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Reliance on Foreign Markets: Multinationality and Performance

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Reliance on Foreign Markets: Multinationality and Performance

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To our families

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Reliance on Foreign Markets: Multinationality and Performance

Abstract This study examines the relationship between multinationality and the performance of Japanese manufacturing companies over the period 1999–2008 by using geographic segment information. Despite the enormous interest in and importance given to multinationality from the academic and business worlds, prior findings about the multinationality-performance relationship are conflicting and inconsistent. Our overall results show that multinationality has a positive impact both on accounting performance and market-based performance. In additional tests, Japanese electric and electronic equipment companies' reliance on the Asian market has a negative impact on profitability and no significant impact on firm value, whereas reliance on other foreign markets such as the Americas and the EU has a positive impact on profitability and firm value. The multinationality-performance relationship cannot be generalized, and varies among geographic regions. We contribute to both the multinationality-performance literature and geographic segment reporting literature by offering empirical evidence about Japanese manufacturing companies in comparison to prior findings about US companies.

Keywords Multinationality • Profitability • Firm value • Japanese manufacturing firms • Foreign sales

1 Introduction

Does reliance on foreign markets make a difference? Due to the rapid globalization of the world economy, an increasing number of companies are trying to take advantage of growth opportunities offered by international market. Japanese manufacturing companies are no exception to this trend. In fact, they may be a perfect example of how multinational companies are benefiting from increasing international opportunities. Japanese manufacturing companies have a long history of possessing superior technical capabilities and making high-quality products. Throughout most of the 1990s, although the Japanese domestic market was suffering from post-bubble

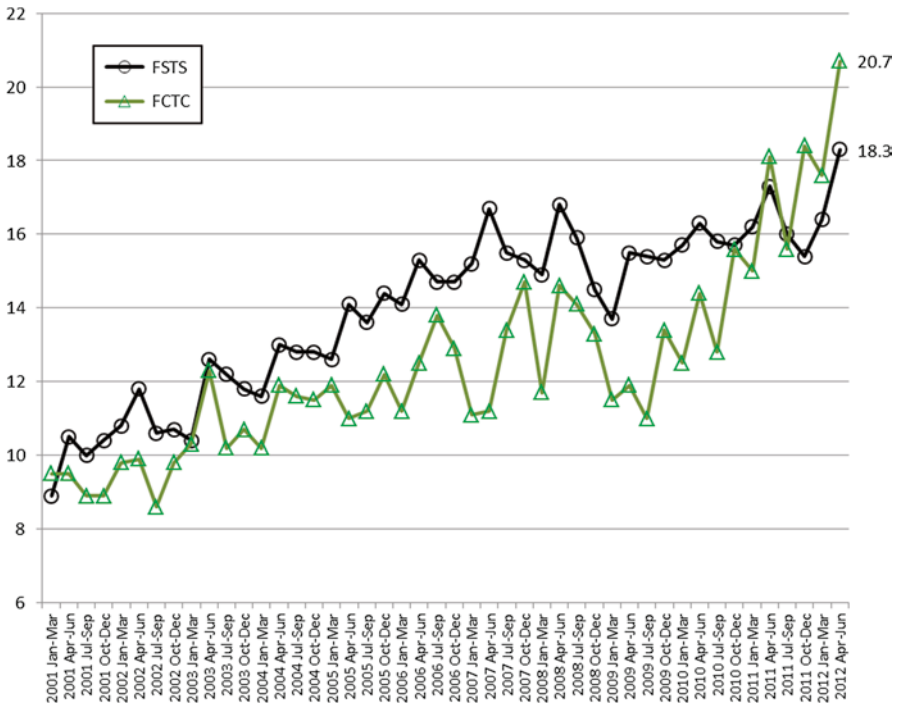


Fig. 1 Foreign sales to total sales ratio (FSTS) and foreign capital expenditure to total capital expenditure ratio (FCTC) of Japanese manufacturing firms (%). *Source:* “Quarterly survey of overseas subsidiaries,” Ministry of Economy, Trade and Industry. FSTS: Foreign sales to total sales ratio = Foreign sales / (Foreign sales + Domestic sales). FCTC: Foreign capital expenditure to total capital expenditure ratio = Capital expenditure in foreign countries / (Capital expenditure in foreign countries + Capital expenditure in Japan)

economic slowdown along with an aging population,¹ Japanese multinational companies aggressively expanded their business into foreign markets, becoming some of the top foreign investors in the world. In fact, in 1999, one third of the Japanese manufacturing companies generated over 10 % of their revenue from overseas markets, and this number has continued to increase. Figure 1 indicates the evolving trend of Japanese manufacturing firm’s overseas activity over the period of 2001 first quarter to 2012 second quarter. One line indicates foreign sales to total sales ratio (FSTS). The other line shows foreign capital expenditure to total capital expenditure ratio (FCTC). In fiscal year 2001, both FSTS and FCTC are below 10 %. Except during global financial crisis, they steadily increase with some seasonality. In the second quarter of year 2012, FSTS is 18.3 % and FCTC records 20.7 %. These data clearly demonstrate that Japanese manufacturing firms tend to rely even more on foreign markets both for consumption and manufacturing purposes.

¹According to *World Health Statistics 2012* published by World Health Organization (WHO), Japan has the highest rates of life expectancy among the 193 countries in the world.

Looking at individual firm cases, in fiscal year 2012, SONY reported that 67.6 % of the company sales came from foreign sales and export. Similarly, HONDA reported 66.5 %, and Canon reported 56.4 % respectively. Nintendo's FSTS was as high as 77.1 % in year 2012.

In the early 2000s, with the help of growing exports and overseas activities by multinational companies, the Japanese economy was able to recover from its post-bubble economy. As indicated above, rapid growth in the exports and foreign sales of Japanese multinationals had a considerable impact on the Japanese economy as a whole. So, how does multinationality, the extent to which firms undertake value-adding activities in different foreign markets, impact individual firm performance? Does it generate higher profitability for Japanese manufacturing firms? Do investors value multinationality? The primary interest of our study is to find answers to these questions.

The question of whether multinationality enhances performance remains unanswered. While the question has long been in the interests of scholars of international business and management, their research findings are rather inconsistent (Hennart 2007). Some found a positive relationship between multinationality and performance (Grant et al. 1988; Tallman and Li 1996), while others found that multinationality has an insignificant or negative impact on performance (Morck and Yeung 1991; Denis et al. 2002). Another group of scholars found an inverted U-shaped relationship between multinationality and performance (Hitt et al. 1997; Gomes and Ramaswamy 1999). They argued that multinationality has a positive effect on performance in the early stage, and that this positive effect starts to diminish as multinationality grows further.

It is likely that the conflicting findings of prior studies are partly due to their inconsistency in research models, data samples, or measurement proxies for multinationality or performance. We also presume that the relationship between multinationality and performance varies by time and region because of the ever-changing environment of the global economy and different growth stage of countries. Thus, another purpose of our study is to offer supplementary and comparative empirical evidence about the relationship between multinationality and performance by updating the latest available data for Japanese manufacturing companies and using the most common research models and proxy measures among prior studies. Although a number of studies have provided empirical evidence about Japanese multinationals, they mostly focused on accounting-based performance measures, while international studies have used both accounting- and market-based performance measures. We adopt both accounting profitability measures and market-based value measures. Furthermore, since segment reporting became publicly available from fiscal year 1999² in Japan, empirical evidence prior to that mostly used relatively uncommon proxy measures such as the number of foreign subsidiaries or foreign host countries. This study adopts information from geographic segment information reporting.

Our main findings are threefold. First, multinationality has a positive impact on accounting profitability. Second, multinationality has a positive impact on firm value. Third, our regional breakdown analysis shows that the multinationality-performance relationship cannot be generalized, and that it varies among geographic regions. Reliance on the Asian market has a negative impact on profitability and no

²From fiscal year 1999, segment reporting is available on Nikkei's "NEEDS-Financial QUEST" database, our main data source.

significant impact on firm value, while reliance on other foreign markets such as the Americas and the EU has a positive impact on profitability and firm value. These results are robust to alternative definitions of multinationality, accounting profitability, and firm value. We contribute to the multinationality-performance literature by offering empirical evidence about Japanese manufacturing companies in comparison to prior findings about US companies.

The rest of the paper is organized as follows. Section 2 explains economic factors surrounding overseas business of Japanese multinational companies. Section 3 reviews prior studies by considering (1) theoretical arguments about benefits and costs of multinationality and (2) empirical evidence on the multinationality-performance relationship. Section 4 formulates hypotheses about the multinationality-performance relationship in Japanese manufacturing companies. Section 5 describes our sample and regression models. Section 6 documents a significantly positive relationship between multinationality and profitability and identifies a significantly positive relationship between multinationality and firm value. Section 7 checks the robustness of the results by testing alternative proxies for multinationality and performance measurements. Additionally, this section retests our main regression analysis by breaking down overall foreign market penetration into geographically different areas: Asia, the Americas, and Europe. These geographic effect tests are an attempt to offer additional research ideas, but could also provide some support for the robustness perspective. Section 8 concludes our study by comparing the results with prior studies of US multinationals.

2 Economic Backgrounds on Overseas Operations of Japanese MNC

During the past two decades, Japanese companies have actively expanded their business into foreign markets through exports and foreign direct investments (FDI). Main economic factors behind this trend are strengthening of yen, “Endaka” throughout most of the 1990s, “Endaka” driven active FDI movements, post-bubble economic slowdown in Japan and growing demand from international market especially from emerging markets like China. In this section, we look into these economic changes in details.

As we all know, the Plaza Accord in September 1985 has caused drastic yen appreciation, virtually doubling its value relative to US dollar in just few years. Appreciation of yen kept it steady through the 1990s, hitting its highest record of under 80 yen per dollar in April 1995. This trend of “Endaka” forced and encouraged Japanese companies to expand into overseas market through foreign direct investment (FDI). Especially exporting companies urged to move their production bases into foreign countries as “Strong Yen” severely hurt price competitiveness of Japanese manufacturing companies. In the wake of Lehman Brothers collapse and the global financial crisis, the history is repeating itself in the recent days since Japanese Yen is taking the next round of rapid appreciation. In fact, we see news or announcements about more and more Japanese exporting companies further shifting their manufacturing into overseas,

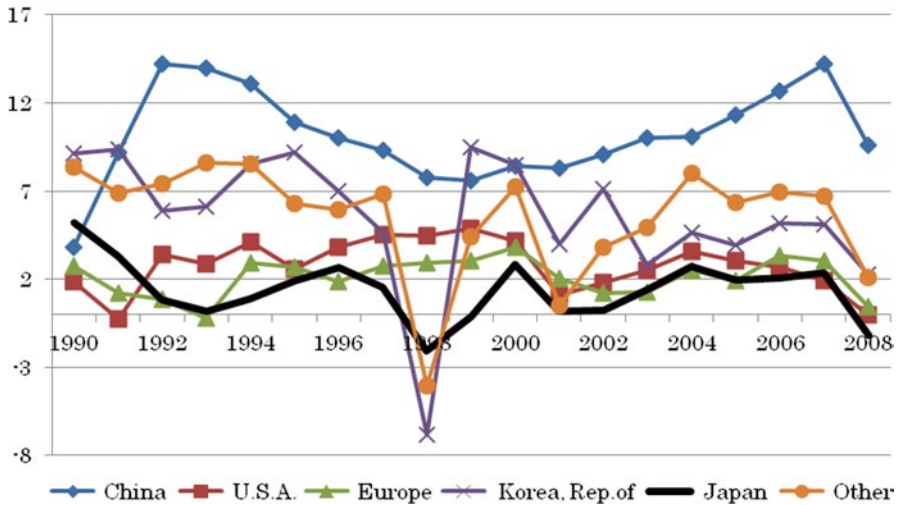


Fig. 2 Annual GDP growth rate (%). Major export destinations of Japan (1990–2008). *Sources:* World Bank, database and International Monetary fund, International Financial Statistics (based on constant 2000 U.S. dollars)

especially to emerging countries where production costs are lower, to combat strong yen. Using firm-level panel data for Japanese companies from 1994 to 2000, Kiyota and Urata (2005) find a proof and weighed an importance on this characteristic of Japanese exporting firms. They show that coexistence of export and FDI are significant among Japanese companies, arguing that exporting companies decide whether or not to undertake FDI, not firms choose either to exports or FDI. They also argue that multinational companies with large FDI outflows contribute significantly to the growth of Japanese exports. Not only, the “Endaka” was the force that led surge of FDI, but also domestic market decline due to post-bubble economy and aging populations were important factors of increasing FDI as well as exports activities.

Figure 2 shows annual GDP growth rate of Japan and its major export destinations.³ “Other” in Fig. 2 represents average annual GDP growth rate of Hong Kong, Singapore, and Thailand. Data for Thailand during the currency crisis period (1997–1998) is excluded due to its rapid decline. Figure 2 illustrates that growth rate of Japanese GDP has long been underperforming its main export destinations in most of the 1990s and early 2000s. A long lasted post-bubble economy and aging population assured Japanese companies not to wait for the unlikely growth in domestic market and to focus on overseas market demand for future growth. As a result of this, Japanese companies increasingly relied on their exports to foreign markets and sales of overseas affiliates. According to METI (Ministry of Economy, Trade and Industry), sales of overseas affiliates of Japanese MNCs increased 1.5 times from 1993 to 2001, mainly driven by increase in that of manufacturing companies. In the early 2000s increase in export sales was significantly large, turning its economy back to recovery.

³Major export destinations are taken from Japan Statistical Yearbook 2011, published by Statistical Research and Training Institute, MIC.

Iida (2010) studied about FDI movements and production patterns of Japanese multinationals and argued that Japanese multinationals successfully built regional production and distribution network with the help of active FDI movements. He explained that many Japanese multinational firms broke up the production process into various sub-processes and conducted each sub-process in where it was the most efficient. For example, many Japanese multinationals produced the most complicated, value-added parts of product in Japan, exported them to their Asian affiliate where rest of the production and assembling were held, and then Asian affiliates exported back the final products back to Japan or third countries. As above, in the early stage, the motive for expansion into Asia was mainly exporting back to Japan or expansion of sales for third country. But, the motive to expand local sales is likely to overshadow the former motive since demand in the Asian market has been constantly increasing as a result of rapid economic growth.

3 Theory and Prior Evidence on Multinationality

3.1 Benefits and Costs of Multinationality

The world's biggest and most powerful companies are multinational companies, which produce and sell their products and services in different regions and countries. However, this does not necessarily mean that multinationality is always a good thing. Prior studies and findings provoke various theoretical arguments about the benefits and costs of multinationality. For a manufacturing company, there are two main patterns to engage into multinational activities: shifting production bases overseas, and selling and exporting products to overseas markets. The benefits and costs of multinationality could be connected to either of the above patterns, or both. As a company engages in a high level of multinationality, a combination of the two patterns becomes fairly common as the company attempts to reduce transaction costs and emphasize localized production and marketing activities in different regional areas. In brief, multinationality provides various benefits that could outweigh the costs, although under some circumstances, the costs may surpass the benefits. Table 1 summarizes the main benefits and costs of multinationality.

Most benefits of multinationality can arise from potential exploitable foreign market opportunities. Multinational companies possess greater opportunities to achieve optimal economic scale and gain competitive advantages by exploiting foreign markets' growing demand and imperfections (Buckley and Casson 1976; Errunza and Senbet 1981). Expanding its target market into different regions and countries, a multinational firm may also improve its risk-return performance and flexibility by reducing its reliance on a single market, the domestic market (Kim et al. 1993). Multinational companies with superior brand names or R&D capabilities can leverage their intangible assets to full advantage through overseas expansion (Morck and Bernard Yeung 1997, 1991; Morck and Yeung 1991). Internationally diversified firms will be more profitable because they will have a larger market across

Table 1 A summary of benefits and costs. A summary of main benefits and costs of multinationality argued by prior studies about multinationality. The orders are randomly selected and thus do not reflect any priority or importance

Benefits of multinationality
Opportunity to achieve optimal scale and scope
Improved risk-return performance by reducing reliance on single market
Opportunity to fully leverage firm-specific intangible assets
Access to lower-cost resources and less price sensitive markets
Increased organizational flexibility and lower tax environment
Cost of multinationality
Vulnerability to foreign political instability and jurisdictional constraints
Increased financial risks such as exchange rate fluctuations
Increased transactional and other organizational costs
Increased inter-firm information asymmetry
Possibility of managements' self-interest driven multinationality

which to spread their fixed costs, such as R&D (Hennart 2007). The other main benefits of multinationality are increased options such as access to lower-cost resources and labor (Kogut 1984) or access to less price-sensitive markets. The above benefits can also be combined or can result from one another. For example, a multinational company that entered a foreign country because of cheap resources such as labor can later benefit from increased demand in the local market. Recently, this pattern became rather common among Japanese multinational companies. In the 1980s and 1990s, they shifted their manufacturing activities to China and other Asian countries, and exported back to the home country as well as to other developed countries. In the recent years, Asian affiliates of Japanese multinationals have not only exported their products to other countries but have also relied heavily on local consumer markets to benefit from growing demand. In addition, some researchers suggest that the benefits of multinationality may also arise from more organizational flexibility or the ability to lower tax expenses using access to various regulations or other attractive regulatory environments (Errunza and Senbet 1981; Kogut 1984).

The cost of multinationality can be divided into two main parts: a company's external and internal perspectives. From the external perspective, multinationality may increase uncertainty costs such as political instability, jurisdictional constraints, and complexity of legitimacy (Chase et al. 1988; Kostova and Zaheer 1999). Many researchers have argued that multinationality may also increase transactional costs and other organizational costs, which are influenced by a multinational enterprise's regional spread, cultural differences, and organizational structure (Gomes and Ramaswamy 1999; Hennart 2007). Some researchers have also found that when a firm engages in multinational activities, it is likely to become larger and more complicated (Bodnar et al. 1999). These arguments could also indicate that multinationality may create a higher degree of intra-firm information asymmetry because multinational companies are likely to be more complex. In addition, managers have incentive to increase firm size and scope through overseas expansion because their salary and reputation are highly correlated with firm size (Jensen 1986; Jensen and Murphy 1990). Thus, in some cases, it might be possible for managers to be willing to expand into foreign markets even if it is not beneficial from the stockholders' value enhancing perspective.

To sum up, there is not clear theoretical support for the existence of a universal relationship between multinationality and performance. Indeed, the question is open to empirical analysis.

3.2 Prior Empirical Evidence on Multinationality and Performance

Does multinationality enhance firm performance? Scholars in the field of international business and management have long been interested in the relationship. Nevertheless, the findings of prior studies have been rather conflicting, ranging from positive to negative and from linear to inverted U-shaped relationships. A summary of prior studies is shown in Appendix. These conflicting results may partly be due to different understandings and proxy measures for multinationality and performance as well as inconsistency in the research models. Thus, in this section, we will review the prior empirical findings by grouping them based on the research models and measures they used. Prior studies of the multinationality-performance relationship can be divided into two main groups. The first group of studies examined the impact of multinationality on accounting-based profitability measures such as ROA, ROS, or ROE as proxies for performance. The second group of studies used market-based performance measures such as Tobin's q or excess value as proxies for performance and examined its relationship with multinationality. These two groups of performance measures represent somewhat different information since ROA and ROS reflect more current (short-term) performance measures while market value could also reflect future (long-term) performance measures.

We first reviewed prior studies that used accounting-based performance measures and examined the relationship between multinationality and performance. A number of studies in this area found support for a positive relationship between multinationality and performance. For example, Grant et al. (1988), using data for 304 British manufacturing companies between 1972 and 1984, showed that profitability (ROA) encourages overseas expansion. Tallman and Li (1996), using data for 192 US multinational companies from 1987, found a marginal positive relationship between multinationality and performance. More recent research has showed an inverted U-shaped relationship between multinationality and performance, and found that multinationality has a positive impact on performance until a certain level, at which point the costs of multinationality start to overcome its benefits. Hitt et al. (1997) and Gomes and Ramaswamy (1999) made this finding based on samples from US manufacturing companies in the periods 1988–1990 and 1990–1995, respectively.

The next group of researchers examined the effect of multinationality on firm value. Earlier studies such as Errunza and Senbet (1981, 1984) documented a positive relationship between multinationality and firm value. However, their studies only focused on multinational firms and employed data from the 1970s. Using data from 1978 to 1986, Christophe (1997) found that US multinational companies have a lower Tobin's q than domestic companies. More recently, Denis et al. (2002) examined the value impact of global and industrial diversification using a sample of

44,288 firm-year observations between 1984 and 1997. They found that both global and industrial diversification result in valuation discounts and that the costs of global diversification outweigh its benefits.

Since our study primarily focuses on Japanese multinational companies, it is vital to review prior studies in this area. Because of their active and vital role in the global capital flow, Japanese multinational companies have attracted enormous research attention both domestically and internationally. While most prior studies regarding Japanese multinationals have focused on their foreign entry strategies or unique management styles, Delios and Beamish (1999) and Yashiro and Hirano (2010) examined the relationship between multinationality and performance. Delios and Beamish (1999) identified a positive relationship between multinationality and accounting-based profitability measures by examining 399 Japanese manufacturing companies from 1991 to 1995. However, they used measures such as the number of foreign subsidiaries as a proxy for multinationality, while most prior studies used foreign sales or foreign asset ratio. This shortcoming is due to a lack of data availability since most Japanese companies started disclosing regional segment information in 1999. Yashiro and Hirano (2010) found that exporting companies generated higher profitability than non-exporting companies during 2002–2005, and stressed that exporting companies actively engage in investment or R&D activities to improve their competitive advantage.

Having discussed the benefits and costs of multinationality and the prior findings regarding the impact of multinationality on firm performance, we now formulate our hypothesis about the relationship between multinationality and performance in Japanese manufacturing companies.

4 Hypothesis

As discussed earlier, most prior studies about multinationality and performance can be divided into two main groups based on whether they used an accounting-based performance measure or a market-based performance measure. We formulate our hypothesis similarly by dividing it into two parts, (1) multinationality and profitability, where we examine the relationship between multinationality and an accounting-based performance measure, ROA, and (2) multinationality and market value, where we test the impact of multinationality on market value using Tobin's q .

4.1 Multinationality and Profitability

Although the findings of prior studies have not been consistent, there are many theoretical arguments that support a positive relationship between multinationality and performance. As we have discussed in the previous sections, international diversification is supposed to increase profitability because (1) it makes it possible to exploit

scale economies, (2) it provides better and more flexible access to resources, and (3) it allows for more learning (Hennart 2007, p. 425). A firm will expand its international business if the foreign marginal return is higher than its domestic business. Multinational firms have the potential to become more profitable since they possess more business options than purely domestic firms.

Hypothesis 1

Multinationality has a positive effect on firm profitability.

4.2 Multinationality and Firm Value

While the relationship between multinationality and accounting-based performance measures represents the effect of multinationality in the short run, it is also in our interest to examine the effect of multinationality in the long run, including its future performance. Some researchers have argued that investors who prefer globally diversified investment portfolios tend to value multinationality (Errunza and Senbet 1981). As we have discussed in the previous sections, demand and growth prospects in the Japanese domestic market have been relatively weaker than in the markets of most of the major trading partners, such as China, Southern Asia, and the US, over the sample period. Therefore, it is likely that investors see higher growth potential for firms with greater foreign reliance, and thus they may value the multinationality of Japanese firms. In other words, the foreign market reliance of Japanese multinationals could have a positive effect on firms' market value since investors may expect higher growth potential from them.

Arguments raised about previous hypotheses also have a supplementary effect on this reasoning. That is, if multinationality generates higher profitability, then it should also have positive effect on market value. We try to control the effect of profitability on the multinationality-firm value relationship so that we can differentiate between the impacts of multinationality on current and future performance.

It is to be noted that our presumption for Hypothesis 2 is the complete opposite of most prior findings about the relationship between multinationality and the firm value of US multinationals. Morck and Yeung (1991), Christophe (1997), and Denis et al. (2002) conducted multinationality and firm value relationship analysis on US multinational firms; all found negative and insignificant associations. Despite these findings from prior studies, we hypothesize that multinationality is positively associated with firm value because investors are likely to value reliance on foreign markets by Japanese companies during the sample period. As discussed above, our presumption is based on the differences between domestic and international economic factors surrounding Japanese multinational companies over the sample period.

Hypothesis 2

Multinationality has a positive effect on firm value.

5 Description of Data and Methodology

In our empirical models, independent variables representing multinationality are expected to explain dependent variables that reflect firm performance. In addition, higher levels of marketing and R&D intensity are expected to have a positive impact on performance. Considering prior studies, we have incorporated a set of control variables that potentially affect the explanatory power of our analysis. In this section, we will first explain our sample along with key variables and measurements, then briefly describe the trend of multinationality among Japanese manufacturing companies. Finally, we will formulate our empirical models for each hypothesis discussed in the previous section.

5.1 Description of Data

The Sample

Our sample data is based on all publicly listed manufacturing companies available on Nikkei's "NEEDS-Financial QUEST" database, which is extensively used in the analysis of Japanese firms. During the period 1997–1999, various regulations were made to encourage and require Japanese companies to report segment information that includes industrial and geographic segments as well as overseas sales data. From fiscal year 1999, segment reporting is available on Nikkei's "NEEDS-Financial QUEST" database. We limit our sample period to the 2008 fiscal year because we expected the economic shock caused by the Lehman Brothers bankruptcy and further global financial crises to affect our regression results considerably. From these reasons, we chose a sample period of 1999 to 2008. In addition, we have limited our sample to manufacturing companies because most previous studies chose their sample similarly (Grant 1987; Tallman and Li 1996; Hitt et al. 1997).

Our initial sample was chosen from 14,883 firm-year observations associated with 1,552 publicly listed manufacturing companies over the period 1999–2008. Variables in the top and bottom 0.5 % have been eliminated. Unfortunately, only 5,106 firm-year observations from our initial sample qualified for our main regression models, which require various measures for all the controlling variables. Moreover, for the regression model that focuses degree of multinationality, we had to further trim our sample to 2,970 firm-year observations because our models require firm-year observations with available export or overseas sales information disclosed in segment reporting. These significant reductions in the number of firm-year observations from our initial sample are mostly because the relatively small number of firms recorded advertising or R&D expenditures in their financial statements.

In Tables 2, 3, and 4, we summarize the basic statistics of the sample of 5,106 firm-year observations associated with 15 different industries. Firm-year observations are classified as *Multinational* if they report more than 10 % of export and overseas sales as a percentage of total sales; otherwise, they are classified as *Domestic*.

Table 2 Firm characteristics. Comparison statistics of various firm characteristics of our main sample of 5,106 firm-year observations over the period 1999–2008. Sample is grouped into two categories, multinational and domestic, on the basis described as below. The table presents a comparison of various measures of two categories. The mean value of each measure is reported with median values in italics below

	<i>Domestic</i>	<i>Multinational</i>	
<i>ROA</i>	4.38	5.01	mean
	<i>3.77</i>	<i>4.57</i>	median
<i>Tobin's q</i>	0.89	0.91	mean
	<i>0.85</i>	<i>0.89</i>	median
<i>AD</i>	1.47	0.95	mean
	<i>0.49</i>	<i>0.35</i>	median
<i>RD</i>	2.38	2.95	mean
	<i>1.14</i>	<i>2.42</i>	median
<i>EBIT</i>	5.48	6.86	mean
	<i>4.43</i>	<i>6.16</i>	median
<i>DEBT</i>	183.01	185.22	mean
	<i>107.10</i>	<i>114.58</i>	median
<i>SIZE</i>	71,056	269,402	mean
	<i>24,331</i>	<i>45,346</i>	median

Table 3 Firm characteristics. Comparison statistics of various firm characteristics of our main sample of 5,106 firm-year observations over the period 1999–2008. Sample is grouped into two categories, multinational and domestic, on the basis described as below. The table presents industry-specific information on the basis of Nikkei Medium Industry Category Codes, which are used as industry dummy in our regression models. The number of observations from each industry are further classified as multinational and domestic

Industry code	Nikkei medium industry name	<i>Domestic</i> (number of observations)	<i>Multinational</i> (number of observations)
1	Foods (including breweries)	752	78
3	Textile products	147	87
5	Pulp and paper	63	16
7	Chemicals	406	494
9	Drugs	198	56
11	Petroleum	3	7
13	Rubber products	36	86
15	Stone, clay, and glass products	212	118
17	Iron and steel	99	94
19	Non-ferrous metal and metal products	392	155
21	Machinery	363	777
23	Electric and electronic equipment	150	239
27	Motor vehicle and auto parts	7	21
31	Precision equipment	3	29
33	Other manufacturing	17	1

Table 4 Firm characteristics. Comparison statistics of various firm characteristics of our main sample of 5,106 firm-year observations over the period 1999–2008. Sample is grouped into two categories, multinational and domestic, on the basis described as below. The table presents descriptions and calculations of key performance and control indices

<i>Multinational</i>	Firm-year observations when exports and overseas sales as a percentage of total sales is more than 10 %
<i>Domestic</i>	Firm-year observations when exports and overseas sales as a percentage of total sales is less than 10 %, and firm-year observations when firm did not report any export or overseas sales
<i>ROA</i>	Ordinary income/income before income taxes and others as a percentage of total assets (%)
<i>Tobin's q</i>	Simplified estimation of the Tobin's q ratio = (market value of equity + book value of debt) / (book value of total assets)
<i>AD</i>	Advertising expenditure as a percentage of total sales (%)
<i>RD</i>	Research and development expenditure as a percentage of total sales (%)
<i>EBIT</i>	Earnings before interest and tax as a percentage of total sales (%)
<i>DEBT</i>	Ratio of debt to equity (%)
<i>SIZE</i>	Total sales (in million yen unit)

Table 2 divides our sample into *Domestic* and *Multinational* firm-year observations and compares their basic characteristics.

Table 3 breaks down our sample into industry categories using the two-digit codes for Nikkei Medium Industry Categories. Not surprisingly, multinational companies tend to be much bigger in firm size, with a mean value of total sales three times larger than that of domestic companies. Profitability and market value measures are also slightly higher for multinationals, although this could be the result of different industry concentrations among domestic and multinational groups, as shown in Table 3.

Table 2 also suggests that on average, domestic companies engage in much higher advertising intensity (1.47 %) than multinational companies (0.95 %). One possible explanation for this trend is that since the domestic market is likely more competitive than most foreign markets, domestically concentrated firms are forced to spend more on advertising to combat intensified domestic competition. Table 3 also shows that a relatively large portion of our domestic firm-year observations come from the food industry. Therefore, it is likely that firms in the food industry rely heavily on advertising, likely because they have relatively numerous product lines. Table 2 also suggests that multinational companies spend more on R&D activities, with a median R&D expenditure-to-sales ratio twice as large as that of domestic companies. EBIT-to-sales ratio and firm leverage measurements for multinational companies are also higher than those of domestic companies. We later incorporate these control variables to examine the relationship between multinationality and performance.

Key Variables and Measures

Multinationality

Our key variable, multinationality, otherwise known as internationalization, has many different definitions since it is widely used in the academic and business worlds. Probably the most specific definition was made by Maisonrouge (1974), who defined a truly multinational company by five basic criteria: (1) it must operate in many countries at different levels of economic development, (2) its local subsidiaries must be managed by nationals, (3) it must maintain complete industrial organizations, including R&D and manufacturing facilities, in several countries, (4) it must have multinational central management, and (5) it must have multinational stock ownership. However, research studies that specifically examined the multinationality-performance relationship mostly focused on two main dimensions of multinational activities: foreign market penetration and foreign production presence.

As seen in previous sections, a commonly used proxy for foreign market penetration is the ratio of foreign sales to total sales, and that for foreign production presence is the ratio of foreign assets to total assets. It is important to note that a considerable number of studies used the number of foreign affiliates, number of host countries, or the entropy index of the measures above. Inconsistency in proxy measures for multinationality could be due to differences in data availability or understanding of multinationality, depending on the purpose of the study. While acknowledging the alternative benefits of each measurement or proxy technique, we use foreign market penetration measured as the ratio of foreign and export sales to total sales (FSTS), which serves best for the purpose of our study.⁴

First, it directly presents what proportion of total sales comes from foreign markets. One of our main interests is to measure how reliance on foreign markets affects firm performance when the domestic market is shrinking.

Secondly, foreign market penetration is the most commonly used proxy for multinationality in the prior studies. Another main purpose of our study is to provide empirical evidence about Japanese multinational companies as a comparison to prior empirical evidence for US multinational companies. Although some prior studies use the ratio of foreign affiliates sales to total sales as a proxy for foreign market penetration, we instead use the ratio of exports and foreign sales to total sales provided in segment reporting.⁵ We added export sales because it is likely to be considerable for Japanese companies and vital to the full incorporation of reliance on foreign markets.⁶

⁴In Sect. 6, the ratio of foreign assets to total assets (FATA) is used for additional test.

⁵According to the Accounting Standard Board of Japan, segment reporting is required to include export/overseas sales information and is calculated as (Exports+Foreign affiliate sales – Sales from inter-firm trading).

⁶Bartlett and Ghoshal (1989) suggested that a characteristic of Japanese enterprises' global strategies is a heavy reliance on export sales, and thus export sales of Japanese firms may be more significant and harder to ignore than those of their Euro-American counterparts.

We also used a dummy variable for multinationality to compare the performance of multinational companies with that of domestic companies. Following Denis et al. (2002),⁷ we classify a firm as *Multinational* if it generates more than 10 % of its total sales from foreign markets.

Performance

It is in our interest to determine how multinationality affects firm performance both in the short term and the long term. Accounting-based measurements are better suited to represent short-term (current) performance, whereas market-based measurements are likely to reflect more long-term (future) performance. There are three potential indices for accounting-based performance measures: return on total assets (ROA), return on sales (ROS), and return on equity (ROE). ROE is not commonly used in prior studies, mainly because it is highly dependent on capital structure differences. We therefore have ROA and ROS, which are highly correlated with one another.⁸ ROS, along with the other main variables in our models (FSTS, AD/Sales, and R&D/Sales), is a function of total sales. Thus, we avoid regression equations with ROS as the dependent variable, as it is more directly related to other control variables. From these reasons, we chose ROA as a dependent variable to examine the short-term impact of multinationality.

Prior studies mostly used Tobin's q as a proxy for market-based performance measurement⁹ with the exception of Denis et al. (2002), in which excess value was used. Following the example of prior studies, we proxy the Tobin's q ratio as a market-based performance measure in our regression models of the multinationality-performance relationship from a long-term perspective.

Control Variables

It is important to include all other variables that are likely to influence performance in order to isolate the multinationality-performance relationship. Following prior studies, we chose advertising and R&D intensity, firm size, financial leverage, industry effect, and year effect as our control variables for the regression models with accounting-based profitability measurement as a dependent variable. For the regression models of the multinationality-firm value relationship, we added the ratio

⁷Denis et al. (2002) classified firms as multinational if they reported any foreign sales on Compustat's Segment File. US firms are required to report audited financial information for individual industrial or foreign segments that account for more than 10 % of consolidated sales, profits, or assets.

⁸For example, in our main sample of 5,106 observations, the correlation between ROA and ROS was 0.839.

⁹For example, see Christophe (1997) and Morck and Yeung (1991).

of earnings before interest and taxes (EBIT) to total sales to eliminate the potential effect of profitability (Denis et al. 2002). Advertising and R&D intensity, important determinants of firm performance as proxies for firm-specific marketing or technological skills, are respectively calculated as annual advertising expenditure divided by total sales and annual R&D expenditure divided by total sales. Our third control variable is firm size, which is used as a proxy for economic scale and competitive power. We use the natural logarithm of total sales as our measure of firm size. To control for the effect of debt financing on firm performance, we use the ratio of debt to equity, also known as financial leverage. In addition, we controlled for industry effects by including a set of industry dummy variables based on the two-digit codes for Nikkei's Medium Industry Categories. The most common industries were "Food" and "Non-ferrous metal products" among domestic companies, "Machinery" and "Electric and electronic equipment" among multinational companies, and "Chemistry," which had equally numerous firms in both groups.

5.2 Trends in Overseas Operations of Japanese MNCs

We have argued that multinationality has become widely popular among Japanese companies because of domestic market decline and increasing demand in foreign markets. Therefore, it is within our interest, before regression analysis, to document how multinationality spread through Japanese manufacturing companies. In Table 5, we document the proportion of multinationals by fiscal year end with a classification of multinationality similar to that in Tables 2, 3, and 4. For example, in 1999, although 1,403 manufacturing companies reported their total sales,¹⁰ 435 of them, that is 31 %, reported a 10 % or greater ratio of export and overseas sales to total sales. An increase in the proportion of *Multinational* companies among manufacturing companies was steady throughout the sample period, and by 2008, more than half of the manufacturing companies were *Multinational*.

As Tables 2, 3, and 4 show, we have found that multinational firms tend to be larger. Thus, it is possible that multinationality is spreading only through large companies. To rule out this possibility, we created a subsample of only small companies, which consists of a lower quartile in each calendar year in terms of their total sales. As expected, in 1999, only 10 % of small companies were classified as *Multinational*. However, the proportion of small *Multinational* firms has risen even more rapidly than the overall sample: roughly three times, from 0.10 in 1999 to 0.33 in 2008. These results indicate that although multinationality is more common among large companies, small firms have increasingly become involved in multinational activities over the sample period.

¹⁰The number of firms in each calendar year is based on the available total sales information provided by Nikkei's "NEEDS-FinancialQUEST" database.

Table 5 Fraction of multinationals among Japanese manufacturing firms. The sample includes 14,883 firm-year observations over the period 1999–2008. The subsample includes lower-quantile firms of each fiscal year in total sales. For example, in 1999, the sample includes 1,403 firms, and the 351 lower quantile firms in sales are included in subsample

Year	All sample		Subsample (small firms)	
	Number of firms	Fraction of multinational	Number of firms	Fraction of multinational
1999	1,403	0.31	351	0.10
2000	1,430	0.38	358	0.14
2001	1,453	0.40	364	0.17
2002	1,475	0.42	367	0.21
2003	1,500	0.45	376	0.23
2004	1,511	0.47	379	0.26
2005	1,523	0.49	381	0.27
2006	1,527	0.52	382	0.30
2007	1,529	0.54	383	0.32
2008	1,532	0.55	383	0.33

5.3 Model

To test the relationship between multinationality and profitability, most prior studies used a multivariate regression model with accounting-based performance measures as dependent variables and a multinationality measure as an independent variable. The most commonly used control variables in these regression models are firm size, financial leverage, and industry effects (Grant et al. 1988; Tallman and Li 1996; Delios and Beamish 1999; Li and Qian 2005; and Yashiro and Hirano 2010). More recently, some researchers added R&D and advertising intensity as control variables in their research models (Delios and Beamish 1999; Denis et al. 2002). It is reasonable to assume that firm-specific intangible assets such as superior technical or marketing skills are significantly associated with firm performance. As above, we incorporate R&D and advertising intensity as control variables in our regression model as well as other commonly used variables such as firm size, leverage, industry effects, and year effects. Equations (1) and (2), shown below, are the equations for our regression model to test Hypothesis 1.

$$\begin{aligned}
 Prof_i = & \alpha_0 + \alpha_1 MN_dummy_i + \alpha_2 DEBT_i + \alpha_3 SIZE_i + \alpha_4 AD_i + \alpha_5 RD_i \\
 & + \gamma \sum_{i=1}^{33} Ind_i + \delta \sum_{i=1}^{10} YEAR_i + \tilde{\epsilon}
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 Prof_i = & \alpha_0 + \alpha_1 FSTS_i + \alpha_2 DEBT_i + \alpha_3 SIZE_i + \alpha_4 AD_i + \alpha_5 RD_i \\
 & + \gamma \sum_{i=1}^{33} Ind_i + \delta \sum_{i=1}^{10} YEAR_i + \tilde{\epsilon}
 \end{aligned} \tag{2}$$

Prof_i: Ordinary income as a percentage of total assets, ROA

MN_i: (*MN_dummy*) Equal to 1 if export and overseas sales as a percentage of total sales are more than 10%; otherwise equal to 0 (for a sample of 5,106 firm-year observations)

MN_i: (*FSTS*) Export and overseas sales as a percentage of total sales (for a sample of 2,970 firm-year observations)

DEBT_i: Ratio of debt to equity

SIZE_i: Natural log of total sales

AD_i: Advertising expenditure as a percentage of total sales

RD_i: Research and development expenditure as a percentage of total sales

Ind_i: Dummy variable for the two-digit codes of the Nikkei Medium Industry Category

YEAR_i: Dummy variable for fiscal years 1999–2008

The independent variable *MN_i* is described in two different ways because the regression of profitability on multinationality will be tested on two samples of 5,106 and 2,970 firm-year observations. On the test of the larger sample, firm-year observations of both multinational and domestic firms will be used, regardless of whether they include available export and overseas sales, and a multinationality dummy variable will be employed as an independent variable. The smaller sample consists of firm-year observations where considerable export and overseas sales are reported, and the continuous degree of multinationality is used as an independent variable.

For Hypothesis 2, we create a regression model using research models introduced by Denis et al. (2002) and Christophe and Lee (2005). To test the relationship between multinationality and market value, Christophe and Lee (2005) used Tobin's *q* as a dependent variable and R&D intensity, AD intensity, firm size, and debt effect as control variables. We also add the EBIT-to-sales ratio to our regression model to emphasize the impact of multinationality on long-run (future) performance even after controlling for basic profitability. The equations of our regression model for Hypothesis 2 are shown as Eqs. (3) and (4):

$$Q_i = \alpha_0 + \alpha_1 MN_{dummy_i} + \alpha_2 DEBT_i + \alpha_3 SIZE_i + \alpha_4 AD_i + \alpha_5 RD_i + \alpha_6 EBIT_i + \gamma \sum_{i=1}^{33} Ind_i + \delta \sum_{i=1}^{10} YEAR_i + \tilde{\epsilon} \quad (3)$$

$$Q_i = \alpha_0 + \alpha_1 FSTS_i + \alpha_2 DEBT_i + \alpha_3 SIZE_i + \alpha_4 AD_i + \alpha_5 RD_i + \alpha_6 EBIT_i + \gamma \sum_{i=1}^{33} Ind_i + \delta \sum_{i=1}^{10} YEAR_i + \tilde{\epsilon} \quad (4)$$

Q_i: Simplified estimation of Tobin's *q* ratio = (market value of equity + book value of debt)/(book value of total assets)

EBIT_i: Earnings Before Interest and Taxes as a percentage of total sales

6 Empirical Results

In this section, we test our hypothesis and report the regression results. For Hypothesis 1, the regression of profitability on multinationality will be tested on two samples of 5,106 and 2,970 firm-year observations. We also test Hypothesis 2 on two samples, the same as in Hypothesis 1, using regression models of firm value on multinationality.

6.1 *Descriptive Statistics and Correlations*

Descriptive statistics and correlations for the variables of the regression models for Hypotheses 1 and 2 are presented in Table 6. Since we used two different samples to test these hypotheses, descriptive statistics of both samples are presented separately in Table 6. As Table 6 shows, our independent variables for multinationality are significantly correlated with the variables of firm size, R&D intensity, and ratio of EBIT to total sales, and negatively correlated with advertising intensity. However, these inter-correlations between multinationality variables and other control variables tend to be relatively small with the exception of firm size.¹¹

The dependent variable ROA is significantly and strongly correlated with the ratio of EBIT to total sales, which is not surprising considering that both reflect profitability. However, this strong correlation does not affect our regression models since we incorporate the ratio of EBIT to total sales only in regression models with Tobin's q as a dependent variable to control for the profitability effect. Furthermore, firm size is significantly correlated with advertising intensity in both samples. This suggests that larger firms tend to spend more on marketing activities. It should also be noted that while correlation between firm size and R&D intensity is not significant in our full sample, it is significantly positive in our subsample. This could mean that among firms that engage in exports or overseas activities, larger firms are more aggressively involved in R&D activities.

¹¹ For the full sample, the correlation between the multinationality dummy and firm size is 0.31. For subsample, the correlation between the foreign sales ratio and the firm variable is 0.23.

Table 6 Descriptive statistics and correlations. Panel 1 presents descriptive statistics and correlations for the full sample, 5,106 firm-year observations, which uses multinationality dummy variables and includes all available firm-year observations. In contrast, Panel 2 presents descriptive statistics and correlations of the subsample of 2,970 firm-year observations, which uses the export and overseas sales ratio to total sales, and thus only includes firm-year observations that provided export or overseas sales data or the ratio of export and overseas sales to total sales data

Variables	Means	s.d.	Min	Max	1	2	3	4	5	6	7	8
<i>Panel 1 (full sample: 5,106 observations)</i>												
1. ROA	4.66	5.27	-34.52	56.28	1.00							
2. Tobin's q	0.90	0.34	0.28	6.44	0.19	1.00						
3. MN Dummy	0.38	0.49	0.00	1.00	0.07	0.04	1.00					
4. Debt/Equity	184.00	346.94	5.44	7,542.42	-0.21	0.10	-0.01	1.00				
5. In_Sales	10.54	1.49	6.77	16.23	0.11	0.15	0.31	0.05	1.00			
6. AD/Sales	1.24	2.73	0.00	49.00	0.19	0.29	-0.06	-0.07	0.08	1.00		
7. RD/Sales	2.63	5.36	0.00	182.97	-0.04	0.09	0.05	-0.06	0.01	0.02	1.00	
8. EBIT/Sales	6.09	7.45	-100.64	86.96	0.83	0.07	0.10	-0.15	0.08	0.11	-0.15	1.00
<i>Panel 2 (subsample: 2,970 observations)</i>												
1. ROA	4.80	5.10	-34.52	34.90	1.00							
2. Tobin's q	0.90	0.25	0.28	2.87	0.19	1.00						
3. FSTS	25.09	19.48	1.00	94.84	0.16	0.10	1.00					
4. Debt/Equity	181.52	326.43	6.94	6,454.76	-0.23	0.12	0.02	1.00				
5. In_Sales	10.77	1.58	6.77	16.23	0.11	0.30	0.23	0.06	1.00			
6. AD/Sales	1.14	2.88	0.00	34.81	0.09	0.17	-0.07	-0.07	0.06	1.00		
7. RD/Sales	2.91	3.00	0.03	42.76	0.10	0.13	0.12	-0.09	0.14	0.07	1.00	
8. EBIT/Sales	6.67	7.05	-35.87	86.96	0.85	0.10	0.14	-0.20	0.07	0.10	0.19	1.00

Table 7 Multinationality and profitability. OLS regressions of profitability on multinationality with a set of control variables. Column 1 shows the regression results for the 5,106 firm-year observations sample, and multinationality dummy variable is used as an independent variable. Column 2 shows the regression results of 2,970 firm-year observation-sample; the continuous degree of multinationality (FSTS) is used as independent variable. The coefficient estimates are reported with t-statistics in parentheses below. The definitions of variables are the same as in Eq. (1)

Dependent variable	ROA	
	1	2
<i>Constant</i>	2.80*** (5.16)	3.57*** (5.56)
<i>MN_dummy</i>	0.32** (1.98)	
<i>FSTS</i>		0.04*** (8.66)
<i>DEBT</i>	-0.003*** (-14.11)	-0.003*** (-11.11)
<i>SIZE</i>	0.30*** (6.06)	0.13** (2.19)
<i>AD</i>	0.28*** (10.32)	-0.002 (-0.07)
<i>RD</i>	-0.13*** (-7.73)	-0.11*** (-2.85)
<i>Industry</i>	Yes	Yes
<i>Year</i>	Yes	Yes
Adjusted R ²	0.14	0.21
F-value	31.81	28.32
Number of observations	5,106	2,970

*Significant at 10 %; **Significant at 5 %; ***Significant at 1 %

6.2 Results and Discussion

Hypothesis 1

Table 7 shows the regression results for the multinationality-profitability relationship tests with a set of control variables as described in Eq. (1). In column 1 of Table 7, we report the regression results of the 5,106 firm-year-observation sample, and the dummy variables of multinationality are used as independent variables. The regression results indicate that profitability is significantly higher (at the 0.05 level) for multinational firms than for domestic firms over the period 1999–2008. In column 2 of Table 7, we report the regression results of the 2,970 firm-year-observation sample, where exports and overseas sales as a percentage of total sales (FSTS) are used as an independent variable reflecting the continuous degree of multinationality.

The regression results yielded a positive correlation between degree of multinationality and profitability with a coefficient significantly different from zero (at the 0.01 level). Delios and Beamish (1999) and Yashiro and Hirano (2010) also found a positive relationship between multinationality and profitability among Japanese firms. However, their research models are slightly different from those used in many other prior studies, including Hitt et al. (1997) and Gomes and Ramaswamy (1999). For example, Delios and Beamish (1999) only used foreign assets or the number of affiliates to estimate multinationality, as opposed to foreign market penetration, and Yashiro and Hirano (2010) only focused on exporting companies, as opposed to multinationals. Nevertheless, our regression results also support a positive relationship between multinationality and profitability measures among Japanese firms using rather similar research models to those of

Table 8 Multinationality and firm value. OLS regressions of firm value (Tobin's q) on multinationality with a set of control variables. Regression shown in Model 3 is tested on 5,106 firm-year observation sample, and the multinationality dummy variable is used as an independent variable. Model 4 shows the results of regressions for the 2,970 firm-year observation sample; the continuous degree of multinationality is used as an independent variable. The coefficient estimates are reported with t-statistics in parentheses below. The definitions of variables are the same as in Eqs. (3) and (4)

Dependent variable	Tobin's q	
	Model 3	4
<i>Constant</i>	0.54*** (15.53)	0.41*** (12.71)
<i>MN_dummy</i>	0.02** (2.24)	
<i>FSTS</i>		0.0006** (2.47)
<i>DEBT</i>	0.0001*** (10.37)	0.0001*** (8.00)
<i>SIZE</i>	0.02*** (7.06)	0.03*** (12.05)
<i>AD</i>	0.03*** (18.04)	0.008*** (5.06)
<i>RD</i>	0.003*** (2.8)	-0.0008 (-0.41)
<i>EBIT</i>	0.002*** (3.36)	0.003*** (4.12)
<i>Industry</i>	Yes	Yes
<i>Year</i>	Yes	Yes
Adjusted R ²	0.14	0.18
F-value	29.02	23.21
Number of observations	5,106	2,970

*Significant at 10 %; **Significant at 5 %; *** Significant at 1 %

Hitt et al. (1997) and Gomes and Ramaswamy (1999). As seen above, it is likely that a significantly positive relationship between profitability and multinationality is consistent among Japanese manufacturing firms.

Hypothesis 2

In Table 8, we test Hypothesis 2 by regressing the market-based performance index, Tobin's q, on various independent variables. In model 3 of Table 8, we report the regression results for the 5,106 firm-year observations, and the dummy variable of multinationality is used as an independent variable. The overall results indicate that Tobin's q is significantly higher (at the 0.05 level) for multinational firms than for domestically concentrated firms.

In model 4 of Table 8, we report the regression results of Tobin's q on exports and overseas sales as a percentage of total sales (FSTS), where the 2,970 firm-year-observation sample is used. The result indicates a significantly positive association (at the 0.05 level) between the continuous degree of multinationality and market value. For the most part, the coefficient estimates of the control variables are similar to those found in prior studies. The dependent variable, Tobin's q, is significantly and positively related to firm size, advertising and R&D intensity, and the EBIT-to-sales ratio. The association between the debt-to-equity ratio and Tobin's q is also significantly positive, although in most prior studies, the association is either negative or insignificant.

As above, the regression results suggest that multinationality has a positive impact on firm value, indicating that investors do value multinationality. Based on this result, it is plausible to conclude that investors encourage overseas expansion

and expect future growth from Japanese multinational companies. It is worth noting that our results on multinationality and long-term firm performance are the complete opposite of those found in recent prior studies about US multinational companies. Although few earlier studies documented the positive relationship between multinationality and firm value (Errunza and Senbet 1981, 1984), recent studies have argued that multinationality is negatively associated with firm value (Christophe 1997; Denis et al. 2002). This indicates that while investors react negatively to overseas expansion by US companies in general, investors react positively to overseas expansion by Japanese manufacturing firms.

We argue that the difference in market reaction to foreign market penetration between Japanese and US companies is because of a long-term steady decline in the Japanese domestic market. In other words, among the various benefits and costs of multinationality, access to growing demand markets may be a strong motive for overseas expansion for Japanese manufacturing companies. It may be that for most Japanese firms, the only way to pursue future growth in the long run is to rely on foreign markets. Increasing demand from Asia and other emerging countries and their strong presence in European and American markets are likely the most powerful reasons why multinationality is positively related to firm value, especially for Japanese manufacturing firms.

In summary, our regression results for the Japanese manufacturing firms sample over the period 1999–2008 show evidence to support Hypotheses 1 and 2. This indicates that the multinationality of Japanese manufacturing firms has a positive impact on both short-term and long-term firm performance.

7 Robustness Check and Additional Tests

In this section, we conduct three tests to check robustness and reinforce our findings. First, we conduct a robustness check by retesting the main regression model with the alternative measurements: ROS and PBR. Second, we analyze the relation between change in multinationality and change in profitability in order to eliminate the competing explanation. We succeed in ruling out the possible reverse causality through this analysis. Third, we retest our main regression analysis by breaking down overall foreign market penetration variables into geographically different areas: Asia, the Americas, and Europe. These alternative measures and geographic effect tests are an attempt to offer further research ideas, but could also provide some support for the robustness perspective.

7.1 *Alternative Measurement Test*

Table 9 shows regression results for alternative measurements and tests. Models 5, 6, 7, and 8 show regression results for an alternative measurement test of dependent variables, ROS as a profitability measurement, and PBR as firm value measurement.

Table 9 Model 5, 6, 7, and 8 show results of the regression of alternative performance measures (ROS, PBR) on multinationality for the same samples in Tables 7 and 8

Dependent variable	ROS		PBR	
	5	6	7	8
<i>Constant</i>	3.94*** (5.04)	5.29*** (5.82)	0.44*** (4.29)	-0.005 (-0.06)
<i>MN_dummy</i>	0.78*** (3.36)		0.09*** (2.81)	
<i>FSTS</i>		0.06*** (7.94)		0.003*** (4.64)
<i>DEBT</i>	-0.004*** (-14.13)	-0.004*** (-11.35)	0.0004*** (9.79)	0.0002*** (7.28)
<i>SIZE</i>	0.36*** (4.96)	0.04 (0.53)	0.02 (1.43)	0.05*** (7.37)
<i>AD</i>	0.15*** (4.02)	0.002 (0.03)	0.05*** (10.26)	0.02*** (3.81)
<i>RD</i>	-0.41*** (-20.22)	0.04 (0.77)	0.004 (1.24)	-0.01 (-1.58)
<i>EBIT</i>			0.005** (2.53)	0.005*** (3.05)
<i>Industry</i>	Yes	Yes	Yes	Yes
<i>Year</i>	Yes	Yes	Yes	Yes
Adjusted R ²	0.17	0.21	0.07	0.13
F-value	38.45	28.83	13.94	16.45
Number of observations	5,605	2,970	5,605	2,970

*Significant at 10 %; **Significant at 5 %; ***Significant at 1 %

The regression results do not show any significant changes to the previous regression results shown in Tables 7 and 8, further indicating that multinationality is positively associated with firm performance.

7.2 Changes in Multinationality and Profitability

We, thus far, suppose that multinationality affects profitability ($[M \rightarrow P]$ causality). It may be possible that profitable firms expand their business into foreign countries ($[P \rightarrow M]$ causality). In order to eliminate this competing explanation, we analyze the relation between change in multinationality and change in profitability.

Prior study already deals with this possibility. Grant (1987) examined relationship between increase in degree of multinationality and profitability over the period 1972–1984. He divided sample period into three sets of sub-periods, specifically 1972–1975, 1976–1979 and 1980–1984, and estimated average amount for profitability and multinationality measures for each sub-period. Then he regressed changes in average profitability measures to changes in average multinationality measures using control variable of industry dummies. Changes in profitability measures were measured over two time periods: 1972–1975 to 1980–1984 and 1976–1979 to 1980–1984 and changes in multinationality measures were lagged by 4 years. We will use modified version of his regression model. We added control variables for changes in R&D intensity, advertising intensity and firm size to his regression model which only controlled for industry effect. Similarly, we divided our sample period into three sets of sub-periods: 1999–2001, 2002–2004 and

2005–2007¹² and measured average value for each sub-period. We used current and 3-year lagged measures of multinationality to explain change in performances. Our regression model is shown as Eq. (5).

$$\begin{aligned} \Delta Prof_{p3-p2} = & \alpha_0 + \alpha_1 Prof_{p2} + \alpha_2 \Delta FSTS_{p3-p2} + \alpha_2 \Delta FSTS_{p2-p1} + \alpha_3 \Delta AD_{p3-p2} \\ & + \alpha_4 \Delta RD_{p3-p2} + \alpha_5 SIZE_{p2} + \alpha_6 DEBT_{p2} + Y \sum_{i=1}^{33} Ind_i + \tilde{\epsilon} \end{aligned} \quad (5)$$

Variables represent three-year average value of each firm or changes in average values respectively.

$p1, p2, p3$: Each represent period of 1999–2001, 2002–2004 and 2005–2007

$Prof_{p2}$: Average of ROA in $p2$

$FSTS$: Export and overseas sales as a percentage of total sales

$\Delta Prof_{p3-p2}$: Average of ROA in $p3$ minus Average of ROA in $p2$

$\Delta FSTS_{p3-p2}$: Average of FSTS in $p3$ minus Average of FSTS in $p2$

$\Delta FSTS_{p2-p1}$: Average of FSTS in $p2$ minus Average of FSTS in $p1$

ΔAD_{p3-p2} : Average of AD in $p3$ minus Average of AD in $p2$

ΔRD_{p3-p2} : Average of RD in $p3$ minus Average of AD in $p2$

$SIZE_{p2}$: Average of SIZE in $p2$

$DEBT_{p2}$: Average of SIZE in $p2$

Note, definitions of ROA, AD, RD, SIZE and DEBT are same as Eq. (1).

Table 10 shows regression results of change in profitability on increases in multinationality with a set of control and base variable. Our dependent variable is calculated as difference between 3-year average ROA of 2005–2007 and 3-year average ROA of 2002–2004. This simplification reflects changes in ROA over the period 2002–2007, and 3-year average measures are taken to avoid effect of high volatility of ROA (Grant 1987). Change in degree of multinationality is also calculated similarly over the same period using export and overseas sales as a percentage of total sales, and 3-year lagged change in degree of multinationality is also introduced in an attempt to see more precise impacts. Control variables as described earlier are relative changes of R&D and advertising intensity over the period and base value¹³ of profitability, assets and firm leverage variable. The first column of Table 10 shows significantly (at the 0.05 level) positive association between increase in multinationality level and profitability over the period 2002–2007. When 3-year lagged multinationality measures were introduced as in column 2, lagged multinationality variables were also significantly (at the 0.1 level) associated with increase in

¹² We excluded a fiscal year 2008 to make three equal-length sub-periods.

¹³ Base value is first 3-year average of the change period. For example if we were examining changes in profitability over the period of 1999–2007, base value of profitability would be average ROA of 1999 to 2001.

Table 10 Changes in multinationality and profitability. OLS regressions of changes in profitability on changes in degree of multinationality with control variables as below. Column 1 shows regression results of changes in ROA over the period 2005–2007(P3) to 2001–2004(P2) on changes in degree of multinationality over the same period. Column 2 show regression results of changes in ROA over the period of (P3) to (P2) on changes in degree of multinationality over the 3-year lagged period, of P2 to P1(1999–2001). These regressions are tested on sample of 550 observations and the coefficient estimates are reported with t-statistics in parantheses below

Dependent variable	Δ ROA(P3–P2)		
	9	10	11
Constant	2.43** (2.28)	2.39** (2.24)	2.46** (2.31)
ROA (P2)	–0.23*** (–5.84)	–0.23*** (–5.83)	–0.23*** (–5.93)
Δ FSTS (P3–P2)	0.06** (2.14)		0.05* (1.92)
Δ FSTS (P2–P1)		0.04* (1.89)	0.04* (1.65)
Debt/Equity (P2)	–0.0006 (–0.77)	–0.0007 (–0.89)	–0.0006 (–0.75)
ln_Asset (P2)	0.13 (1.29)	0.14 (1.43)	0.12 (1.20)
Δ AD (P3–P2)	–0.21 (–0.55)	–0.18 (–0.47)	–0.20 (–0.54)
Δ RD (P3–P2)	–0.56*** (–3.70)	–0.56*** (–3.69)	–0.55*** (–3.63)
<i>Industry</i>	Yes	Yes	Yes
Adjusted R ²	0.20	0.20	0.20
F-value	7.45	7.38	7.25
Number of observations	550	550	550

*Significant at 10 %; **Significant at 5 %; ***Significant at 1 %

profitability. The column 3 shows regression results of changes in profitability on both same period and lagged changes in multinationality. The increase in profitability is significantly associated with increase in multinationality over the same and 3-year lagged period. This result supports the assumption of Hypothesis 1, in which we presume increased degree of multinationality enhances profitability. In other words, a positive relationship between multinationality and profitability that we document in Hypothesis 1 is at least partly due to multinationality activities causing higher profitability ([M \rightarrow P] causality).

7.3 Regional Breakdown Test

To this point, we have examined the impacts of overseas business on performance by considering overseas business as one general concept. It is possible that overseas business in Asia or Europe could have different impacts on performance since the characteristics of these markets are relatively different. For example, overseas business in European countries features relatively high transactional and organizational costs because of these countries' huge cultural differences and geographic distance from Japan (Hennart 2007). To compare the performance impacts of overseas business in different regions, regression analysis of the multinationality-performance relationship is repeated by substituting different regional sales ratios to the overall degree of multinationality.

We break down the degree of multinationality into three different regional sales ratios: Asia, the Americas, and Europe. *Asia* represents the ratio of overall export and overseas sales generated from the Asia-Pacific region, excluding Japan, to total sales. *Americas* represents the ratio of overall export and overseas sales generated from the American continents to total sales. *Europe* represents the ratio of overall export and overseas sales generated from Europe and Africa to total sales. These regional sales ratios are based on the “regional segment information” of segment reporting. It is important to note that each firm reports segment information under its own regional criteria. There is no single correct answer. Therefore, we created these three main regional groups based on our understanding of regional differences and commonly used regional segmenting practices among Japanese manufacturing companies. For the cases where the overseas sales of North America and Europe are combined in one segment, we divided this amount equally into the regional sales ratios of the Americas and Europe. In addition, overseas sales from the Middle East are included in either the European or Asian region depending on the firm’s specific segmenting method. In addition to regional breakdown test by sales, we did similar analysis by using regional assets for the robustness purpose.

For this regional test, we cover only the “Electric and Electronic equipment” industry because of the heavy manual classification workload. This industry, however, seems to be adequate because there are many multinational firms in this industry, as shown in Tables 2, 3, and 4 and it is certainly one of the leading industries for the Japanese economy. In order to increase the sample size, we test our regression models using zero when the data for advertising or R&D expenditure is missing.

In Tables 11 and 12, we report the regression results of performance on the degree of multinationality using the regional sales ratio in models 12 through 17 and the regression results based on the regional asset ratio in models 18 through 23. The regression results in model 12 and 18 indicate that the Asian sales ratio has a significantly negative impact on profitability, while the impact of the Asian asset ratio is insignificant. The firm value relevance of both the Asian sales ratio and the asset ratio is statistically insignificant, as shown in models 15 and 21. Thus, despite Japanese companies’ recent surge into and growing importance in the Asian market, there is no statistical evidence that firms with higher reliance on the Asian market outperformed others among Japanese electric and electronic equipment makers. Furthermore, the association between reliance on the Asian market and profitability appears to be significantly negative, indicating that electric and electronic equipment manufacturers who have expanded into the Asian market have relatively higher costs than overseas business in other regions, and thus reduced profit margins.

In contrast, the rest of the regression results show that reliance on European or American markets is significantly associated with higher profitability and firm value. As above, the key finding of this test is that among electric and electronic equipment manufacturers, reliance on European and American markets has a positive impact on profitability and firm value, while reliance on the Asian market has a negative impact on profitability, and market reaction to it is insignificant. Thus, we argue that Japanese electric and electronic equipment companies are facing major challenges in Asian markets because overseas expansion to this region is less profitable than other regions and investors’ reaction is mixed.

Table 11 Regional breakdown test by sales. For models 12 through 17; Asia is the ratio of sales from Asia and the Pacific to total sales, Americas is the ratio of sales from North and South Americas to total sales, EU is the ratio of sales from Europe and Africas to total sales

Dependent variable	ROA					Tobin's q				
	12	13	14	15	16	17				
Model										
<i>Constant</i>	9.35*** (9.02)	10.47*** (10.02)	11.84*** (10.79)	0.45*** (6.85)	0.42*** (6.03)	0.47*** (6.45)				
<i>Asia</i>	-0.02** (-2.46)			-0.001 (-1.39)						
<i>Americas</i>		0.06*** (3.24)			0.003** (2.01)					
<i>EU</i>			0.07*** (3.21)			0.01*** (5.52)				
<i>Debt</i>	-0.006*** (-11.70)	-0.007*** (-12.05)	-0.008*** (-12.30)	0.0003*** (7.97)	0.0003*** (8.04)	0.0003*** (7.15)				
<i>Size</i>	0.01 (0.12)	-0.15* (-1.79)	-0.24*** (-2.68)	0.03*** (4.99)	0.02*** (3.92)	0.02*** (2.75)				
<i>AD</i>	0.31** (2.04)	0.40*** (2.69)	0.30* (1.91)	0.04*** (3.78)	0.03*** (2.75)	0.01 (1.17)				
<i>RD</i>	-0.25*** (-5.65)	-0.23*** (-5.59)	-0.25*** (-5.80)	0.002 (0.71)	0.01*** (3.22)	0.01*** (2.35)				
<i>EBIT</i>				0.01*** (12.98)	0.01*** (12.79)	0.01*** (12.50)				
<i>Year</i>	Yes	Yes	Yes	Yes	Yes	Yes				
Adjusted R ²	0.17	0.20	0.22	0.16	0.15	0.16				
F-value	21.48	25.43	25.62	18.51	16.76	17.26				
Number of observations	1,392	1,343	1,249	1,392	1,343	1,249				

*Significant at 10 %, **Significant at 5 %, ***Significant at 1 %

Table 12 Regional breakdown test by assets. For models 18 through 23; Asia is ratio of assets from Asia and Pacific to total assets, Americas is ratio of assets from North and South Americas to total assets, EU is ratio of assets from Europe and Africas to total assets

Dependent variable	ROA						Tobin's q		
	18	19	20	21	22	23			
Model	18	19	20	21	22	23			
Constant	6.89*** (6.28)	10.03*** (9.11)	12.64*** (10.29)	0.42*** (6.23)	0.36*** (4.83)	0.42*** (4.87)			
Asia	-0.01 (-0.76)			-0.0004 (-0.67)					
Americas		0.03 (1.41)			0.01*** (4.62)				
EU			0.08*** (2.68)						0.01*** (2.78)
Debt	-0.01*** (-10.93)	-0.01*** (-12.11)	-0.01*** (-11.98)	0.0003*** (7.92)	0.0003*** (8.29)	0.0003*** (6.42)			
Size	0.16* (1.84)	-0.09 (-1.00)	-0.27*** (-2.79)	0.03*** (5.20)	0.03*** (4.34)	0.02*** (2.80)			
AD	0.53*** (3.12)	0.70*** (4.31)	0.55*** (3.09)	0.06*** (5.46)	0.04*** (3.59)	0.04*** (3.29)			
RD	-0.21*** (-4.52)	-0.21*** (-5.05)	-0.27*** (-5.46)	0.001 (0.48)	0.01*** (2.92)	0.01*** (3.76)			
EBIT				0.01*** (12.29)	0.01*** (12.35)	0.01*** (11.45)			
Year	Yes	Yes	Yes	Yes	Yes	Yes			
Adjusted R ²	0.16	0.2	0.24	0.16	0.17	0.16			
F-value	19.33	24.67	24.21	19.24	18.31	14.22			
Number of observations	1,370	1,299	1,050	1,370	1,299	1,050			

*Significant at 10 %, **Significant at 5 %, ***Significant at 1 %

8 Conclusion

Does reliance on foreign markets make a difference? We conclude that Japanese firms' reliance on foreign markets enhances profitability and has a positive impact on firm value. Following prior studies, we test the impact of multinationality on short- and long-run performance using ROA and Tobin's q as proxies for performance. Our results show that multinationality is positively related to short-term firm performance. Our results concerning multinationality and long-term performance also provide a similar relationship pattern. It was found that investors value multinationality over domestic market concentration among Japanese manufacturing companies.

As discussed earlier, prior studies about multinationality and performance produced conflicting and inconsistent results. Based on our empirical evidence, we suspect that most Japanese manufacturing companies have thus far been profiting from overseas expansion and have not reached the point where the benefits of multinationality outweigh its costs. In other words, there are still outstanding opportunities and benefits left in overseas markets that could be exploited by Japanese manufacturing companies. Our results concerning multinationality and firm value indicate that investors encourage overseas expansion by Japanese manufacturing companies, while they react negatively to overseas expansion by US companies in prior studies. We argue that the difference in market reaction to foreign market penetration by Japanese and US companies could be due to the long-lasting steady decline of the Japanese domestic market. Among the various benefits and costs of multinationality, access to growing demand markets may be a strong motive for overseas expansion for Japanese manufacturing companies. It may be that for most Japanese firms, the only way to pursue future growth in the long run is to rely on foreign markets.

We conducted additional regional tests in an attempt to offer any further research idea or dimension to multinationality-performance research. Perhaps the most important finding of the additional tests was that the multinationality-performance relationship is likely to vary across different geographic regions. Regression results for Japanese electric and electronic equipment companies show that reliance on the Asian market has a negative impact on profitability and no significant impact on firm value, while reliance on other foreign markets such as the Americas and the EU has a positive impact on profitability and firm value. This is possibly because the newly-emerged Asian market is still price-sensitive to electric and electronic products, and competition from local rivals is likely to be more intense. Future research should aim to resolve the reason behind different valuation.

Overall, international competition and demand in different regional markets in certain industries also have a significant impact on the multinationality-performance relationship. To conclude, we argue that in the ever-changing dynamic global economy, the multinationality-performance relationship cannot be generalized, and that it evolves across different geographic regions and business areas.

Appendix

A summary of prior studies is discussed as given below.

Table A A summary of prior studies. The table summarizes regression models and the results of main prior studies. The names and definitions of measures and variables differ slightly depending on each study. FSTS is the ratio of foreign sales to total sales, and FATA is the ratio of foreign asset to total asset

Empirical studies	Measures of multinationality	Measures of performance	Sampling	Control variables	Results
Grant et al. (1988)	FSTS	ROA	304 British manufacturing firms (1972–1984)	Firm size, industrial effect, and leverage	Positive
Tallman and Li (1996)	FSTS/No. of foreign countries hosting subsidiaries	ROS	192 US manufacturing MNCs in 1987	Leverage, industry growth	Positive
Hitt et al. (1997)	Sales-based entropy index	ROA, ROS	295 US manufacturing firms (1988–1990)	Product diversification, capital structure	Inverted U curve
Gomes and Ramaswamy (1999)	FSTS, FATA, country scope, and their composite index	ROA	95 US manufacturing firms (1990–1995)	Firm size and industry effects	Inverted U curve
Christophe (1997)	FSTS	Tobin's q	500 US MNCs (1978–1986)	Size, leverage, R&D, and Ad and Capital intensity, and industry	Negative

(continued)

Table A (continued)

Empirical studies	Measures of multinationality	Measures of performance	Sampling	Control variables	Results
Denis et al. (2002)	FSTS and FATA	Excess value	7,520 US firms (1984–1997)	Size, leverage, EBIT, R&D, Ad and Capital intensity, and industry	Negative
Morck and Yeung (1991)	No. of subsidiaries and hosting countries	Tobin's q	1,644 US firms (1980–1981)	Leverage, firm size, and labor growth	No impact but enhances the impact of R&D on Tobin's q
Delios and Beamish (1999)	No. of subsidiaries and host countries	ROA, ROS, and ROE	399 Japanese manufacturing firms (1996)	Product diversity, R&D and Ad intensity, leverage, industrial profitability, and growth rate	Positive
Yashiro and Hirano (2010)	Export activity	Sales growth, productivity, and ROA	38,276 Japanese firms (2002–2005)	Industry effect, size, R&D and Ad intensity, and IT cost	Positive

References

- Bartlett, Christopher A., and Sumantra Ghoshal. 1989. *Managing across borders: The transnational solution*. Boston: Harvard Business School Press.
- Black, Elvin L., Thomas A. Carnes, Tomas Jandik, and Charlene B. Henderson. 2007. The relevance of target accounting quality to the long-term success of cross-border mergers. *Journal of Business Finance and Accounting* 34(1/2): 139–168.
- Bodnar, Gordon M., Charles Tang, and Joseph Weintrop. 1999. *Both sides of corporate diversification: The value impacts of geographic and industrial diversification*. Working paper: Johns Hopkins University.
- Buckley, Peter J., and Mark C. Casson. 1976. *The future of the multinational enterprises*. London: Macmillan.
- Chase, D., James L. Kuhle, and Carl H. Walther. 1988. The relevance of political risk in direct foreign investment. *Management International Review* 28: 31–38.
- Christophe, Stephen E. 1997. Hysteresis and the value of the US multinational corporation. *Journal of Business* 70: 435–462.
- Christophe, Stephen E., and Hun Lee. 2005. What matters about internationalization: A market-based assessment. *Journal of Business Research* 58: 636–643.
- Delios, Andrew, and Paul W. Beamish. 1999. Geographic scope, product diversification, and the corporate performance of Japanese firms. *Strategic Management Journal* 20: 711–727.
- Denis, David J., Diane K. Denis, and Kevin Yost. 2002. Global diversification, industrial diversification, and firm value. *Journal of Finance* 57(5): 1951–1980.
- Errunza, Vihang R., and Lemma W. Senbet. 1981. The effects of international operations on market value of the firm: Theory and evidence. *Journal of Finance* 36: 401–417.
- Errunza, Vihang R., and Lemma W. Senbet. 1984. International corporate diversification, market valuation, and size-adjusted evidence. *Journal of Finance* 39: 727–745.
- Gomes, Lenn, and Kannan Ramaswamy. 1999. An empirical examination of the form of the relationship between multinationality and performance. *Journal of International Business Studies* 30: 173–188.
- Graham, John R., and Campbell R. Harvey. 2001. The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics* 60: 187–243.
- Grant, Robert M. 1987. Multinationality and performance among British manufacturing companies. *Journal of International Business Studies* 18: 79–89.
- Grant, Robert M., Azar P. Jammine, and Howard Thomas. 1988. Diversity, diversification, and profitability among British manufacturing companies 1972–84. *Academy of Management Journal* 31: 771–801.
- Hennart, Jean-Francois. 2007. The theoretical rationale for a multinationality-performance relationship. *Management International Review* 47: 423–452.

- Hitt, Michael A., Robert E. Hoskisson, and Hicheon Kim. 1997. International diversification: Effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal* 40: 767–798.
- Iida, Kazuto. 2010. The development of foreign direct investment and the establishment of global capital in Japan (in Japanese). *The Review of Economics and Political Science* 78(5/6): 1–39.
- Jensen, Michael C. 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76: 323–329.
- Jensen, Michael C., and Kevin J. Murphy. 1990. Performance pay and top management incentives. *Journal of Political Economy* 98(2): 225–264.
- Kim, Chan W., Peter Hwang, and William P. Burgers. 1993. Multinationals' diversification and the risk-return trade-off. *Strategic Management Journal* 14: 275–286.
- Kiyota, Kozo, and Shujiro Urata. 2005. The role of multinational firms in international trade: The case of Japan. *RIETI Discussion Paper series* 05-E-012:1–32.
- Kogut, Bruce. 1984. Normative observations on the international value-added chain and strategic groups. *Journal of International Business Studies* 15: 151–167.
- Kostova, Tatiana, and Srilata Zaheer. 1999. Organizational legitimacy under conditions of complexity: The case of the multinational enterprises. *Academy of Management Review* 24: 64–81.
- Li, Lee, and Gongming Qian. 2005. Dimensions of international diversification: The joint effects on firm performance. *Journal of Global Marketing* 18(3/4): 7–35.
- Maisonrouge, Jacques G. 1974. The mythology of multinationalism. *Columbia Journal of World Business* 9(1): 7–12.
- Melitz, Marc J. 2003. The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica* 71: 1695–1725.
- Morck, Randall, and Bernard Yeung. 1991. Why investors value multinationality. *Journal of Business* 64: 165–187.
- Morck, Randall, and Bernard Yeung. 1997. Why investors sometimes value size and diversification: The internalization theory on synergy. *Working paper*, Institute for Financial Research, University of Alberta.
- Rugman, Alan M. 2009. *The Oxford handbook of international business*, 2nd ed. New York: Oxford University Press.
- Tallman, Stephen, and Jiatao Li. 1996. Effects of international diversity and product diversity on the performance of multinational firms. *Academy of Management Journal* 39: 179–196.
- Thomas, Douglas E., and Lorraine Eden. 2004. What is the shape of the multinationality-performance relationship? *Multinational Business Review* 12(1): 89–110.
- Yashiro, Naomitsu, and Daisuke Hirano. 2010. Performance and investment behavior of exporting firms during the export boom period (in Japanese). *RIETI Policy Discussion Paper Series* 10-P-005:1–41.

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