is a South Asian country, and two countries are South Pacific countries (Australia and New Zealand). For industry classification we followed the North American industry classification system (NAICS) which has been extended from the standard industry classification (SIC) system. According to the NAICS, seven industry categories are identified, including, food, chemical, primary, machinery, computer and other electronics, electrical equipments, and transport equipments. Variables used in our model are summarized in Table 1.

[Insert Table 1 here]

Dependent variable

Our dependent variable ROS_{ijt} is operationalized by the ratio of the total net income of US MNCs' majority-owned subsidiaries in country I, industry j, at year t, divided by the total sales of US MNCs' majority-owned subsidiaries in country I, industry j, at year t. The BEA website releases financial and operating data collected from its annual "US Direct Investment Abroad"

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[2] These East Asian countries are China, Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand.

survey. In order for us to collect comparable data across multiple years, we use the period from 1999 to 2006 since the BEA used the NAICS system for that period.

The subsidiary level return on total sales (ROS) variable has been used in previous studies (Makino, Isobe, & Chan, 2004), and it is a better measure of subsidiary profitability for our study than return on total assets (ROA) because some of the control variables of our model are directly correlated with the ROA variable.

Independent and moderating variables

Our proxy of measuring the level of corruption is the variable 'CORRUPTION', which has been compiled by the World Bank "Governance matters VII" project (Kaufmann, Kraay, & Matsutruzi, 2008). The World Bank has compiled the worldwide governance indicators (WGI), measuring perceptions of country level governance drawn from 35 data sources constructed by 32 different organizations around the world (Kaufmann et al., 2008). Out of the six WGI dimensions, control of corruption represents the reverse indicator of the level of corruption. Dam (2006) points out that the World Bank governance study has distinctive value in the sense that legal origin itself cannot be controlled by host country governments. In particular, Dam (2006) suggests that corruption is an important governance dimension which has been understudied in the traditional law and finance literature.

CORRUPTION variable measures the country level perception on the extent of control over exercising public power for private gain, which is the reverse indicator of the level of corruption. Another possible proxy for country level corruption measurement is the corruption perception index (CPI) compiled by Transparency International (TI). Considering that the correlation coefficient between CORRUPTION and CPI is extremely high (0.98), we only used

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CORRUPTION for our estimation, primarily because the World Bank governance indicators are constructed from more comprehensive data sources.

Another explanatory variable is the local sales ratio (LOCAL). According to previous international business studies, FDI motivation is a very important determinant of FDI performance. For instance, Luo and Park (2001) argue that the motivation of FDI should be aligned with the environmental conditions of the host country in order to outperform local competitors. In a similar vein, Nachum and Zaheer (2005) distinguish between local market-seeking FDI and low-cost export platform FDI in their study using BEA benchmark survey data, because export platform FDIs have low incentive to make country-specific, fixed-costs investments. We measure the local sales ratio as a US MNCs' subsidiary sales within the focal host country divided by the total sales of a US MNCs' subsidiary in the host country. In addition, to test Hypothesis 3, we created the interaction term (CORRUPTION*LOCAL) between CORRUPTION and LOCAL. Since the variable CORRUPTION is the reverse indicator of the level of corruption, a significantly positive result of the interaction term means a negative interaction effect as Hypothesis 3 predicts. In order to reduce the possible multicollinearity problem, we used the mean-centered interaction term. The diagnostic statistics, variance inflation factors, show that there are no serious multicollinearity problem between the main variables and the interaction term.

Control variables

Origin of law (LAW) La Porta and colleagues (1998) point out that several important characteristics of governance infrastructure such as legal enforcement, creditor rights, and one share-one vote rules have been strongly influenced by the origin of each country's law system.

According to their study, English-origin common law families ensure higher institutional safeguards than those of French or German origin. In this study we posit that, in host countries under the same legal regime as the home country, US MNCs would experience fewer liabilities of foreignness. We coded 1 if the host country shares the same legal origin as the US, or 0 otherwise.

Host country market size (HOSTGDP) As the first control variable among several location specific advantage factors, this study controls for the host country's market size following Globerman and Shapiro (2003). We measure the host country market size by the natural logarithm of real gross domestic product (GDP).

Compensation per employee (WAGE) As the second control variable for location advantage, we control for the cost per employee. Cost per employee is measured as the ratio of total compensation (millions of dollars) in host country i, industry j, at year t divided by the number of employees (thousands of employees) in country i, industry j, at year t. As Globerman and Shapiro (2003) point out, this wage variable may not be a good proxy for unit labor cost and would be highly correlated with industry level labor productivity in the focal host country. However, since we only controlled for the total potential market size and not for the purchasing power per capita (i.e., GDP per capita), the cost per employee variable can at least capture the relative importance of wage cost portion on subsidiary profitability.

Corporate tax rate (TAX) Since our dependent variable used net income (an after-tax earning measure) for calculating ROS, this study needs to control for corporate tax rate variations across

countries. We utilized country level statutory corporate tax rates as calculated by Djankov, Ganser, McLiesh, Ramalho, and Shleifer (2009) defined as the tax rate for the highest bracket of all taxes on corporate income.

US industry R&D intensity (RND) To control for industry level technological investments, we used industry level R&D expenditure as a percentage of the industry total sales. This data has been reported in "Research and Development in Industry" which is a publication of the National Science Foundation (NSF); the data is classified by NAICS industry codes.

Investment size (INV SIZE) To control for investment size by industry in each host country, we measure investment size as the natural logarithm of the total assets in country i, industry j, at time t. If the absolute size of investment in the host country is large, we can predict that subsidiaries may enjoy a size advantage when competing against competitors in the host country. In addition, we control for industries and years by adding dummy variables to capture unobservable heterogeneities that other variables in the model might not capture.

Results

Correlations between variables are reported in Table 2. Before conducting regression analysis, we examined the multicollinearity assumption. Variance inflation factors (VIFs) indicate no serious multicolliniarity problems among the variables in our model. No VIF was greater than 5.71 and the average VIF was approximately 2.44.

[Insert Tables 2 and 3 about here]

The primary results for our model are found in Table 3. As shown in Model 1, FGLS results with control variables indicate that investment size (INV SIZE) is a significant positive determinant of the subsidiary profitability of US MNCs in 13 Asia Pacific countries, while host market size (HOSTGDP), US industry level R&D intensity (RND), and host country corporate tax rate (TAX) show significant negative effects on subsidiary profitability. In Model 2, our primary explanatory variable CORRUPTION shows positive coefficients that are statistically significant ($p < 0.001$). Therefore, consistent with Hypothesis 1, we find that the host country's level of corruption is negatively associated with the average profitability of US MNCs' subsidiaries in the Asia Pacific region. In other words, US MNCs show higher average profitability in less corrupt host countries. In addition, consistent with Hypothesis 2, another explanatory variable LOCAL shows a negative significant result ($p < 0.001$). However, in the full model with the interaction term (Model 3), the interaction term between level of corruption (CORRUPTION) and local sales ratio (LOCAL) does not show a statistically significant result. Thus, our Hypothesis 3 was not supported.

In our full model including all variables, unlike the predictions based on conventional wisdom, most control variables did not show statistically significant impacts on subsidiary profitability. Only INV SIZE, a proxy for measuring investment size, shows consistent positive impacts on subsidiary profitability ($p < 0.05$). All proxies for host country specific location advantages, HOSTGDP, TAX, and WAGE did not show statistically significant results. LAW, a legal origin variable also did not show statistically significant result.

Discussion

Our study contributes to the international business literature in three ways. First, we provide a theoretical rationale that an MNC's high dependence upon the host country local market may

worsen the adverse impacts of the level of corruption. Although empirical results on the Asia Pacific region do not support our Hypothesis 3, it would be worthwhile to note that the LOCAL variable shows significant and negative effects on US MNCs' subsidiary profitability in the full model (Model 3). This result indirectly implies that subsidiary profitability is higher when a US MNC invested in a host country for the purpose of serving other foreign markets than aiming at the host country as the main source of revenue.

Second, we explicitly test whether the country level corruption affects FDI performance. Empirical results in this study imply that when the level of corruption in a host country is high, FDI performance will be significantly lower than in countries with a low level of corruption.

Third, our empirical results hint that country-level governance quality such as the level of corruption may have stronger impacts on subsidiary profitability than traditional location advantage variables such as host country market size. Interestingly, in terms of the relative importance of governance infrastructure dimensions, the level of corruption shows a significantly negative effect on subsidiary profitability, while the legal origin variable does not show any significant effect.

We also find that when US MNCs are more local market oriented, a low level of corruption is associated with better subsidiary performance in the host country. This has important implications for US MNCs. When MNCs are less local market oriented and more oriented toward markets other than those of the host country, MNCs would be able to enjoy greater bargaining power vis-à-vis local governments. When US MNCs are able to possess greater bargaining power, they would be less likely to be subject to corruption. A higher level of bargaining power possessed by MNCs can mitigate the negative impacts of corruption in a host market on firm performance.

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This greater bargaining power can come from the fact that MNCs are more oriented toward markets other than that of the host country. When MNCs are more local market oriented, it is very likely that the MNC subsidiaries are more adapted to local environments and have fewer options outside the host market. In this situation, MNCs that are less inclined to pay bribes face huge disadvantages in host countries with a high level of corruption.

It is interesting that our Hypothesis 3 arguing that, in a host country with important local market, a higher level of corruption would be associated with lower performance is not supported. Potentially, US MNC subsidiaries in Asia may not gain much knowledge from export. Many US MNCs have invested in Asian countries to take advantage of low manufacturing cost. If the main purpose of investing in Asia is to take advantage of low cost production costs, US MNCs may produce mostly standardized products that would require less knowledge (Vernon, 1966). In addition, possibly local procurement requirements implemented in many countries in Asia may provide reasons to be friendly to US MNC subsidiaries which are mainly serving local markets. Furthermore, should the MNC subsidiaries quench the demand that are not satisfied by local producers, there might be little reasons to be hostile to them especially when local competition is practically non-existing.

This study has several limitations as well. First, in measuring subsidiary profitability and O (ownership specific advantage) control variables we rely on industry-level proxies. Our study is not about the test of the effects of firm-level heterogeneity on firm-level FDI performance. Second, as acknowledged in the Hypotheses section, it is reasonable to predict that the ability to mitigate the negative impacts of country level corruption would vary even across firms from the same home country. Future research needs to consider prior experience effects on subsequent FDI performance. When an MNC possesses prior experience in a host country whose corruption

level and patterns are similar to those of the target country, the MNC could utilize its prior experience dealing with corruption to reduce the various costs it could incur. If that is the case, firm-level heterogeneity would determine the impacts of corruption on FDI performance. Third, proxies for corporate tax rate control and wage control in our model may not be the best proxies for measuring location advantage factors. As Globerman and Shapiro (2003) point out, the main reason why our TAX and WAGE variable did not show statistically significant results might be because our measurements did not accurately reflect unit labor costs and marginal tax rate aspects adequately. Fourth, we could not compare the relative effect of corruption with other institutional variables such as economic distance and cultural distance, mainly due to high correlation between the corruption variable and those institutional variables. One of the possible reasons might be that the focus on the Asia Pacific region in this study. Analyzing other countries with high economic and cultural distance from the United States, but with low corruption levels would be an interesting complementary study.

Conclusion

Our study shows that US.MNCs' subsidiaries in the Asia Pacific region would enjoy higher profitability in host countries with lower levels of corruption. Although subsidiaries in host countries with high local sales ratios receive lower profits, there was no significant interactive effect between corruption and a local market-seeking orientation. Future studies considering firm-level heterogeneity and a wider scope of host countries will be able to extend the arguments discussed in this paper.

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Table 1 Variables, definitions, and data sources.

Variable	Definition	Data Source
Subsidiary Profitability (ROS)	Net income/total sales of country i, industry j, at year t	Bureau of Economic Analysis Annual Survey
Level of Corruption (CORRUPTION)	Perceived measure on the level of corruption among officials and extent of bribery	World Bank
Local Sales Ratio (LOCAL)	Ratio of (sales to host country i) / (Sales by subsidiaries in host country i)	Bureau of Economic Analysis Benchmark Survey
Origin of Law (LAW)	Dummy variable = 1 if the host country share the same origin of law with United States	La Porta et al. (1998)
Host Country Market Size (HOSTGDP)	Natural logarithm of real Gross Domestic Product of country i	World Bank
Corporate Tax Rate (TAX)	The tax rate for the highest bracket of all taxes on corporate income	Djankov et al. (2009)
Compensation per Employee (WAGE)	Total compensation / Number of dmployees in country i, industry j, at year t	Bureau of Economic Analysis Annual Survey
US Industry-level R&D Intensity (RND)	Ratio of industry level R&D expenditure divided by industry total sales	National Science Foundation
Investment Size (INV SIZE)	Natural logarithm of total assets in country I, industry j, at year t	Bureau of Economic Analysis Annual Survey

Table 2 Descriptive statistics and correlation matrix.

		Mean	SD	1	2	3	4	5	6	7	8
1	ROS	5.472	8.925	1							
2	CORRUPTION	0.616	1.078	0.193***	1						
3	LOCAL	0.605	0.225	-0.240***	-0.046	1					
4	LAW	0.538	0.498	0.116**	0.419***	-0.309***	1				
5	HOSTGDP	27.154	1.151	-0.128**	- 0.407***	0.652***	-0.517***	1			
6	TAX	29.53	6.238	-0.202***	-0.319***	0.675***	-0.367***	0.678***	1		
7	WAGE	25.124	20.227	0.074	0.638***	0.365***	-0.131***	0.127**	0.191***	1	
8	RND	4.037	3.389	-0.139**	-0.005	-0.021	-0.002	-0.046	-0.042	0	1
9	INV SIZE	6.154	1.863	0.142***	0.132**	0.134**	-0.120**	0.325***	0.072	0.317***	0.440***

Notes: Observations N = 553.

$*\ p < .05, **\ p < .01, ***\ p < .001$.

Table 3 FGLS estimates of regression on subsidiary profitability (ROS).

	Model (1): Controls	Model (2): Controls + Main	Model (3): Controls + Main + Interaction Term
	Coefficients (Standard errors)	Coefficients (Standard errors)	Coefficients (Standard errors)
Level of Corruption (CORRUPTION)	-	1.338 ***	1.381 ***
		(0.378)	(0.372)
Local Sales Ratio (LOCAL)		-11.180 ***	-11.242 ***
		(1.387)	(1.431)
CORRUPTION * LOCAL	-	-	-0.054
			(1.371)
Origin of Law (LAW)	0.310	-1.015	-1.042
	(0.503)	(0.635)	(0.673)
Host Market Size (HOSTGDP)	-0.870 **	0.463	0.450
	(0.324)	(0.401)	(0.432)
Corporate Tax Rate (TAX)	-0.114 *	0.059	0.064
	(0.048)	(0.057)	(0.074)
Compensation Per Employee (WAGE)	-0.009	-0.023	-0.025
	(0.011)	(0.018)	(0.018)
US Industry R&D Intensity (RND)	-0.209 **	-0.132	-0.135
	(0.071)	(0.076)	(0.076)
Size of Investment (INV SIZE)	1.189 ***	0.462 *	0.459 *
	(0.181)	(0.201)	(0.200)
Industry Dummies	Included	Included	Included
Year Dummies	Included	Included	Included

Wald Chi Square	1257.35***	294.95***	299.18***
Prob. > Chi Square	0.0000	0.0000	0.0000
Observations (N)	553	553	553

Notes: Observations N = 553.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.