

# Budgeting Patterns in Japanese Companies and Their Relationship with Exploration and Exploitation: An Exploratory Study

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## **Abstract**

This study aims to empirically classify the budgeting patterns (configurations) of general Japanese companies and present an exploratory description of the relationship between the patterns and organizational learning in terms of exploration and exploitation. Drawing on Sponem and Lambert's (2016) typology of budgeting in French companies, this research conducted a similar analysis utilizing the results of a questionnaire survey administered to companies listed on the First Section of the Tokyo Stock Exchange. According to the results, the budgeting practices of general Japanese companies can be classified into three patterns: flexible, strategic, and poor. These patterns differ from the characteristics of "Japanese-style" budgeting noted in the literature. Flexible budgeting resembles a combination of the features characteristic of the yardstick budget and the loose budget patterns presented by Sponem and Lambert (2016). Strategic budgeting is similar to Sponem and Lambert's (2016) interactive budget and poor budgeting are similar to what they term indicative budget. Sponem and Lambert's (2016) coercive budget, which fundamentally prioritizes posterior control, was not perceivable in the results. Furthermore, the results of the analysis on the relationship with organizational learning in terms of exploration and exploitation showed that of the three patterns, strategic budgeting displayed a pronounced tendency toward exploration.

## **Keywords**

Budgeting patterns, Japanese-style budgeting, Management control systems, Exploration, Exploitation, Configurational approach

## **(1) Introduction**

Despite budgeting being at the core of management control systems (MCS), it has been constantly subjected to criticism (Hansen et al., 2003; Lee et al., 2010). Nevertheless, most companies engage in budgeting and are aware that it has some effect (Libby and Lindsay, 2010). Furthermore, budgeting is now different than it was in the past because there has been an increase in the research that describes the influence of budgeting on organizational learning and innovation (Horii, 2015). In particular, recent studies have shown that budgeting is related to exploration and exploitation, which are two important types of organizational learning required to secure a competitive advantage (Bedford, 2015; Fukuda, 2015; Yoshida et al., 2015a).

However, the effectiveness of budgeting practices varies given their different characteristics and the multiple patterns (configurations) of combining them (Hansen and Van der Stede, 2004; Sponem and Lambert, 2016). Moreover, it has been claimed that Japanese companies practice a unique “Japanese-style” of budgeting that differs from those of other countries (Lee et al., 2012).

Despite this, there is a lack of research that empirically examines the budgeting patterns of Japanese companies. Thus, such a classification would help to accurately describe the complex budgeting practices of such organizations. Furthermore, even though

budgeting is related to organizational learning in terms of exploration and exploitation, the degree of such learning may differ according to the budgeting pattern.

Given the above discussion, this study poses the following research questions (RQs).

RQ1: How can the budgeting practices of general Japanese companies be classified empirically?

RQ2: How are such patterns related to organizational learning in terms of exploration and exploitation?

This study conducts an exploratory investigation of the above questions and presents a discussion based on the findings from a questionnaire survey administered to companies listed in the First Section of the Tokyo Stock Exchange.

## **(2) Literature Review**

### **1. Budgeting patterns (configurations)**

In recent years, research interest in MCS as packages of mutually related control practices has been increasing (Malmi and Brown, 2008). However, the types of patterns for control practice linkages in general companies remain unclear. Bedford and Malmi (2015) adopted a configurational approach to empirically examine the relationship between accounting and other control practices and, furthermore, the association of such combinations with

context factors.<sup>1</sup> Conducting a cluster analysis using the characteristics of 22 control practices as input variables, they derived a taxonomy of five control configurations and described the relationships with the context factors of technology, environment, and strategy. Two of the control configurations—action and hybrid control—differed from those in the literature.

Demonstrating the same understanding, Sponem and Lambert (2016) shed light on budgeting configuration. They empirically examined the association of various budgeting characteristics and their relationship with the role of, and satisfaction with, budgeting. They classified budgeting patterns using a cluster analysis with 11 budgeting characteristics as input variables. The results highlighted five

budgeting patterns: yardstick, coercive, interactive, loose, and indicative. The following discussion summarizes the author's interpretation of these five characteristic patterns in terms of the degree of importance in prior, concurrent, and posterior control.<sup>2</sup> The reason for doing so is that many studies analyzing "Japanese-style" budgeting (e.g., Lee et al., 2012) use these categories.

First, the involvement of high-level executives in senior management is necessary because a yardstick budget formation requires managerial participation. Furthermore, it can be inferred that emphasis is placed on prior and concurrent control because revision is rare. Second, among the patterns that exhibit a strong linkage of the budget with performance evaluation and rewards, a coercive budget generally

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<sup>1</sup> Configuration refers to the specific arrangement of multiple parts, components, mechanisms, or attributes. The configurational approach refers to a strand of research that attempts to (1) understand MCS as a result of combinations of such diverse elements and (2) present the fundamental patterns. This approach can be considered consistent with an understanding of MCS as packages of mutually related control practices (Bedford and Malmi, 2015; Sponem and Lambert, 2016).

<sup>2</sup> Sponem and Lambert (2016) employs characteristics established in the literature, and they conceptualize the 11 characteristics on the basis of a focus

group for budgeting practices that comprises managerial accountants. They classify these characteristics into prior, concurrent, and posterior stages for control. In particular, the prior stage includes participation, type of negotiation, and difficulty of meeting budget targets. The concurrent stage consists of budget variance, budget revisions, and budget reforecasts. The posterior stage includes budget-based evaluations and rewards. Furthermore, involvement in budgeting, budget details, and degree of budget formalization are characteristics that span across the time scale.

places importance on posterior control, while an interactive one emphasizes prior and concurrent control through manager participation in budget formulation and senior management involvement in the budget process. However, target difficulty remains low and the degree of budgetary revision is average in the case of an interactive budget. Third, an interactive budget is similar to interactive control systems (ICS) (Simons, 1995) but differs owing to its strong linkage with rewards. Fourth, among the patterns demonstrating a weak link of the budget with performance evaluation and rewards, a loose budget warrants the participation of high-level management in the budget formulation, although the involvement of senior management in the budget process is low and the budget is subject to frequent revisions. As a result, emphasis is placed on prior control. Fifth, an indicative budget exhibits low levels of most budgeting characteristics; in other words, the budget is less likely to be considered for control purposes. Furthermore, while an interactive budget has the highest levels of satisfaction, an indicative one has low satisfaction levels.

While it is possible that the five patterns identified by Sponem and Lambert (2016) are characteristic of French companies, they may not

necessarily apply to budgeting in Japanese companies. As described above, it has been claimed that Japanese companies practice a unique “Japanese-style” of budgeting that differs from those of other countries (Lee et al., 2012).<sup>3</sup>

Furthermore, the relationship between the budgeting patterns and context factors remains unclear.

## 2. Japanese-style budgeting

This study will reference Lee et al. (2010, 2012) and recent field studies to present the characteristic aspects of this unique “Japanese-style” of budgeting in Japanese companies in the context of the three stages of control discussed earlier: prior, concurrent, and posterior.

There are three key arguments with regards to the prior control that is observed in the budgeting of Japanese Companies. First, participative budgeting in Japanese companies is said to possess a prior control function (Lee et al., 2012). Kishida’s (2013) survey, for instance, showed a high degree of participation by both departmental managers and their subordinates in budgeting. Second, budgetary slack is considered to be low in Japanese companies (Ueno, 1997). In their comparative study, Lee et al. (2012) mainly examined this aspect in four

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<sup>3</sup> “Japanese-style” management accounting implies management accounting originating in Japan or the practice of management accounting closely related to the organizational context of Japanese-

style management (Yoshida et al., 2012, pp.2-3). This study interprets the latter as “Japanese-style” budgeting and the analysis explores whether such practices exist.

Japanese companies and discussed the systems used by each company to meet challenging targets. Third, as in the case of non-Japanese companies, the criticism of a weak linkage between strategy and budgeting targets (Hansen et al., 2003) may be valid for Japanese companies too. While Shimizu (2013) noted the value of linking a balanced scorecard (BSC) with the budget, few Japanese companies have been reported as implementing BSCs (Yoshida et al., 2012).

Next, in terms of concurrent control, first, it is possible that budget revisions, which are also practiced in several non-Japanese companies, are more common in Japanese companies. For instance, 20% of companies in Yokota et al.'s (2013) survey responded that "The initial budget is fixed and is not revised at all during the period".<sup>4</sup> However, in Libby and Lindsay's (2010) survey on business units in North America, about half of the respondents reported that "Budgets are fixed. No changes made to them". Second, vertical interaction is common in the budget formulation of Japanese companies, implying that budgeting is utilized as an ICS (Kobayashi, 1990). Lee et al. (2012) also showed that interactions are common in concurrent control. Similarly, Kishida

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<sup>4</sup> However, approximately 70% of the companies reported "reviewing and revising, as required" on a regular or irregular basis; in other words, budget revisions were not necessarily carried out.

<sup>5</sup> As Fukuda (2015) noted, in analyses on the relationship between MCS and

(2013) indicated that budgeting is more often used as an ICS than as a diagnostic control system.

As for posterior control, a weak link has been noted between performance evaluation and financial rewards in the budgeting practices of traditional Japanese companies (Asada, 1997). However, this tendency may change owing to the rise of pay-for-performance systems (Lee et al., 2010).

Nevertheless, it is difficult to argue that all Japanese companies possess similar budgetary characteristics. Furthermore, relationships are possible among the various characteristics. Thus, there is significant value in classifying the budgeting practices of Japanese companies.

### 3. Relationship with exploration and exploitation

When classifying the budgeting patterns of Japanese companies, differences in organizational contexts that align with such patterns are highly likely. This study focuses on two types of organizational learning—exploration and exploitation—as organizational contexts.<sup>5</sup> Exploration and exploitation are concepts proposed by March (1991): the former refers to radical learning in

organizational learning, organizational learning is often understood as orientation toward organizational learning. This study adopts the same approach by focusing on organizational learning orientation.

the pursuit of new knowledge and the latter is incremental learning based on utilizing existing knowledge.

This study focuses on exploration and exploitation for two reasons. First, there is an increase in research that describes the influence of budgeting and MCS on organizational learning and innovation. Horii (2015), for example, conducted both qualitative and quantitative studies to show the positive effects of setting challenging goals and fixing budgetary targets on organizational learning and product innovation. Second, the concept of organizational ambidexterity—wherein an organization simultaneously pursues exploration and exploitation—has become a key focus in organizational learning and innovation research (O'Reilly and Tushman, 2013; Yoshida et al., 2015a).

In recent years, there has been a growth in research showing the relationship of budgeting<sup>6</sup> with exploration and exploitation. Fukuda (2015) showed that operational divisions with an orientation toward exploratory learning tend to have higher perceptions of achieving budgetary targets and that the use of funds for ICS contributes to successful organizational learning. Bedford (2015) utilized Simons' (1995) framework to show the positive effect on performance by using: (1) ICS in companies oriented toward exploratory innovation; (2) diagnostic control systems

in exploitative innovation-oriented companies; and (3) the simultaneous use of both in companies with tendencies toward organizational ambidexterity. Yoshida et al. (2015a) analyzed the influence of exploration and exploitation on four Japanese-type management accounting behaviors. The results indicated that the link between performance evaluation and reward increases with a rise in exploration orientation.

### **(3) Research Design**

#### **1. Analysis method**

The present analysis method, which is based on Bedford and Malmi (2015) and Sponem and Lambert (2016), is performed as follows. First, a cluster analysis was conducted to classify the budgeting patterns of Japanese companies. Each cluster was interpreted through an analysis of variance and multiple comparison procedures on the input variables. Similarly, an analysis of variance and multiple comparison procedures was performed to investigate the relationship of budgeting patterns with exploration and exploitation.

#### **2. Data collection**

The data were compiled using a questionnaire survey conducted by a research team, of which the author is a member. The purpose of the survey was to elucidate the current state of manage-

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<sup>6</sup> Bedford (2015) and Fukuda (2015) analyzed the relationship between MCS

and exploration and exploitation, with budgeting included as a part of the MCS.

ment accounting, including budgeting and performance management.<sup>7</sup> On January 14, 2014, the survey was sent to 1,752 companies listed on the First Section of the Tokyo Stock Exchange with a response deadline of January 31, 2014. The number of respondent organizations was 247 (response rate: 14.1%).<sup>8</sup>

This study uses the survey results for two reasons. First, while the survey was not designed to investigate the research questions of this study in particular, it contains many items related to the characteristics of budgeting and performance management. Second, to empirically classify the budgeting practices of general Japanese companies, it seems appropriate to use a survey that targets all companies listed on the First Section of the Tokyo Stock Exchange, including many major traditional companies, without industry-based restrictions.

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<sup>7</sup> As will be discussed later, the questionnaire items for “Challenging performance targets” and “Performance-reward link” are related to performance management characteristics, not budgeting characteristics. This is because the survey considers budgeting a core performance management technique (Yoshida et al., 2012, p.163).

<sup>8</sup> See Yoshida et al. (2015b) for details on the survey method. As for the non-response bias, first, the results for the goodness-of-fit test showed that respondents’ industry-type distribution conformed to the industry-type

The following analysis employs data from 234 companies. Responses from 13 companies are excluded owing to missing values for questionnaire items.

### 3. Measurement of variables

This study measured variables related to budgetary characteristics utilized in the classification of Japanese companies’ budgeting practices and those associated with exploration and exploitation. Because there is no established scale for both, the existing literature was consulted to the greatest extent possible.

First, an exploratory factor analysis was performed on the 12 items that were selected, based on Sponem and Lambert (2016), from the questionnaire items for budgeting characteristics. Two questionnaire items were not heavily loaded on any factor; however, they were still converted into the “No changes to

distribution of companies listed on the First Section of the Tokyo Stock Exchange (intermediate industry-type classification of the Securities Identification Code Committee). Second, in terms of the difference in organizational size (i.e., consolidated sales and consolidated number of employees) between respondents and non-respondents, only the manufacturing industry had a highly consolidated number of employees (Yoshida et al., 2015b, p.167). This implies the absence of any serious non-response bias.

budgetary targets” variable and the “Strategic budget formulation” variable and each was measured with a single questionnaire item. This is because they are related to important concepts that will be discussed in this section. A repeat analysis excluding these two items resulted in the extraction of three factors with eigenvalues of one or higher

(Appendix Table 1). Items with high loadings for each factor were named “Degree of budgetary sophistication”, “Interactive budgeting”, and “Assignment of specific targets to individuals”. In the operationalization of the variables, the average values of the items that were heavily loaded on each factor were used as scale scores.

**Table 1. Results of the exploratory factor analysis on performance-reward link  
(n = 234)**

| Questionnaire Item                                 | Mean | Std. Dev. | Performance-Reward Link |
|--|------|-----------|-------------------------|
| Business unit lower manager (subsection chief)     | 3.65 | 1.26      | <b>.95</b>              |
| Business unit middle manager (section chief level) | 4.21 | 1.19      | <b>.93</b>              |
| Business unit regular employee                     | 3.40 | 1.30      | <b>.83</b>              |
| Business unit director                             | 4.68 | 1.36      | <b>.66</b>              |

Note 1: A factor analysis was conducted using a principal factor method. Factor loadings of 0.4 and higher are rendered in bold.

Note 2: All questionnaire items in response to the question “To what degree is the financial reward of individuals with the following rank related to business performance?” were measured on a seven-point scale, ranging from 1 = “Not at all related” to 7 = “Very strongly related”.

Next, to operationalize the “Challenging performance targets” variable, one item was selected and measured from the questionnaire items related to performance management. Then, to grasp the posterior control aspect, an exploratory factor analysis was performed on the same four questionnaire items as were used in Yoshida et al. (2015a). As shown in Table

1, only one factor—“Performance-reward link”—with an eigenvalue of one or greater was extracted, and its scale score was calculated as the average values of the four relevant questionnaire items.

Appendix Table 2 presents the variables related to budgeting characteristics used in this analysis as a result of the above. These somewhat correspond to Spemem and Lambert’s

(2016) constructs.<sup>9</sup> The variables are associated with the characteristics of Japanese-style budgeting, as described above in terms of prior, concurrent, and posterior control. First, “Degree of budgetary sophistication”, “Challenging performance targets”, and “Strategic budget formulation” are related to participative budgeting, budgetary slack, and the link between strategy and budgetary targets, respectively. Second, “No changes to budgetary targets” and “Interactive budgeting” are related to budget revision and ICS. Third, “Allocation of specific targets to individuals” and “Performance-reward link” are related to posterior control characteristics. Since “Challenging performance targets”, “Strategic budget formulation”, and “No changes to budgetary targets” are each measured by a single questionnaire item, as noted above, their scales may be subject to reliability and validity issues.<sup>10</sup> Cronbach’s alpha values for the remaining items are 0.7 or greater, indicating no internal consistency problems.

<sup>9</sup> However, there are points of difference. For example, certain elements of the constructs relating to the degree of budgetary detail and the degree to which the budget is formalized are included in the “Degree of budgetary sophistication” and “Interactive budgeting”. Furthermore, budget revision and budget reforecast, as well as budget-based evaluation and rewards, are not differentiated at a conceptual level.

<sup>10</sup> In Sponem and Lambert (2016) too, budget revision was measured using a

Finally, an exploratory factor analysis based on He and Wong (2004) and using the same six questionnaire items as those in Yoshida et al. (2015a) was performed for exploration and exploitation. In Yoshida et al. (2015a), one questionnaire item did not load heavily on either factor. This item was excluded and the analysis was repeated. As shown in Appendix Table 3, two factors with eigenvalues of one or higher were extracted. As per the interpretation of the items with heavy factor loadings, the two factors were termed “Exploration” and “Exploitation”. According to Yoshida et al. (2015a, p.56), items loading heavily on the former indicate a tendency to emphasize innovativeness and new markets and prioritize new technology, products, and services. On the other hand, those loading heavily on the latter denote a tendency toward *kaizen* and employees achieving multiple targets simultaneously. In the operationalization of the variables, the average values of the items that heavily loaded on each factor were used as the scale scores.<sup>11</sup> Both have Cronbach’s alpha scores of 0.7 or

single questionnaire item and, thus, it is highly likely that the scale is subject to reliability or validity issues.

<sup>11</sup> While Yoshida et al. (2015a) focused on the manufacturing industry, their method to measure the relationship of “Performance-reward link” with “Exploration” and “Exploitation” is identical to that adopted in this study. This research still conducts an exploratory factor analysis because it expands the scope of analysis beyond the manufacturing industry to organizations

more, implying no internal consistency issues.

#### (4) Results

##### 1. Budgeting patterns of Japanese companies

To classify the budgeting patterns of Japanese companies, a hierarchical cluster analysis was conducted using as input variables the seven budgetary characteristics measured above (Ward's method): "Degree of budgetary sophistication", "Challenging performance targets", "Strategic budget formulation", "No changes to budgetary targets", "Interactive budgeting", "Allocation of specific targets to individuals", and "Performance-reward link". The input variables were standardized for the analysis. Then, on the basis of the results' dendrogram, three final clusters were defined.<sup>12</sup> Subsequently, a one-way analysis of variance and multiple comparison procedures (Tukey-Kramer method) were performed on the input variables. The results are presented in Appendix Table 4. The significance level for the statistical analyses was set at 5%.

Cluster one (C1) reported the lowest levels of "Challenging perfor-

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in the non-manufacturing industries. It is noteworthy that the analysis results are identical to those of Yoshida et al. (2015a).

<sup>12</sup> The pseudo F-statistic, which is the index used to determine the number of clusters in a hierarchical cluster analysis (Calinski and Harabasz, 1974), was highest at 39.50, with two clusters,

mance targets" and "No changes in budgetary targets", indicating that non-challenging and achievable performance targets are maintained and the initial budgetary targets are flexible. Thus, this cluster was named "Flexible budgeting". Furthermore, the values for the degree of budgetary sophistication and interactive budgeting were high, implying that prior and concurrent control is emphasized. Cluster two (C2) showed the highest values for all characteristics, except strategic budget formulation, implying that control is emphasized in all phases (pre, concurrent, and post). This cluster was termed "Strategic budgeting". In cluster three (C3), the values for most of the budgeting characteristics were lower than those of the first two clusters, suggesting that the budget is unlikely to be used for control purposes. This cluster was named "Poor budgeting". As Appendix Table 4 shows, 92 (39.3%) companies used flexible budgeting, 95 (40.6%) companies implemented strategic budgeting, and 47 (20.1%) companies reported poor budgeting. Furthermore, organizational size and industry type did not vary by cluster.<sup>13</sup>

followed by 34.94, with three clusters. Almost all the companies were in C1, rendering the cluster interpretation difficult. Thus, if two clusters were set, it was decided to include three clusters.

<sup>13</sup> The results of the one-way analysis of variance for average consolidated sales ( $F$ -value (2,231) = .169,  $p$ -value = .845)

## 2. Relationship with exploration and exploitation

To elucidate the relationship between the budgeting patterns of Japanese companies and exploration and exploitation, the former was set as the independent variable and the latter two were the dependent variables. In addition, a one-way analysis of variance and multiple comparison procedures (Tukey-Kramer method) were performed. Appendix Table 5 presents the results.

The analysis results showed a relationship between the budgeting patterns of Japanese companies and exploration and exploitation. The results of the multiple comparisons of the differences across all patterns indicated that poor budgeting had the lowest mean score for both exploration and exploitation and the differences with the other patterns were statistically significant. By contrast, strategic budgeting had the highest mean scores for exploration and exploitation, with a statistically significant difference in the mean scores of exploration when compared with flexible budgeting.

### (5) Discussion

This section presents the implications of the results in the context of the two research questions posed in

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and average consolidated employee numbers ( $F$ -value (2,231) = .255,  $p$ -value = .775) revealed no statistical difference in organizational size between the clusters. As for industry type, the results

section (1).

To determine if the budgetary practices of general Japanese companies can be empirically classified, let us compare the results of this study with the patterns identified in Sponem and Lambert (2016) and re-examine the concept of “Japanese-style” budgeting.

First, flexible budgeting is a pattern resembling a combination of aspects that are characteristic of the yardstick and loose budget patterns presented in Sponem and Lambert (2016). Both patterns involve a high degree of managerial participation in budget formulation. Flexible budgeting, in particular, has a high degree of budgeting sophistication. However, it differs from the yardstick budget, which may not be subject to frequent revisions. Flexible budgeting also differs from the loose budget pattern, which may not emphasize interactive budgeting in the concurrent stage. In addition, the findings indicate a relatively weak performance-reward link, resembling the “Japanese-style” budgeting patterns with prior and concurrent control, as noted in Lee et al. (2012). Furthermore, frequent budgetary revisions imply that the budgetary targets are not challenging.

Second, strategic budgeting is similar to Sponem and Lambert’s (2016)

of an independence test (chi-square test) ( $\chi^2$ -value (62) = 73.456,  $p$ -value = .151) indicated no significant relationship with the clusters.

interactive budget and poor budgeting is similar to what the authors term an indicative budget. Strategic budgeting prioritizes not only prior and concurrent control but also posterior control, while loose budgeting may not be used for control purposes. Both differ from the characteristics of “Japanese-style” budgeting, as has been noted in the literature. Furthermore, the characteristics of strategic budgeting, where targets are fixed and relatively difficult, differ from those of an interactive budget, suggesting that challenging targets can be maintained.<sup>14</sup>

Finally, Sponem and Lambert’s (2016) coercive budget, which fundamentally emphasizes posterior control, was not perceivable in the results. In fact, about 80% of the companies reported using flexible or strategic budgeting. Thus, it can be concluded that “Japanese-style” budgeting commonly prioritizes prior and concurrent control. Nevertheless, the two groups can be defined on the basis of the importance placed on “Allocation of specific targets to individuals” and “Performance-reward link” (i.e., whether posterior control is emphasized).

Next, a comparison of poor budgeting with the other budgeting patterns and of flexible budgeting with strategic budgeting will allow us to

investigate how these patterns are related to organizational learning in terms of exploration and exploitation.

First, the mean scores for exploration and exploitation were significantly lower for poor budgeting than the other patterns. Under any of these organizational learning orientations, emphases on prior and concurrent budgetary control by creating refined budgets and both regular and irregular discussions will be effective.

Second, a comparison of flexible and strategic budgeting revealed a significantly higher mean score for exploration for the latter pattern. Previous studies have implied that certain budgeting characteristics can effectively increase exploration, such as maintaining challenging targets (Horii, 2015), using the budget as an ICS (Bedford, 2015), and strengthening the performance-reward link (Yoshida et al., 2015). In contrast to studies highlighting the influence of individual characteristics (Bedford, 2015; Horii, 2015; Yoshida et al., 2015), this study showed a relationship between exploration and the strategic budgeting pattern, which combines various characteristics. In terms of an interactive budget, Sponem and Lambert (2016) argue that by placing importance on prior and concurrent control, budget-based performance evaluation and

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<sup>14</sup> However, as shown in Appendix Table 4, even though the scores are relatively higher than those for other patterns, it is notable that “Challenging performance

targets” and “No changes in budgetary targets” returned an average value of approximately four on a seven-point scale.

rewards as a form of posterior control can be appropriate. Thus, it can be said that Japanese companies using strategic budgeting maintain challenging targets, combine budgetary characteristics, and are oriented toward exploratory organizational learning.

## **(6) Conclusions**

Drawing on Sponem and Lambert's (2016) typology of budgeting in French companies, this study conducted a similar analysis using the results of a questionnaire survey administered to companies listed on the First Section of the Tokyo Stock Exchange. According to the results, the budgeting practices of general Japanese companies can be classified into three patterns: flexible, strategic, and poor budgeting. These patterns differ from the characteristics of "Japanese-style" budgeting noted in the literature. Furthermore, the results on the relationship with organizational learning in terms of exploration and exploitation showed that of the three patterns, strategic budgeting displayed a particular tendency toward exploration.

Despite its contributions, this study is not free from limitations.

First, despite referencing the extant literature, the budgeting characteristic variables used in the cluster analysis may be subject to reliability or validity issues. In particular, it is necessary to develop a scale with higher levels of reliability and validity for the constructs "Challenging performance

targets", "Strategic budget formulation", and "No changes in budgetary targets".

Second, given the differences in the abovementioned budgeting characteristic variables and other aspects, the method adopted in this study was not the same as that used in Sponem and Lambert (2016). Thus, it is possible that the analysis results are attributable to context differences between Japan and France or to the use of different analytical methods. Future research should consider conducting an international comparative study using the same methods.

Third, the relationship between the budgeting patterns of Japanese companies and organizational learning in terms of exploration and exploitation can be considered as an implied relationship. An in-depth analysis is, therefore, necessary to examine the relationships with other context factors such as technology, environment, and strategy.

Finally, to classify the budgeting patterns of general Japanese companies, an analysis targeting all companies listed on the First Section of the Tokyo Stock Exchange (including many traditional major companies) without industry-based restrictions was considered appropriate. As discussed in Section (4), no difference was found across organizational size and industry for the three patterns. However, it is possible that the results could differ if the analysis focused on small- and medium-sized enterprises or industries in rapidly changing environments.

Future studies might consider limiting their analyses to specific organizational scales or industries.

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### References

- Asada, Takayuki (1997). Gendai Kigyō no Senryaku Shikō to Yosan Kanri Shisutemu: Nichi-Bei Keiei Shisutemu Hikaku (*Strategy Orientation and Budgeting Systems in Contemporary Companies: A Comparison of Japanese and American Management Systems*). Tokyo: Dobunkan Shuppan.
- Bedford, David S. (2015). Management Control Systems across Different Modes of Innovation: Implications for Firm Performance. *Management Accounting Research*, 28, 12-30.
- Bedford, David S. and Teemu Malmi. (2015). Configurations of Control: An Exploratory Analysis. *Management Accounting Research*, 27, 2-26.
- Calinski, Tadeusz and Joachim Harabasz (1974). A Dendrite Method for Cluster Analysis. *Communications in Statistics*, 3(1), 1-27.
- Fukuda, Junji (2015). Soshiki Gakusyū to MCS tonō Kankei: Shitsumonhyō Chōsa no Bunseki Kekka yori (Organization Learning and MCS: A Mail Survey). *The Hosei Journal of Business*, 52(1), 43-57.
- Hansen, Stephan C., David T. Otley and Wim A. Van der Stede. (2003). Practice Developments in Budgeting: An Overview and Research Perspective. *Journal of Management Accounting Research*, 15, 95-116.
- Hansen, Stephan C. and Wim A. Van der Stede. (2004). Multiple Facets of Budgeting: An Exploratory Analysis. *Management Accounting Research*, 15(4), 415-439.
- He, Zi-Lin and Poh-Kam Wong. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15(4), 481-494.
- Horii, Satoshi (2015). Senryaku Keiei ni okeru Yosan Kanri (*Budgeting Management for Innovation and Strategic Change*). Tokyo: Chuokeizai-sha.
- Kishida, Takayuki (2013). Nihon Kigyō ni okeru Yosan Kanri Jitsumu (Practice of Budgetary Control in Japanese Firms: Reporting the Results of Questionnaire Survey). *The Bulletin of the Institute of Management, Komazawa University, Komazawa Business Review*, 44(1/2), 21-45.

- Kobayashi, Tetsuo (1990). Jigyoubusei Soshiki ni okeru Yosan Hensei Purosesu (Budget formulation process in divizionalized organizations). *Kaikei*, 42(2), 4-10.
- Libby, Theresa and R. Murray Lindsay. (2010). Beyond Budgeting or Budgeting Reconsidered? A Survey of North-American Budgeting Practice. *Management Accounting Research*, 21(1), 56-75.
- Lee, Ken, Satoko Matsugi, and Naoki Fukuda (2010). Budgeting. In Kato, Yutaka, Takami Matsuo, and Takehisa Kajiwara (Eds.) *Kanri Kaikei Kenkyu no Furontia (The Frontiers of Management Accounting Research)*, 109-152. Tokyo: Chuokeizai-sha.
- (2012). Yosan Surakku to Nihonteki Yosan Kanri (Budgetary Slack in Japanese Companies). *The Kyoto Gakuen University Review Faculty of Business*, 21(2), 31-53.
- Malmi, Teemu and David A. Brown. (2008). Management Control Systems as a Package: Opportunities, Challenges and Research Directions. *Management Accounting Research*, 19(4), 287-300.
- March, James G. (1991). Exploration and Exploitation in Organizational Learning, *Organization Science*, 2(1), 71-87.
- O'Reilly, Charles A. and Michael L. Tushman. (2013). Organizational Ambidexterity: Past, Present and Future, *Academy of Management Perspectives*, 27(4), 324-338.
- Shimizu, Takashi (2013). Senryaku Jikko no tameno Gyouseki Kanri: Kankyou Henka wo Norikiru "Yosokugata Keiei" no Susume (*Performance Management for Implementing Strategy: "Predictive Management" for Overcoming Environmental Changes*). Tokyo: Chuokeizai-sha.
- Simons, Robert. (1995). *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*. Boston, MA: Harvard Business School Press.
- Sponem, Samuel and Caroline Lambert. (2016). Exploring Differences in Budget Characteristics, Roles and Satisfaction: A Configurational Approach. *Management Accounting Research*, 30, 47-61.
- Ueno, Susumu (1997). Nichi-bei Kigyou no Yosan Kanri: Hikaku Bunkaronteki Apurouchi (*Budgeting in Japanese and American Companies: A Comparative Cultural Approach [Expanded Edition]*). Tokyo: Moriyamashoten.
- Yokota, Eri, Takeyoshi Senoo, Aako Takada and Shinya Kaneko (2013). Nihon Kigyou ni okeru Yosan Kanri no Jittai Chousa: Yosan Hensei ni kansuru Bunseki (Survey on the Current State of Budgeting in Japanese Companies: An Analysis of Budget Formulation). *Kigyou Kaikei*, 65(2), 78-83.
- Yoshida, Eisuke., Kazunori Fukushima and Takeyoshi Senoo (2012).

- Nihonteki Kanri Kaikei no Tankyu  
(*An Exploration of Japanese-Style  
Management Accounting*). Tokyo:  
Chuokeizai-sha.
- (2015a). Tansaku to Shinka ga Nihon  
Kigyuu no Kanri Kaikei Koudou ni  
Ataeru Eikyuu: Yobiteki Kenkyu  
(Influence of exploration and  
exploitation on organizational  
behavior in management accounting:  
A preparatory analysis in Japanese  
companies). *Melco Journal of  
Management Accounting Research*,  
8(1), 53-64.
- and Zhiming Xu (2015b). Waga Kuni  
Kanri Kaikei no Jittai Chousa (Dai  
Ikkai) – Seizougyou to Hiseizougyou  
tono Hikaku: Chousa Gaiyou to  
Genka Keisan Hen (Survey on the  
Current State of Japanese  
Management Accounting (No. 1) – A  
Comparison of Manufacturing and  
Non-manufacturing Industries:  
Survey Outline and Cost Accounting  
Volume). *Kigyuu Kaikei*, 67(1), 166-  
171.

**Appendix Table 1. Results of the exploratory factor analysis on budgeting characteristics (n = 234)**

| Questionnaire Item   | Mean | Std. Dev. | Degree of<br>Budgetary<br>Sophisticatio<br>n     | Interactive<br>Budgeting | Assignment of<br>Specific<br>Targets to<br>Individuals |
|--|------|-----------|--|--------------------------|--|
| Processes and procedures related to budget and operations are clear  | 5.31 | 1.19      | <b>.87</b>                                       | -.12                     | -.07   |
| Budgetary plans (e.g., sales, profit, and cost price [costs]) are set to a finely detailed level   | 5.34 | 1.13      | <b>.84</b>                                       | -.11                     | .00  |
| Middle managers are sufficiently involved in the process of setting budgetary targets  | 5.19 | 1.30      | <b>.64</b>                                       | .21                      | .04  |
| Middle managers are sufficiently involved in the process of setting business targets   | 5.19 | 1.28      | <b>.57</b>                                       | .10                      | -.07   |
| Business plans (e.g., delivery date, specifications, and quality [new product development and sales]) are set to a finely detailed level             | 4.38 | 1.25      | <b>.52</b>                                       | .23                      | .13  |
| When initial budgetary targets and actual results diverge, upper management of the business unit and middle managers engage in discussions           | 5.32 | 1.29      | -.12   | <b>1.05</b>              | -.00   |
| Upper management of the business unit receives regular reports on the budget implementation process and has regular discussions with middle managers | 5.34 | 1.29      | .03  | <b>.84</b>               | -.08   |
| Implementation plans are continuously revised to enable responses to situation changes   | 4.93 | 1.34      | .18  | <b>.46</b>               | .06  |
| Specific business targets are assigned to individuals  | 4.34 | 1.54      | -.01   | .00                      | <b>.97</b>   |
| Specific budgetary targets are assigned to individuals   | 3.84 | 1.70      | -.05   | -.05                     | <b>.70</b>   |
| Factor Correlation   |      |           | Degree of Budgetary<br>Sophistication            | 1                        |  |
|  |      |           | Interactive Budgeting                            | .57                      | 1  |
|  |      |           | Assignment of Specific<br>Targets to Individuals | .45                      | .33  |
|  |      |           |  |                          | 1  |

Note 1: A factor analysis was conducted using a principal factor method with promax rotation. Factor loadings of 0.4 and higher are rendered in bold.

Note 2: There was a marginal difference in the questionnaire for the manufacturing and non-manufacturing industries. The items specific to non-manufacturing industries are presented in square brackets.

**Appendix Table 2. Descriptive statistics for budgeting characteristic variables (n = 234)**

|   | No. of<br>Questionnaire<br>Items | Minimum | Maximum | Mean | Std. Dev. | Cronbach's $\alpha$ |
|---|----------------------------------|---------|---------|------|-----------|---------------------|
| Degree of budgetary sophistication            | 5                                | 2       | 7       | 5.08 | .97       | .85                 |
| Challenging performance targets               | 1                                | 1       | 7       | 3.55 | 1.39      | N/A                 |
| Strategic budget formulation                  | 1                                | 1       | 7       | 3.82 | 1.40      | N/A                 |
| No changes to budgetary targets               | 1                                | 1       | 7       | 3.51 | 1.80      | N/A                 |
| Interactive budgeting                         | 3                                | 2       | 7       | 5.20 | 1.13      | .83                 |
| Allocation of specific targets to individuals | 2                                | 1       | 7       | 4.09 | 1.47      | .74                 |
| Performance-reward link                       | 4                                | 1       | 7       | 3.98 | 1.12      | .90                 |

Note: For “Challenging performance targets” and “No changes to budgetary targets”, participants were asked to respond to the statements “Performance targets are set at a challenging level that cannot be easily achieved” and “Initial budgetary targets are not changed, regardless of changes in the situation”. Their responses were measured on a seven-point scale, ranging from 1 = “Not at all” to 7 = “Totally”. For “Strategic budget formulation”, respondents were asked “How is the budget formulated?” Their responses were measured on a seven-point scale, ranging from 1 = “The budget is formulated by adding an amount for new ventures to the previous year’s results” to 7 = “Resources are selectively allocated from a strategic viewpoint to achieve management strategy”.

**Appendix Table 3. Results of the exploratory factor analysis on exploration and exploitation (n = 234)**

| Questionnaire Item   | Mean         | Std. Dev. | Exploration | Exploitation |
|--|--------------|-----------|-------------|--------------|
| Employees are encouraged to act innovatively and not be risk averse  | 4.12         | 1.42      | <b>.81</b>  | .01          |
| Importance is placed on new market entry and breaking new ground   | 3.75         | 1.30      | <b>.61</b>  | -.05         |
| Development of new technologies and products [new products and services] is prioritized in resource allocation                                       | 4.11         | 1.34      | <b>.60</b>  | .06          |
| Kaizen activity is conducted on a daily basis/continuously   | 4.74         | 1.23      | .01         | <b>.79</b>   |
| Employees are independently oriented toward the simultaneous achievement of multiple targets, such as cost price [costs], quality, and functionality | 4.33         | 1.11      | -.01        | <b>.77</b>   |
| Factor Correlation   | Exploration  |           | 1           |              |
|  | Exploitation |           | .52         | 1            |
| Cronbach's $\alpha$  |              |           | .71         | .75          |

Note 1: A factor analysis was conducted using a principal factor method with promax rotation. Factor loadings of 0.4 and higher are rendered in bold.

Note 2: There was a marginal difference in the questionnaire items for manufacturing and non-manufacturing industries. The items specific to non-manufacturing industries are presented in square brackets.

Note 3: The questionnaire items were measured on a seven-point scale, ranging from 1 = "Not at all" to 7 = "Totally".

Note 4: "Importance placed on increasing satisfaction levels of existing customers rather than new customers" did not load heavily on either factor and, thus, was excluded from the analysis.

**Appendix Table 4. Results of the analysis on Japanese companies' budgeting patterns**

|  | C1                    | C2                     | C3                | ANOVA   |              | MCP<br>(Tukey-Kramer<br>Method) |
|--|-----------------------|------------------------|-------------------|---------|--------------|---------------------------------|
|  | Flexible<br>Budgeting | Strategic<br>Budgeting | Poor<br>Budgeting | F-Stat. | Significance |                                 |
| Degree of budgetary<br>sophistication            | 5.23                  | <b>5.54</b>            | <u>3.88</u>       | 79.66   | .000         | C2 > C1 > C3                    |
| Challenging performance<br>targets               | <u>3.20</u>           | <b>3.95</b>            | 3.45              | 7.39    | .001         | C2 > C1                         |
| Strategic budget<br>formulation                  | <b>4.09</b>           | 3.99                   | <u>2.96</u>       | 12.46   | .000         | C1, C2 > C3                     |
| No changes to budgetary<br>targets               | <u>2.87</u>           | <b>4.01</b>            | 3.77              | 10.79   | .000         | C2, C3 > C1                     |
| Interactive budgeting                            | 5.46                  | <b>5.62</b>            | <u>3.82</u>       | 70.59   | .000         | C2, C1 > C3                     |
| Allocation of specific<br>targets to individuals | 3.23                  | <b>5.35</b>            | <u>3.22</u>       | 116.32  | .000         | C2 > C1, C3                     |
| Performance-reward link                          | 3.91                  | <b>4.34</b>            | <u>3.41</u>       | 11.9    | .000         | C2 > C1 > C3                    |
| n  | 92                    | 95                     | 47                |         |              |                                 |

Note: The lowest values are underlined and the highest are rendered in bold.

**Appendix Table 5. Results of the analysis on relationship with exploration and exploitation  
(n = 234)**

|              | C1<br>Flexible<br>Budgeting | C2<br>Strategic<br>Budgeting | C3<br>Poor Budgeting | ANOVA           |              | MCP<br>(Tukey-<br>Kramer<br>Method) |
|--------------|-----------------------------|------------------------------|----------------------|-----------------|--------------|-------------------------------------|
|              |                             |                              |                      | <i>F</i> -Stat. | Significance |                                     |
| Exploration  | 3.95                        | <b>4.34</b>                  | <u>3.38</u>          | 13.77           | .000         | C2 > C1 ><br>C3                     |
| Exploitation | 4.56                        | <b>4.87</b>                  | <u>3.81</u>          | 18.20           | .000         | C2, C1 > C3                         |

Note: The lowest values are underlined and the highest are rendered in bold.

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