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How Does the Market Value Organizational Management Practices of Japanese Firms? Using interview survey data

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Abstract

This paper examines the extent to which a firm's management practices are valued in the marketplace using the interview survey data which are comparable with that in Bloom and Van Reenen (2007). Kawakami and Asaba (2013) use the same interview data and find that among various management practices, human resources management has a significantly positive impact on Tobin's q, while some of the organizational management variables have a significantly negative impact. The latter result is contrary to Bloom and Van Reenen (2007; 2010; 2012). This paper tries to examine the relationship in more detail between organizational management practice and Tobin's q. We use the raw answers for calculating the organizational management score instead of the organizational management score itself. The detailed analysis suggests three characteristics of management practices: (i) Information sharing and coordination within a unit or a team increases the firm value, while disclosure of information and coordination across units decreases the value; (ii) The impact of quick decision making on a firm's market value varies depending upon the contexts; (iii) Speedy decision making increases the value in the case of new business development, while consultation with the people concerned increases a firm's market value in the case of closing an existing business.

Keywords: Management practices, Intangible assets, Firm values
JEL classification: L22, M10, M12

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I. INTRODUCTION

It has been argued that various kinds of intangible assets influence firm performance. Corrado, Hulten, and Sichel (2005; 2009) classified intangible assets into three categories: computerized information, innovative property, and economic competencies. Many studies have examined the impacts of computerized information and innovative property on firm performance.[1] Regarding economic competencies, marketing scholars have studied brand equity (Aaker, 1991; Ito, 2000; Simon and Sullivan, 1993), but the economic study of management practices, the other component of economic competencies related to human and organizational capital, has just started recently (Bloom and Van Reenen, 2007; 2010).[2]

It is recognized that even though such intangible assets are valuable to firms, they are not sufficiently publicly revealed. According to Canon's *Yuka Shoken Hokoku-sho* (Japanese 10k report) issued in December 2011, for example, the value of tangible fixed assets was 750 billion yen, while that of intangible fixed assets was 35 billion yen. The latter includes patents, land leaseholds, trademarks, designs, and software, which form only a proportion of the company's intangible assets. Most of the intangible assets discussed above, however, are not reported on a firm's balance sheet.

[1] In terms of computerized information, Brynjolfsson and Hitt (1995), for example, examined the relationship between IT investment and productivity. Many management scholars have examined the impact of innovative property or technological capability on firm performance (Argyres, 1996; Helfat, 1994; 1997; Henderson and Cockburn, 1994).

[2] Human and organizational capital has not been studied in economics, but in the field of management.

Since firms spend ample resources to acquire and accumulate intangible assets, it is important to know how the market values them. While several researchers have attempted to evaluate the technological capability and brand equity by using the investment in R&D and advertising, few studies have evaluated human and organizational capital. Especially, the market value of management practices has not been examined, because of a lack of investment in improving management practices.[3]

Therefore, this study tries to investigate how organizational management practices influence firm values using the interview survey for Japanese firms. First, we summarize the study (Kawakami and Asaba, 2013), which investigates how firm values are affected by management practice scored in the similar way to Bloom and van Reenen (2007). Kawashima and Asaba (2013) finds that the management practices have much smaller impacts on Tobin's q than those of R&D or advertising, because some organizational management variables have significantly negative impacts on Tobin's q, contrary to the findings of Bloom and Van Reenen (2007; 2010; 2012).

This finding of Kawashima and Asaba (2013) different from those of Bloom and Van Reenen's several studies leads to the second analysis in this paper. We investigate the relationship in more detail between management practice and firm values to understand the reason for the

[3] Miyagawa, Takizawa, and Edamura (2013) is an exception. They evaluate economic competence using the data on labor costs and expense on organizational reforms.

absence of significantly positive impacts of organizational management practices on Tobin's q.

The study is structured as follows: In the next section, we explain our management practice survey and propose our analysis. The third section describes the data and variables. In the fourth section, we summarize the results of estimation in Kawakami and Asaba (2013). Section five presents a finer analysis of the impact of each organizational management practice on Tobin's q to help us understand the low value placed on organizational management practices in Japan. The final section concludes the study with a discussion of the results and the future research agenda.

II. MARKET VALUE OF MANAGEMENT PRACTICES

Management Practice Survey

Following Bloom and Van Reenen (2007), we conducted interview surveys, "Intangible assets Interview Survey in Japan" (hereinafter referred to as IAISJ)[4]. We interviewed the managers of the planning departments of listed firms in Japan. We conducted the interviews twice.[5] The first interview was conducted between October 2011 and March 2012, and the

[4] IAISJ consists of two surveys. First survey was conducted in 2007 and second survey was conducted in 2011 and 2012. This paper uses second survey.

[5] We asked the research firms to conduct the interviews. Upon the examination of the results of the pilot interviews, we discussed the methods to interview and score the answers with them.

second between July and September 2012. Consequently, we interviewed 402 firms.[6] Table 1 provides the composition of the industries of the respondents.

--- Insert Table 1 around here ---

We asked the questions in ten categories: business environment, production management system, organizational goal/target, human resource management, human resource development, acquisition of human resource, lifetime employment system, industrial relations, decision making and information flow, and organizational reform. We assume that organizational goal/target, industrial relations, and decision making and information flow categories relate to organizational capital, while human resource management, human resource development, and acquisition of human resource categories relate to human capital.

We asked a few questions in each category, except for the lifetime employment system and industrial relations categories, which only had one question each. In each question, we have three sub-questions, and the higher the number of sub-questions answered positively by the respondents, the more points they receive. For example, there are several questions in the human resource development category. One of the questions, Employee's expertise, is composed of three sub-questions:

(1) "Are employees rotated on a fixed schedule (e.g., once every two or three years)?"

[6] In the second IAISJ, we interviewed 277 firms in 2011 and 130 in2012. Among these, we found two duplicates and three unavailable firm observations, and consequently, used 402 firm observations.

(2) “To improve the expertise of the employees, are they assigned to a set position for a long time?”

(3) “Is there a systematic program in place for employees to acquire some expertise?”

If the respondent answers the first sub-question with a “No,” the score is 1. If the answer is “Yes,” then the respondent moves to the second sub-question. If the answer to the second sub-question is “No,” the respondent gets a score of 2. If the answer to second question is “Yes,” then the respondent moves to the third sub-question. If the answer to this third sub-question is “No,” respondent gets a score of 3, but if the answer is “Yes,” then the score is 4.

Consequently, we assign a score from 1 to 4 for each question, depending upon the answers to the three sub-questions.[7]

III. DATA AND VARIABLES

Variables of Management Practices

We construct the variables of management practices using the scores of the interview survey (IAISJ) described above. In the interview, the respondents were required to answer questions on the situation in the latter half of the 2000s. To construct the other variables described below, therefore, we collect the financial data of each year from 2005 to 2010. Thus, it is

[7] Miyagawa, Lee, Kabe, Lee, Kim, Kim, and Edamura (2010) describe the scoring system of this interview survey in more detail.

supposed that we have 2412 observations (402 firms * 6 years). However, some of the financial data from the past years that was necessary to construct several variables described below was missing for many firms. Consequently, we obtained a total of 373 observations for the whole sample, 261 for the manufacturing industry sub-sample, and 112 for the non-manufacturing industry sub-sample[8].

As for the management practice variable, Kawakami and Asaba (2013) summarized in section four and further analysis of this study reported in section five use different measures. Kawakami and Asaba (2013) use the first principal component calculated by principal component analysis instead of the raw interview score. They asked various questions to measure the degree of good management practices. Thus, the first principal component is considered a general indicator of good management practices. The equation of component c_j is

$$c_j = \gamma_j (X - \mu) \tag{5}$$

γ_j is orthonormal eigenvector of component j, X is the vector of scores calculated from each question and μ is mean vector of X. They aggregate all the scores into one variable, *pcaq_all*. To compare the components attributable to management practices and others in the decomposition of estimated value of intangible assets, they standardize the variables of

[8] Table 1 shows the distribution of industry in our estimation sample. Because of adopting R&D and advertising expenditure variables, many observations of non-manufacturing firms are removed in the estimations.

management practices, R&D activities, and advertising. Therefore, they use z score of each variable, which is denoted as *variable name_z* (*pcaq_all_z*, for example). Moreover, they divide the questions into two categories: organizational capital and human resource management. They aggregate the scores in the category of organizational capital into one variable, *pcaq_org*, and that of the human resource management category into the other variable, *pcaq_human*.

As explained in more detail in section five, further analysis of this study, on the other hand, uses dummy variables for each score of each question in the organizational capital category to focus the qualitative influence of management practice to the firm value. We assign the scores from 1 to 4 for each question, depending upon the answers to the three sub-questions. Therefore, we create three dummy variables for each question: *Score2_D*, *Score3_D*, and *Score4_D*. *Score2_D* is 1 if the score is 2, and 0 otherwise. *Score3_D* is 1 if the score is 3, and 0 otherwise. *Score4_D* is 1 if the score is 4, and 0 otherwise.

We check the coefficient of each dummy variable to see if there is a nonlinear relationship between organizational management practices and firm values. Moreover, dummy variable approach expresses what organizational factors have positive or negative effect to firm values.

Other Variables

To decompose the intangible asset into components stemming from management practices, advertisement, and R&D activities, we estimate Tobin's q – 1. Following Hori, Saito and Ando (2004), we calculate Tobin's q as follows.

$$q = \frac{Average\ stock\ price * Number\ of\ authorized\ \ shares + Interest\text{-}bearing\ liabilities}{Total\ Assets - K\ at\ previous\ year + Replacement\ value\ of\ real\ capital\ stock\ at\ previous\ year}$$

K denotes tangible assets, which are calculated by perpetual inventory method following $K_t = (1-\delta)K_{t-1} + I_t$, except for land. Land price is maintained booked value. δ is depreciation rate.[9]

For R&D activities, we use the natural logarithm of R&D expenditures (*lnrd*), and for advertisement, we use the natural logarithm of advertising expenditures (*lnadv*). As control variables, we include the natural logarithm of number of employees (*lnL*), the natural logarithm of firm age (*lnage*), and four-firm cumulative concentration ratio (*CR4*). We also include a year dummy and an industry dummy. This financial data is collected from the securities report published by Development Bank of Japan. Table 2 and table 3 indicate the definition and summary statistics of the variables, respectively[10].

--- Insert Table 2 and Table 3 around here ---

[9] The depreciation rate of building is 0.047, structure is 0.0564, machinery is 0.09489, ship is 0.1470, vehicle is 0.1470, and tool is 0.08838.

[10] We calculated VIF to check multicollinearity among R&D expenditure, number of employees and organizational score and confirmed it doesn't have multicollinearity in these variables.

Estimation Method

For estimating the attribution of each intangible asset to firm value, we use IAISJ and financial data between 2005 and 2010. These data are not panel, but pooled data, because the same values of the management practice score of each firm is applied over the observation period. However, as Wooldridge (2001) indicates, the use of pooled data may cause a problem of serial correlation. Nonetheless, Wooldridge (2001) also suggests that feasible GLS (FGLS) is a way to deal with the problem of serial correlation. Thus, we adopt FGLS as the method of estimation.

The process of FGLS is as follows: First of all, we estimate regression of $q-1$ on independent variables, obtain the residuals $\hat{u}$, and take the logarithm of squared $\hat{u}$, $\log(\hat{u}^2)$. Second, using $\log(\hat{u}^2)$, we estimate the regression of $\log(\hat{u}^2)$ on the same independent variables as the first step and obtain the fitted value $\hat{g}$ and its exponential form, $\hat{h} = \exp(\hat{g})$. Finally, we estimate the weighted least squares of $q-1$ on the independent variables using weight $1/\hat{h}$.

IV. ESTIMATION OF Q-1 IN KAWAKAMI AND ASABA (2013)

The results from the estimation of equation (4) are presented in Table 4 and 5. Model (1) and (2) in Table 4 show the results using the first principal component of all the items (*pcaq_all_z*) as a management practice variable, while Model (3) and (4) show the results using the first principal component related to human resource management (*pcaq_human_z*) and that

related to organizational capital (*pcaq_org_z*). Model (1) and (3) represent the whole sample, while Model (2) and (4) represent only the manufacturing industry sample.

As indicated in Model (1) and (2), *pcaq_all_z* is significant and positive. Thus, these results suggest that management practices have a significantly positive impact on Tobin's q. On the other hand, as Model (3) and (4) elucidate, *pcaq_org_z* is negative and it is significant in Model (3), while *pcaq_human_z* is positive and significant. Therefore, these results suggest that among management practices, human resource management and organizational capital have different effects. Management practices associated with human resource management have a positive impact on Tobin's q, while management practices associated with organizational capital have a negative impact on Tobin's q.

In addition, for the other variables related to intangible assets, *lnrd_z* and *lnadv_z* are positive and significant in all models of Table 4. Therefore, R&D and advertising expenditures have a positive impact on q and the market value of intangible assets. However, for control variables, *lnL* is negative and significant in all models, suggesting that large size in terms of number of employees has a negative impact on q. *CR4* is positive in Model (1) and (2), while negative in Model (3) and (4), but it is significant only in Model (4). *Lnage* is negative for the whole sample and significant in Model (3), while it is positive in case of the manufacturing industry sample and significant in Model (2).

--- Insert Table 4 around here ---

Table 5 shows the results of the estimation for the whole sample (Model (5) and (8)), manufacturing industry sample (Model (6) and (9)), and non-manufacturing sample (Model (7) and (10)). Since R&D data was not available for many firms of the non-manufacturing industry, *lnrd* is not included in each model. As Table 4, Model (5) indicates, *pcaq_all_z* is positive and significant for manufacturing and non-manufacturing samples, while it is positive, but not significant for the whole sample. Advertising expenditures, however, are significantly positive for the whole sample and the manufacturing industry sample, but they are significantly negative for the non-manufacturing industry sample.

As Model (8), (9), and (10) reveal, *pcaq_human_z* is positive and significant for all the samples. However, *pcaq_org_z* is negative and significant for the whole sample and the manufacturing industry sample, while it is positive (but not significant) for the non-manufacturing industry sample. Therefore, it is a very robust result that indicates the positive impact of management practices associated with human resource management on Tobin's q[11].

[11] Tobin's q is the measurement on how investors evaluate the value of the target firm. However, investors may not be able to evaluate firm value correctly. In this case, profitability or productivity may be better measurements than Tobin's q. Kawakami & Asaba (2013) estimate any impacts of organizational management practice variables on profitability. The result is the same as those reported in this paper: Organizational management practice variables have insignificant or even negative impact on Tobin's q.

--- Insert Table 5 around here ---

V. FURTHER EXPLORATION OF MANAGEMENT PRACTICES

As noted above, Kawakami and Asaba (2013) find some variables related to organizational capital have a negative impact on *q-1*. Therefore, we further explore the variables of organizational management practices to understand why they do not have a significantly positive impact on Tobin's q.

Instead of *pcaq_org_z*, we include dummy variables for each score of each question in the organizational capital category. As explained above, each question has three sub-questions, and the more sub-questions a respondent answers positively, the greater is the score. We assign the scores from 1 to 4 for each question, depending upon the answers to the three sub-questions.[12] Therefore, we create three dummy variables for each question: *Score2_D*, *Score3_D*, and *Score4_D*. *Score2_D* is 1 if the score is 2, and 0 otherwise. *Score3_D* is 1 if the score is 3, and 0 otherwise. *Score4_D* is 1 if the score is 4, and 0 otherwise. We suppose that the larger is the score of the responding firm, the better are its management practices. Thus, we predict that all the three dummy variables have a significantly positive coefficient, and that the value of the coefficient increases from *Score2_D* through *Score3_D* to *Score4_D*.

[12] The questions and sub-questions for organizational capital category are in the Appendix.

The first model of each of Table 6 through Table 11, and model (17-1) and (17-2) of Table 12 present the results of the analysis. Each model includes the dummy variables (*Score2_D,* *Score3_D,* and *Score4_D*) for each of the eight different questions. In all the models, the results of the dummy variables are different from our expectation. We expected that all the three dummy variables have a significantly positive coefficient, and the coefficient of *Score2_D* is the lowest and that of *Score4_D* is the highest. However, in model (11-1), for example, *Score2_D* and *Score4_D* are negative, while *Score3_D* is significantly positive.

Thus, we examine the content of the questions, and modify the assignment of scores or drop the observations in the following manner: (1) if there are very few respondents for a certain score, we drop the observations for the score, (2) if the respondents answer “No” to the first sub-question (score 1), but their answers are suspected to vary in meaning, we drop such observations with score 1, (3) we change the dummy variables: the second model of each table (from 6 to 11) includes *Score3_D* and *Score4_D* (the base is the observations with score 1 and 2), and the third model includes only *Score4_D* (the base is the observations with score 1, 2, and 3).

Table 6 shows the results of the exploration of questions on setting target levels. As Model (11-1) indicates, the result is different from our expectations. Therefore, following the modification rule (3), we estimate models (11-2) and (11-3). The results indicate that *Score3_D* in model (11-2) is significantly positive, while *Score4_D* in model (11-3) is significantly negative.

The second sub-question is “Are the target levels appropriately set as non-binding challenges?” Therefore, setting appropriate levels of targets increases firm value. The third sub-question, on the other hand, is “Are target levels checked to ensure there is fairness between divisions or sections?” Thus, this result may suggest that keeping fairness between divisions needs coordination costs that decreases firm value.

--- Insert Table 6 around here ---

Table 7 shows the results for the questions on permeation of goals. Following the modification rule (3), we estimate the models (12-2) and (12-3). The result suggests that *Score4_D* in model (12-3) is significantly positive. The third sub-question is “Do all the employees accept the target levels and are they motivated to reach the levels?” Thus, the result suggests that whether employees know and understand the goal or not does not matter, but permeation of the goal, which motivates the employees, increases firm value.

--- Insert Table 7 around here ---

Table 8 shows the results for the questions on checking the degree of goal achievement. Following the modification rules (3), we estimate the models (13-2) and (13-3). In addition, very few respondents got a score of 1 for this question. Therefore, following rule (1), the observations with score 1 were dropped.[13] The results, however, indicate that *Score4_D* is not significant.

[13] For this question, there were no negative responses to the second sub-question (score is 2). As a result, the

Thus, we understand that insignificant results of dummy variables suggest that this management practice (checking on performance) is not relevant to the Japanese firms.

--- Insert Table 8 around here ---

Table 9 presents the results for the question on permeation of degree to which goals are achieved. Following the modification rule (3), we estimate the models (14-2) and (14-3). The result indicates that none of the dummy variables are significant, suggesting that none of the scores have any significant impact on firm value. Thus, we understand that this management practice (permeation of degree to which goals are achieved) is not relevant to the Japanese firms.

--- Insert Table 9 around here ---

Table 10 shows the results for the question on handling the situation when goals have not been achieved. Following the modification rule (3), we estimate the models (15-2) and (15-3). Moreover, the first sub-question is “Is a meeting consisting of managerial staff and employees promptly held as soon as it is known that the goals were not achieved?” To this sub-question, not only those who do not have an immediate meeting, but also those who achieved all the goals can answer “No.” Since, in this case, score 1 (answer “No” to the first sub-question) observations can include different kinds of respondents, we drop it from consideration, following the modification rule (2). Model (15-2) indicates that *Score3_D* and *Score4_D* are significantly negative,

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dummy variable in either model is *Score4_D* only, but the observations with score 1 were dropped in model (13-3) and not in the model (13-2).

suggesting that the documentation of measures for handling the failure to achieve the goal or their disclosure to other divisions decreases firm value.[14]

--- Insert Table 10 around here ---

Table 11 presents the results for the question on handling the situation when goals have been achieved. Following the modification rule (3), we estimate the models (16-2) and (16-3). The result indicates that none of the dummy variables are significant, suggesting that none of the scores have any significant impact on firm value. Thus, we understand that this management practice (handling the situation when goals have been achieved) is not relevant to the Japanese firms.

--- Insert Table 11 around here ---

Table 12 shows the results for the question on the speed of decision making. In models (17-1) and (17-3), the results of the dummy variables are not as we expected, we modify the specifications of the models in the following way. In (17-2) and (17-4), interaction terms between decision speed and logarithm of firm age are added. The question corresponding to the first two models (17-1) and (17-2) is “When you start a new business with other departments, how long do you spend on ground work?” While the result of (17-1) indicates no correlation between decision speed and firm value, in model (17-2) which includes interaction terms, Score4_D is significantly

[14] It may be because of reverse causality. Low performers have to adopt sophisticated management practices such as documentation and disclosure of measures to fix the problems.

negative and Score4_D*lnage is significantly positive at the 1% significant level. This result suggests that in case of starting new business, the values of firms with speedy decision are significantly low, but older firms should decide quickly. It may be a problem for older firms to take longer time to make a decision.

On the other hand, Score3_D is significantly negative in (17-3). Score2_D is also significantly negative in model (17-4), although it is 10% level. The question corresponding to these models is “When you close an existing business, how long do you spend on ground work?” The results suggest that making a quickl decision or consideration with enough time on closing an existing business increase the firm value. We discuss these contrasting results in the next section.

--- Insert Table 12 around here ---

VI. DISCUSSION AND CONCLUSION

This paper tries to understand why management practices have much smaller impact on the intangible asset value of the firm than the other factors such as R&D and advertising. According to Kawakami and Asaba (2013), it is because management practices associated with organizational capital either have an insignificant or a negative impact on the intangible asset

value. Therefore, we further explore the variables of organizational management practices to understand why they do not have a significantly positive impact on Tobin's q, contrary to our expectations.

We find that in any organizational management practices, the order of the scores is different from our expectation. We can divide the items of management practices that give unexpected results into two groups. In one group, the difference in the influence on firm value among the detailed practices (sub-questions) is not significant. It implies that these management practices are not relevant to the intangible asset value of Japanese firms. In the other group, however, detailed practices that we supposed were the best actually have a negative impact on firm value.

In the latter group, the item of ground work, for example, has an interesting implication. In case of starting a new business, quick decision have a negative impact on firm value, but such a negative impact is weak in older firms. It is often pointed out that the inability to make a quick decision is a problem for older firms. Therefore, quick decision may not have a significant negative impact to older firms suffering such a problem. In case of closing an existing business, quick decision making or consideration with enough time increases firm value, and half measures are the worst. It may be usually expected that quick decision making is beneficial, however, when an existing business is closed, ground work sometimes have a positive impact. It

is probably because making such a decision without consultation increase conflicts and complaints within the firm, ultimately decreasing firm value, since many people are influenced by the decision. Therefore, it is reasonable that quick decision making may have varied impacts on firm value.

The items related to setting target levels and handling the situations when goals are not achieved also have an interesting implication. The analysis on the detailed practices of both the items revealed that interaction with other divisions, either to maintain fairness or to share measures for the unachieved goals, has a negative impact on firm value. It may suggest that coordination costs decrease firm value.[15] Moreover, the analysis on the item related to handling of situations with unachieved goals indicated that immediate meeting within the division increases firm value, while the documentation of measures for unachieved goals and their disclosure to the other divisions decreases firm value. The two detailed practices correspond to different processes in knowledge creation.

The SECI model of knowledge creation indicates four processes: Socialization, Externalization, Combination, and Internalization (Nonaka and Takeuchi, 1995). Immediate meeting within the division corresponds to socialization, which means sharing tacit knowledge

[15] In the firms where the measures for the unachieved goals should be shared among the divisions, the division with unachieved goals may not try hard to develop any effective measures for fear of being informed that the division could not achieve the goals. This is included in coordination costs.

through face-to-face communication or shared experience, while documentation and disclosure of measures corresponds to externalization, that is, conversion of tacit knowledge to explicit knowledge by developing concepts and models. Thus, Japanese firms that are good at socialization can increase firm value, while those with problems with externalization cannot increase firm value. Moreover, conversion of tacit knowledge to explicit by documentation and distribution throughout the organization may break down the process of tacit knowledge creation among the people with shared experience in the division.

This further exploration of organizational management practices explains some of the reasons behind the lesser impact of management practices on firm value. However, it is reasonable that management practices have a lesser impact on firm value than R&D activities and brand equity, because management practices, as firms' routines, are difficult for outsiders to observe. It is consistent with the fact that causal ambiguity is one of the intangible barriers to imitation. When a firm's distinctive capabilities involve tacit knowledge, they are difficult to articulate as an algorithm, formula, or set of rules, and therefore, not observable or imitable (Rumelt, 1984; Reed and DeFillipi, 1990). Hence, it is argued that intangible assets can be the source of sustainable competitive advantages (Villalonga, 2004).

Some researchers develop a similar argument for the uniqueness of strategy, which is necessary for creating economic rents and should be positively associated with firm value.

However, uniqueness in strategy heightens the cost of collecting and analyzing information to evaluate a firm's future values, and therefore, capital markets systematically discount these choices of firms (Litov, Moreton, & Zenger, 2012). Among intangible assets, technological capability and brand equity, are relatively easy for outsiders to observe, because R&D and advertising expenditures are publicly revealed.

Contrary to our findings, Bloom and Van Reenen (2007; 2010; 2012) suggest that a high score of management practices leads to high firm performance, and therefore, indicates good management practices. We consider two possible reasons for such a contradiction: a difference in the survey methods and in good management practices followed across countries. While Bloom and Van Reenen (2007) administered the survey to manufacturing plant managers, we interviewed the managers of planning departments. Thus, their survey focused on management practices of manufacturing plants, while our interviews considered management practices of firms as a whole. Some management practices distinctively good for manufacturing plants may not be so for non-plant establishments or organizations as a whole. Therefore, this difference in the method of survey/ interview may be a reason for the difference in results.

For example, if for the item on training we inquire whether training on an occupational ability (manufacturing, sales, etc.) is regularly executed, a high score on this item may result in high performance at the plant level, but not at the company level. Instead of such training,

training on leadership, strategy formulation, and finance, or education through an MBA program may be more relevant at the company level.

The other reason for the contradiction in results may relate to the difference in management styles among different countries (Aoki, 1988; 2010), as our further exploration of organizational management practices suggests. For example, speedy decision making is usually considered good management practice, while ground work, which slows down decision making, is regarded as bad management practice. In U.S. firms with a hierarchical coordination mechanism, people only have to report to their boss, and do not need prior consultations with many people. Therefore, speedy decision making without long ground work may increase productivity and firm performance. However, in Japanese firms with a horizontal coordination mechanism, people need to consult with many people ex ante to reach a consensus. Decisions without a consensus may not be implemented smoothly, and therefore, decrease firm performance.

Thus, good management practices that result in high firm performance are different for Japan and other countries. The further exploration of detailed practices in this paper suggests that some of the practices decrease firm value in the Japanese firms. Therefore, it is a promising future direction for international comparative research to refine the survey to capture good management practices that aid in high performance in Japanese firms, and collect data from

Japanese firms as well as their counterparts in foreign countries.

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Appendix: Questions related to organizational management practices

Implementation of organizational goals (setting target levels)

2. Are the settings for the individual or sectional target levels simply given to you from the division or section above you? Or are opinions of your division or section considered before the settings are given?

3. Are the target levels appropriately set as non-binding challenges?

4. Are target levels checked to ensure there is fairness between divisions or sections?

Implementation of organizational goals (permeation of goals)

2. Do all employees know the goals?

3. If goals exist on various levels (such as company-wide, divisional, and sectional), do all employees understand the level of priority of the goals?

4. Do all the employees accept the target levels and are motivated to reach the levels?

Implementation of organizational goals (degree to which goals are achieved, checks on performance)

2. Are checks made to see how far goals have been achieved?

3. Are the checks made regularly?

4. In addition to the checks as a formal system, do employees make the checks voluntarily?

Implementation of organizational goals (permeation of degree to which goals are achieved, and results of checks on performance)

2. Are the results of such checks made openly available within your division?

3. Are the results of such checks made openly not only within your division, but also between relevant divisions?

4. Are adjustments made to ensure a fair comparison of the degree to which goals have been achieved at different divisions?

Implementation of organizational goals (results of checks – handling when goals have not been achieved)

2. Is a meeting consisting of managerial staff and employees promptly held as soon as it is known that the goals were not achieved?

3. After investigation, are points to revise spread throughout the division, and are measures for handling the failure to achieve the goals promptly implemented?

4. Are problematic issues and countermeasures informed throughout the relevant divisions, and

if necessary, other divisions?

Implementation of organizational goals (results of checks – handling when goals have been achieved)

2. When goals are achieved, are investigations made to renew those goals on a continuous basis or to set higher goals?

3. How long does it take between setting higher goals and the operation / implementation of those goals?

4. Are these measures institutionalized on a company-wide level?

Decision making speed (ground work in case of starting a new business)

When you start a new business with other departments, how long do you spend on ground work? Provide a ratio within 100% for the time spent on ground work (from the beginning of the project to the start of the business).

1. over 60%
2. 40% to 59%
3. 20% to 39%
4. Under 19%

Decision making speed (ground work in case of closing an existing business)

When you close an existing business, how long do you spend on ground work? Provide a ratio within 100% for the time spent on ground work (from the beginning of the project to the closing of the business).

1. over 60%
2. 40% to 59%
3. 20% to 39%
4. Under 19%

* The number of each sub-question is the score you get when you answer "Yes" to the sub-question.

Table 1: Industry Composition

	All Respondents	Target of Estimation
Foods	6.5%	9.4%
Chemical	4.7%	1.8%
Pharmaceutical	2.5%	12.6%
Metal	9.2%	5.1%
Machinery	10.4%	17.7%
Electric Machinery	11.2%	10.8%
Automotive	4.2%	5.4%
Other Manufacturing	18.9%	27.1%
Sub Total (Manufacturing)	67.7%	89.9%
Construction	5.2%	4.0%
Wholesale and Retail	6.7%	0.0%
Restaurant	4.7%	0.0%
Real Estate	2.5%	0.7%
Transportation	1.2%	0.0%
Information Service	6.2%	1.8%
Other Service	5.7%	3.6%
Sub Total (Non-manufacturing)	32.3%	10.1%
Total	100.0%	100.0%

Table 2: Definition of Variables

Variables	Definition
V	Tobin's q minus 1
pcaq_all	First component of principle component analysis using questions 3, 4, 5, 6, 7, 8, 9
pcaq_human	First component of principle component analysis using questions 4, 5, 6, 7
pcaq_org	First component of principle component analysis using questions 3, 8, 9
lnrd	Logarithm of R&D expenditure
lnadv	Logarithm of advertising expenditure
lnage	Logarithm of firm age
CR4	4 firms consentration ratio
lnL	Logarithm of number of employees

Note: Question numbers for estimating *pcaq_all*, *pcaq_hum* and *pcaq_org* are those in the1st interview of the second survey.

Table 3: Summary Statistics

	All Industries			Manufacturing		
	Observations	Mean	Std. error	Observations	Mean	Std. error
V	269	0.02	1.00	241	−0.08	0.58
lnrd	269	13.37	1.95	241	13.64	1.80
lnadv	269	12.64	1.91	241	12.76	1.87
lnage	269	3.98	0.49	241	4.01	0.45
CR4	269	0.09	0.23	241	0.10	0.24
pcaq_human	269	0.09	1.39	241	0.04	1.39
pcaq_org	269	−0.04	1.20	241	−0.07	1.15
pcaqall	269	0.06	1.51	241	−0.01	1.47
year2	269	2006.93	1.47	241	2006.95	1.47

	Non−Manufacturing(concluding lnrd)			Non−Manufacturing		
	Observations	Mean	Std. error	Observations	Mean	Std. error
V	28	0.91	2.46	112	0.29	1.49
lnrd	28	11.07	1.66	28	11.07	1.66
lnadv	28	11.63	1.96	112	12.56	2.01
lnage	28	3.72	0.74	112	3.61	0.54
CR4	28	0.01	0.01	112	0.01	0.05
pcaq_human	28	0.56	1.24	112	0.23	1.41
pcaq_org	28	0.21	1.55	112	−0.04	1.30
pcaqall	28	0.61	1.78	112	0.25	1.62
year2	28	2006.79	1.47	112	2007.06	1.49

Table 4: Determinants of Tobin's q (1)

	(1)	(2)	(3)	(4)
pcaq_all_z	0.056 **	0.078 ***		
	(2.09)	(2.96)		
pcaq_hum_z			0.103 ***	0.099 ***
			(3.34)	(3.17)
pcaq_org_z			−0.082 **	−0.049
			(−2.44)	(−0.91)
lnrd_z	0.166 ***	0.201 ***	0.197 ***	0.220 ***
	(3.09)	(4.55)	(4.07)	(2.80)
lnadv_z	0.127 **	0.145 ***	0.112 **	0.095 **
	(2.41)	(3.53)	(2.41)	(2.40)
lnL	−0.142 ***	−0.190 ***	−0.148 ***	−0.176 *
	(−2.72)	(−3.76)	(−3.00)	(−1.92)
CR4	0.020	0.038	−0.028	−0.109 *
	(0.34)	(0.68)	(−0.53)	(−1.74)
lnage	−0.121	0.089 **	−0.188 *	0.039
	(−1.49)	(2.30)	(−1.86)	(0.72)
_cons	1.280 **	0.587	1.440 **	0.698
	(2.36)	(1.44)	(2.33)	(0.91)
Observtations	269	241	269	241
F-Statistics	27.048	11.474	23.604	13.466
Prob>F	0.000	0.000	0.000	0.000
R-sq	0.364	0.228	0.415	0.195
adjusted R-sq	0.326	0.190	0.378	0.153

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in italics.

Table 5: Determinants of Tobin's q (2)

	(5)	(6)	(7)	(8)	(9)	(10)
pcaq_all_z	0.017	0.055 **	0.122 *			
	(0.80)	(2.14)	(1.87)			
pcaq_hum_z				0.080 ***	0.089 ***	0.176 **
				(2.99)	(3.45)	(2.43)
pcaq_org_z				−0.082 ***	−0.080 **	0.010
				(−2.62)	(−2.04)	(0.11)
lnadv_z	0.092 **	0.172 ***	−0.135 *	0.069 **	0.171 ***	−0.135
	(2.31)	(5.00)	(−1.70)	(2.03)	(5.66)	(−1.53)
lnL	−0.012	−0.049 *	0.055	0.004	−0.018	0.071
	(−0.49)	(−1.79)	(0.59)	(0.17)	(−0.68)	(0.79)
CR4	0.050	0.015	0.759	−0.001	−0.057	0.752
	(0.78)	(0.28)	(1.08)	(−0.01)	(−1.23)	(1.03)
lnage	−0.394 ***	−0.116	−1.112 ***	−0.492 ***	−0.137	−1.252 ***
	(−4.32)	(−1.49)	(−4.13)	(−5.32)	(−1.49)	(−5.07)
_cons	1.330 ***	0.475	4.096 ***	1.662 ***	0.395	4.366 ***
	(2.96)	(1.14)	(4.19)	(3.80)	(0.84)	(4.31)
Observtations	373	261	112	373	261	112
F-Statistics	14.535	7.431	8.142	11.868	9.889	9.042
Prob>F	0.000	0.000	0.000	0.000	0.000	0.000
R-sq	0.285	0.148	0.584	0.236	0.167	0.641
adjusted R-sq	0.253	0.113	0.519	0.200	0.131	0.580

Note)

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in italics.

Table 6: Determinants of Tobin's q – Effect of Organizational Score (setting target levels) –

		(11-1)	(11-2)	(11-3)
		corfficient/t	corfficient/t	corfficient/t
Variable	**Description of Scores**			
Score2_D	Goals on multiple levels	-0.074		
[Score1_D]	[Not Goals on multiple levels]	(-0.70)		
Score3_D	Goals adjusted in each division	0.160 *		
		(1.67)		
Score4_D	Consistency maintained	-0.075		
		(-1.24)		
Score3_D			0.191 **	
[Score1_D/Score2_D]			(2.05)	
Score4_D			-0.070	
			(-1.12)	
Score4_D				-0.107 **
core1_D/Score2_D/Score3_D]				(-2.31)
pcaq_hum_z		0.022	0.047 *	0.080 ***
		(0.53)	(1.80)	(2.68)
lnrd_z		0.273 ***	0.265 ***	0.219 ***
		(5.37)	(4.15)	(4.89)
lnadv_z		0.105 **	0.133 ***	0.122 ***
		(2.16)	(2.65)	(3.16)
Observations		277	277	277
R-sq		0.451	0.458	0.410
Adjusted R-sq		0.417	0.427	0.379
F Statistics		30.855	32.304	31.854
Prob>F		0.000	0.000	0.000

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.

Table 7: Determinants of Tobin's q – Effect of Organizational Score (permeation of goals) –

		(12-1)	(12-2)	(12-3)
		corfficient/t	corfficient/t	corfficient/t
Variable	**Description of Variable**			
Score2_D	Employees know the goals	−0.267 ***		
[Score1_D]	[Employees don't know goals]	(−6.68)		
Score3_D	Eemployees understand the priority	−0.035		
		(−0.66)		
Score4_D	Employees accept the target levels	0.017		
		(0.33)		
Score3_D			0.063	
[Score1_D/Score2_D]			(1.24)	
Score4_D			0.117 **	
			(2.35)	
Score4_D				0.102 **
core1_D/Score2_D/Score3_D]				(2.15)
pcaq_hum_z		0.064 **	0.049 *	0.046
		(2.49)	(1.71)	(1.56)
lnrd_z		0.203 ***	0.229 ***	0.212 ***
		(3.90)	(4.10)	(5.39)
lnadv_z		0.156 ***	0.132 ***	0.123 ***
		(4.35)	(3.46)	(3.42)
Observations		277	277	277
R-sq		0.466	0.424	0.446
Adjusted R-sq		0.433	0.391	0.416
F Statistics		31.286	28.847	38.735
Prob>F		0.000	0.000	0.000

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.

Table 8: Determinants of Tobin's q

– Effect of Organizational Score (checking the degree to which goals are achieved) –

		(13-1)	(13-2)	(13-3)
		corfficient/t	corfficient/t	corfficient/t
Variable	**Description of Variable**			
Score3_D	Checking periodically	-1.373 ***		
[Score1_D]	[Not checking achieved]	(-4.93)		
Score4_D	Checking by employments	-1.371 ***		
		(-4.92)		
Score4_D			-0.042	(0.01)
[Score1_D/Score3_D]			(-0.85)	(0.13)
pcaq_hum_z		0.056 **	0.067 **	0.057 **
		(2.19)	(2.41)	(2.17)
lnrd_z		0.261 ***	0.220 ***	(0.26) ***
		(5.81)	(4.31)	(5.74)
lnadv_z		0.077 **	0.135 ***	(0.08) **
		(2.36)	(2.99)	(2.44)
Observations		277	277	270
R-sq		0.466	0.390	0.425
Adjusted R-sq		0.436	0.358	0.396
F Statistics		32.523	31.769	34.094
Prob>F		0.000	0.000	0.000

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.

Table 9: Determinants of Tobin's q
– Effect of Organizational Score (results of checks on performance) –

		(14-1)	(14-2)	(14-3)
		corfficient/t	corfficient/t	corfficient/t
Variable	**Description of Variable**			
Score2_D	Results are openly available within divisio	-0.039		
[Score1_D]	[Not openly available within division]	(-0.38)		
Score3_D	Openly avalable between relevent divisio	-0.064		
		(-1.09)		
Score4_D	Adjustments for different divisions	-0.071		
		(-0.71)		
Score3_D			-0.050	
[Score1_D/Score2_D]			(-0.98)	
Score4_D			-0.052	
			(-0.56)	
Score4_D				-0.069
core1_D/Score2_D/Score3_D]				(-1.09)
pcaq_hum_z		0.065 *	0.061 *	0.076 **
		(1.90)	(1.88)	(2.32)
lnrd_z		0.195 ***	0.207 ***	(0.21) ***
		(4.13)	(4.37)	(4.27)
lnadv_z		0.133 ***	0.130 ***	(0.14) ***
		(2.70)	(2.68)	(2.87)
Observations		277	277	277
R-sq		0.438	0.429	0.439
Adjusted R-sq		0.404	0.397	0.409
F Statistics		33.543	35.267	30.685
Prob>F		0.000	0.000	0.000

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.

Table 10: Determinants of Tobin's q

– Effect of Organizational Score (handling when goals have not been achieved) –

		(15-1)		(15-2)		(15-3)	
		corfficient/t		corfficient/t		corfficient/t	
Variable	**Description of Variable**						
Score2_D	Meeting consisting of manager	0.041					
[Score1_D]	[Not have meeting consisting of manage	(0.33)					
Score3_D	To revise spread throughout the division	−0.172	*				
		(−1.76)					
Score4_D	Known throughout relevant and other d	−0.164	*				
		(−1.82)					
Score3_D				−0.183	**		
[Score1_D/Score2_D]				(−2.04)			
Score4_D				−0.161	**		
				(−2.07)			
Score4_D						−0.141	
core1_D/Score2_D/Score3_D]						(−2.14)	
pcaq_hum_z		0.085	**	0.090	**	0.089	***
		(2.15)		(2.50)		(2.72)	
lnrd_z		0.203	***	0.191	***	(0.22)	***
		(4.06)		(3.95)		(4.45)	
lnadv_z		0.122	***	0.121	***	(0.11)	***
		(2.91)		(2.84)		(2.92)	
Observations		277		277		277	
R-sq		0.436		0.429		0.403	
Adjusted R-sq		0.401		0.396		0.372	
F Statistics		35.581		35.430		33.573	
Prob>F		0.000		0.000		0.000	

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.

Table 11: Determinants of Tobin's q
– Effect of Organizational Score (handling when goals have been achieved) –

		(16-1)	(16-2)	(16-3)
		corfficient/t	corfficient/t	corfficient/t
Variable	**Description of Variable**			
Score2_D	Higher goals set	-0.066		
[Score1_D]	[Not set higher goal]	(-0.68)		
Score3_D	Priod for setting higher goal	-0.081		
		(-1.48)		
Score4_D	Measures institutionalized	0.010		
		(0.11)		
Score3_D			-0.070	
[Score1_D/Score2_D]			(-1.29)	
Score4_D			0.051	
			(0.56)	
Score4_D				0.049
[Score1_D/Score2_D/Score3_D]				(0.57)
pcaq_hum_z		0.089 ***	0.091 ***	0.072 **
		(3.03)	(2.93)	(2.26)
lnrd_z		0.247 ***	0.232 ***	(0.21) ***
		(5.50)	(4.93)	(4.43)
lnadv_z		0.128 ***	0.129 ***	(0.13) ***
		(2.88)	(3.06)	(2.93)
Observations		277	277	277
R-sq		0.439	0.423	0.386
Adjusted R-sq		0.405	0.390	0.353
F Statistics		27.081	29.655	30.322
Prob>F		0.000	0.000	0.000

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.

Table 12: Determinants of Tobin's q
– Effect of Organizational Score – (Consultation with the people concerned)

		(17-1)	(17-2)	(17-3)	(17-4)
		corfficient/t	corfficient/t	corfficient/t	corfficient/t
Variable	**Description of Variable**				
Score2_D	40-59%	0.044	-0.298	-0.092	-2.078 *
[Score1_D]	[over60%]	(0.49)	(-0.17)	(-1.18)	(-1.76)
Score3_D	20-39%	-0.082	1.709	-0.245 ***	3.075
		(-0.85)	(1.25)	(-2.79)	(1.37)
Score4_D	under19%	0.043	-2.089 ***	-0.089	0.732
		(0.54)	(-3.20)	(-1.09)	(0.73)
Score2_D*lnage	40-59%*logarithm of firm age		0.080		0.478 *
			(0.19)		(1.67)
Score3_D*lnage	20-39%*logarithm of rirm age		-0.453		-0.855
			(-1.36)		(-1.54)
Score4_D*lnage	under19%*logarithm of rirm age		0.524 ***		-0.217
			(3.51)		(-0.92)
pcaq_hum_z		0.074 **	0.077 **	0.069 **	0.060 **
		(2.49)	(2.53)	(2.42)	(2.36)
lnrd_z		0.189 ***	0.207 ***	0.193 ***	0.127 ***
		(3.39)	(2.92)	(4.28)	(2.80)
lnadv_z		0.163 ***	0.208 ***	0.103 ***	0.107 ***
		(4.41)	(4.92)	(2.81)	(2.92)
Observations		271	269	271	269
R-sq		0.450	0.488	0.436	0.441
Adjusted R-sq		0.415	0.447	0.401	0.396
F Statistics		22.974	24.563	24.960	23.441
Prob>F		0.000	0.000	0.000	0.000

Note: Estimation method is GLS. Asterisks *, **, and *** indicate that the coefficient is significant with significance level of 10%, 5%, and 1%, respectively. Industry dummy and year dummy are included, but not reported. t-statistics is in parenthesis.