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Management Accounting Practices in the U.S. and Japan: Comparative Survey Findings and Research Implications*

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Abstract

In recent years, the success of Japanese firms in the global market has prompted efforts to understand the sources of their competitive advantage. It has been suggested that one such source is the Japanese firms' management accounting systems, and a number of articles have claimed that important differences do exist between U.S. and Japanese firms in this area. However, these claims have tended to be supported by anecdotal, rather than systematic, evidence. The objective of this article is to contribute further insights into similarities and differences between U.S. and Japanese firms' management accounting practices. Exhaustive searches of published surveys in the U.S. and Japanese literatures (much of which is in Japanese) provided the basis for U.S.–Japan comparisons on six aspects of management accounting practices. In turn, these comparisons were used for deriving implications for future research. Two major limitations of extant research and, thus, directions for future research are identified. First, future research needs to go beyond the simple use or non-use of techniques to investigate more detailed aspects of technique use. Second, since management accounting is only one component of a firm's total management system, attention also needs to be devoted to the organizational context, process, and goals of a firm's management accounting practices.

During the last decade, the success of Japanese manufacturing firms in the global economy has stimulated substantial interest in the sources of their competitive advantage. The Japanese manufacturing firms' management practices have been suggested to be one such source, and numerous books have described the nature of these practices and explained how they may be used by non-Japanese firms (e.g., Abegglen and Stalk [1985], Ouchi [1981], Pascale and Athos [1984], Pegels [1984]). More recently, increased attention has been directed at discovering differences between

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Japanese and non-Japanese manufacturing firms' management accounting systems. Focusing on the U.S., several prominent articles have claimed that important differences do exist between U.S. and Japanese firms. However, these claims tend to be supported by anecdotal, rather than systematic, evidence (e.g., Hariman [1990], Hiromoto [1988], Morgan and Weerakoon [1989]). Thus, while these articles have contributed to understanding differences in management accounting practice between Japan and the U.S., they leave unanswered the question of how prevalent these differences are and, hence, how much the latter may have contributed to the Japanese firms' competitive advantage.

This paper presents extant survey findings on similarities and differences between U.S. and Japanese firms' management accounting practices. In turn, these findings provide the basis for suggesting potentially fruitful directions for future research. The surveys were obtained from an exhaustive search of the academic and practitioner publications in both countries.[1] A noteworthy feature of the Japanese surveys is that many of them were published in Japanese, and are unlikely to have been readily accessible to most Western accounting researchers.

Comparative Survey Results

This section presents the comparative survey results in six tables. Each table covers a distinct topic area: cost accounting system design, short-term decision making, capital budgeting decisions, operational budgeting, operational control and management control. Appendix A lists the sources of specific survey results in these tables. Each study is assigned an unique alphabet to facilitate identification in the tables.

By and large, the survey samples were drawn from medium to large manufacturing companies from a variety of industries. However, because most of the surveys only sampled from one of the two countries, our comparisons are limited to descriptive, as opposed to inferential, analyses. Also, several important aspects of management accounting systems (identified later) were excluded because roughly comparable surveys between the two countries could not be found.

Cost Accounting System Design

Table 1 includes six aspects of the design of cost accounting systems. Several differences between the Japanese and U.S. firms are apparent. As shown in Panel A, compared to U.S. firms, Japanese ones use more

(or more expensive) direct materials and less (or less expensive) manufacturing overhead resources. There is about the same use of direct (variable) costing and full (absorption) costing in both countries, though the Japanese firms report more frequent use of process costing to accumulate product costs (Panel B).

In allocating manufacturing overhead, proportionally more U.S. firms distinguish between its fixed and variable components (Panel C). Both sets of firms have similar diversity of practice in the aggregation of overhead cost pools (Panel D). While firms in both countries report using a similar set of allocation bases for manufacturing overhead, Japanese firms tend to use a measure of direct labor content (hours or cost) slightly more frequently (Panel E). Despite this difference, it is important to note that firms in both countries have used volume, as opposed to events/transactions, allocation bases almost exclusively.

Short-term Decision Making

The only item common to the surveys of the two countries is the use of cost-volume-profit (CVP) analysis. As shown in Table 2, a higher percentage of U.S. firms do not use any form of CVP modeling. However, among the users, proportionally more Japanese firms use the basic linear deterministic model as opposed to the more sophisticated probabilistic or non-linear models.

Capital Budgeting Decisions

One of the biggest differences between Japanese and U.S. firms is in the use of capital budgeting decision models. Table 3 shows that discounted cash flow models such as net present value and internal rate of return are commonly used by U.S. firms. The typical approach among U.S. firms could be described as one of maximizing expected net present value or internal rate of return subject to a pay back constraint. In contrast, Japanese firms more frequently use pay back as the primary model. Another difference is that U.S. firms more frequently provide for some explicit consideration of risk in their capital budgeting decision models.

Operational Budgeting

Only two aspects of operational budgeting were common to the surveys from the two countries. In Japanese firms, the person responsible for operational budgeting tends to be the budget director whereas for U.S.

Table 1. *Cost Accounting System Design*

Panel A. *Manufacturing Cost Structure*

	Japan		U.S.	
Sources:	M	G	F	R
Direct Materials	62%	59%	53%	52%
Direct Labor	14%	12%	15%	15%
Overhead	24%	29%	32%	34%
Total	100%	100%	100%	101%

Panel B. *Product Costing Systems*

	Japan		U.S.	
Sources:	M	G	G	F
Full Cost	59%	67%	65%	75%
Direct Cost	41%	30%	31%	25%
Other	NI	3%	4%	NI

	Japan		U.S.	
Sources:	V	Y	R	F
Job-Order	23.4%	32.7%	28%	35%
Process	55.4%	61.5%	36%	24%
Operational	NI	NI	18%	NI
Multiple Systems	13.9%	NI	17%	NI
Other	3.0%	5.8%	1%	NI
No Response	4.3%	0.0%	0%	41%

Panel C. *Distinguish Between Fixed and Variable Overhead Costs*

	Japan	U.S.
Sources:	I	D
Yes	67.3%	82.1%
No	32.7%	17.9%

Panel D. *Degree of Aggregation in Overhead Rate Calculation*

	Japan	U.S.
Sources:	M	F
Total plant wide rate	18%	31%
Overhead rate for groups of work centers	68%	31%
Overhead rate for each work center	15%	38%
Overhead rate for each machine	3%	7%

Panel E. *Overhead Allocation Bases*

	Japan	U.S.	
Sources:	I	R	C
Direct Labor Costs	23.3%	58.7%	22.8%
Direct Labor Hours	58.3%	35.7%	18.3%
Volume of Production	36.8%	NI	6.9%
Direct Costs	17.8%	NI	NI
Machine Hours	21.5%	27.7%	5.7%
Direct Material Cost	NI	18.8%	NI
Weight	NI	11.6%	NI
Other/Multiple Bases	18.4%	8.9%	46.3%

Note: See Appendix A for the key to sources of survey results; NI indicates that the item was not included in the survey.

Table 2. *Short-term Decision Making*

	Japan	U.S.
Sources:	I	D
Use Deterministic Linear CVP	52.8%	22.2%
Use Probabilistic or Non-linear CVP	31.8%	32.4%
CVP Not used	15.8%	45.4%

Table 3. *Capital Budgeting Decisions*

Panel A. *Techniques Used to Analyze Capital Projects*

	Japan	U.S.		
Sources:	I	N	T	J
Net Present Value	14.5%	NI	NI	NI
Internal Rate of Return	15.7%	NI	NI	NI
NPV and/or IRR	NI	76%	82%	64%
Pay Back	83.6%	NI	NI	NI
Average Rate of Return	35.2%	NI	NI	NI
Other	5.7%	NI	NI	NI
Non-discounting Methods	NI	24%	18%	36%

Panel B. *Risk Adjustment*

	Japan	U.S.		
Sources:	I	N	T	J
Firms Explicitly Considering Risk	19%	48%	55%	93%

Table 4. *Operational Budgeting*

Panel A. *Persons In Charge of the Operational Budgeting System*

	Japan	U.S.
Sources:	S	D
Budget Director	54.4%	19.3%
Planning Director	25.4%	13.8%
Controller	14.8%	65.6%
Other	5.4%	1.4%

Panel B. *Frequency of Revision of the Operational Budget*

	Japan	U.S.
Sources:	L	D
Not Revised	NI	25.8%
Monthly	6%	15.7%
Quarterly	4%	24.4%
Semi-annually	59%	NI
Annually	29%	NI
As Needed	NI	21.2%
Other	NI	21.2%
No Response	1%	NI

firms the controller is more often responsible (Table 4). Most Japanese firms revise operational budgets at fixed intervals (typically semi-annually or annually). U.S. practices are more diverse. Many U.S. firms do not revise budgets and, for those that do, revision tends to occur either monthly, quarterly or as needed.

Operational Control

U.S. firms more often use standard costs while Japanese firms more frequently use actual costs (Table 5, Panel A). The primary purpose of using standard costs is similar in both countries, for cost control and pricing (Panel B). One apparent difference is that U.S. firms use standard costs less for budgeting but more for inventory valuation purposes. Panel C suggests that the tightness of standard costs may also differ. Japanese firms tend to set standards based on expected actual, normal standard, or estimated performance; all of these focus on the performance for some future length of time. In contrast, U.S. firms rely heavily on currently attainable and average past performance, both of which tend to emphasize the past. Another difference is that Japanese firms tend to revise standards more frequently (monthly, quarterly and semi-annually) than U.S. firms, most of which do so annually (Panel D). There is much less divergence in variance investigation approaches. Both U.S. and Japanese firms primarily use managerial judgment and the absolute or relative size of variances (Panel E).

Management Control

An important area of management control is the measures that are used for performance evaluation. Panels A and B of Table 6 indicate several potentially important differences between U.S. and Japanese practice in this area. Japanese firms tend to emphasize sales and return on sales while U.S. firms tend to stress return on investment and profit. About 80–85% of firms in both countries allocate at least some corporate costs to divisions when measuring divisional performance (Panel C). Finally, Japanese firms rely more on cost plus and actual full cost in setting transfer prices, while U.S. firms more frequently use negotiation and reference to market prices.

Table 5. *Operational Control*

Panel A. *Use of Standard Costing Systems*

	Japan		U.S.	
Sources:	M	G	G	F
Actual Cost	40%	54%	27%	27%
Standard Cost	60%	40%	70%	73%
Other	NI	6%	3%	NI

Panel B. *Purpose of Standard Costing*

	Japan	U.S.
Sources:	G	C
Budgeting	27%	4.32*
Cost Control	33%	2.26
Inventory Valuation	6%	3.04
Pricing	33%	3.04
Performance Evaluation	NI	2.75
Bookkeeping	NI	5.33

*: 1= most important and 6=least important

Panel C. *Target Levels of Standard Costs*

	Japan	U.S.	
Sources:	U	C	O
Ideal	5.3%	7.6%	4.4%
Currently Attainable	9.7%	NI	54.3%
Expected Actual	25.0%	50.3%	NI
Average Past Performance	NI	42.2%	41.4%
Normal Standard	34.1%	NI	NI
Estimated	20.9%	NI	NI
Other	0.9%	NI	NI

Panel D. *Frequency of Review of Standard Costs*

	Japan		U.S.		
Sources:	H	U	D	C	K
Monthly	4%	23%	NI	NI	NI
Quarterly	5%	3%	NI	NI	NI
Semi-annually	57%	42%	NI	NI	NI
Annually	25%	17%	91%	87%	68%
Every Few Years	NI	NI	NI	4%	NI
Continuously	NI	NI	5%	NI	31%
Whenever Materials or Technology Change	NI	NI	NI	9%	NI
When Variance Indicates a Problem	NI	NI	3%	NI	NI
No Response	9%	14%	NI	NI	NI

Panel E. *Variance Investigation Decision Models*

	Japan	U.S.
Sources:	H	K
Managerial Judgment	21%	72%
Absolute Size	40%	54%
Relative (%) Size	29%	43%
Bayesian Model	0%	0%
Control Charts	3%*	4%
Regression Analysis	1%	NI
Investigate All Variances	4%	NI
Other	1%	6%

Table 6. *Management Control*

Panel A. *Important Performance Criteria Used for Evaluating Divisional Managers*

	Japan	U.S.
Sources:	A	A
Sales	69%	19%
Sales Growth	28%	28%
Market Share	12%	19%
Asset Turnover	7%	13%
Return on Sales	30%	26%
ROI	7%	75%
Controllable Profit	28%	49%
Residual Income	20%	13%
Profit Minus Corporate Costs	44%	38%
Manufacturing Costs	28%	13%
Other	8%	17%

Panel B. *Financial Criteria Used to Evaluate Divisional Managers*

	Japan	U.S.
Sources:	P	Q
Return on Investment	12.5%	51.7%
Return on Sales	71.9%	NI
Residual Income	NI	28.8%
Profit Before Interest and Taxes	NI	45.4%
Profit	15.6%	
Cash Flow	NI	21.5%
Budgeted Performance	NI	49.3%
Other	NI	20.5%

Panel C. *Extent of Allocation of Corporate Indirect Costs*

	Japan	U.S.
Sources:	X	E
Full	NI	57%
Partial	NI	23%
Full or Partial	85%	NI
None	15%	20%

Panel D. *Transfer Pricing Methods*

	Japan	U.S.
Sources:	W	B
Market	11%	17%
Adjusted Market	25%	26%
Contribution Margin	NI	13%
Negotiated	7%	13%
Cost Plus	21%	13%
Actual Full Cost	17%	4%
Standard Full Cost	16%	13%
Standard Variable Cost	2%	NI

Research Implications

The extant survey results suggest that there are many similarities as well as differences between Japanese and U.S. management accounting practices. The latter deserve attention as areas where the Japanese firms' practices may have contributed to their competitive advantage. However, to obtain further insights into the nature and effects of U.S.–Japan differences in management accounting practice, efforts are needed to overcome two major limitations of the available comparative evidence.

The first limitation of the extant evidence is its limited scope and depth of coverage as well as its focus on techniques. For example, the area of short term decision making only has comparative evidence on the use of CVP models. Many other potentially important decisions, such as pricing and make-or-buy, are excluded. While the evidence on capital budgeting does cover the major discounting and non-discounting methods, it leaves unaddressed key elements of these methods, such as how the discount rate is determined. Similarly, many aspects of operational control (e.g., the types of variances computed) and management control (e.g., the levels of performance standards, the nature of reward structures) are unaddressed.

One reason for this lack of coverage is limited overlap among Japanese and U.S. surveys (see Appendix B). The other reason is the limited scope of extant studies. There is need for future studies which not only cover more management accounting practices in greater detail, but also sample simultaneously from both countries.

The second limitation of extant survey research is its lack of attention to context, process and goals. Management accounting is only one component of a firm's total management system, and its role cannot be fully understood without considering its organizational context, the process whereby it is applied and the goals that management seeks to achieve. Anecdotal evidence has been reported of differences between Japanese and U.S. firms in these areas (e.g., Abegglen and Stalk, 1985; Hiromoto, 1988; Pascale and Athos, 1984). More systematic studies are needed to assess the degree to which such differences do exist because differences between U.S. and Japanese firms' management accounting practices cannot be accounted for by unequal abilities to apply these techniques. Since the 1950s and 1960s, the Japanese firms have had constant and significant exposure to U.S. management accounting methods [Hiramatsu, 1987; Kato *et al.*, 1989; Monden and Sakurai, 1989].

For example, while survey evidence indicates that Japanese firms tend to use pay back and average rate of return in capital budgeting, this does not necessarily imply that they ignore the time value of money. Hodder [1986], based on interviews with managers in Japanese manufacturing firms, observes that typically an imputed interest charge is imposed on the investment. In addition, Sakurai [1989b] suggests three reasons why the Japanese firms' greater use of pay back is consistent with their investment strategies. (1) Japanese firms tend to emphasize building competitive advantage based on investments in technology. Such strategies require large investments, and it is necessary to recoup cash as fast as possible to reinvest in new technologies. (2) Japanese firms are increasingly competing on the basis of short product life cycles; this requires flexibility which is increased with short pay backs. (3) With innovative products in the global market it is not feasible to predict distant cash flows with meaningful accuracy.

Takatera and Yamamoto [1989] provide another rationale for the Japanese firms' preference of accrual accounting (e.g., pay back and average rate of return) over discounted cash flow (DCF) methods. Takatera and Yamamoto argue that Japanese business people have experienced an ever-changing environment and as a result, have developed a belief that the future is never a simple extension of the past. Thus, they believe that it is difficult to develop meaningful scenarios or strategies for the future, and that plans will be modified to adapt to changing environments. Since an important source of environmental change is competitors' actions, they focus on comparing their performance to that of their competitors ('looking sideways' rather than 'looking ahead'). To the extent that the Japanese managers do not base their plans on future scenarios, DCF methods have limited appeal. This is especially so because DCF information is not publicly disclosed. In contrast, accrual accounting measures are generally available and can be used to support contemporaneous cross-competitor analysis.

Another survey finding on capital budgeting was that U.S. firms more frequently explicitly account for risk in their models. But Hodder's [1986] interview study indicated that Japanese managers also attend to risk considerations. Hodder notes that Japanese managers often adjust the pay back criterion subjectively to incorporate the expected effects of risk. He also observes that Japanese firms commonly emphasize what he calls 'verbal scenario analysis' during bottom-up consensus decision making. The essence of this approach is to subject the assumptions on which an

investment proposal is based to a constructive and critical evaluation by a diverse set of managers who will have association with that investment. By limiting the incidence and magnitudes of erroneous assumptions, the risk of capital projects are correspondingly reduced.

It is also possible to attribute the different practices of U.S. and Japanese firms to different underlying goals. For example, the surveys summarized earlier have indicated that both U.S. and Japanese firms use direct labor almost exclusively for allocating manufacturing overhead. The U.S. firms have historically done this because it was considered to be 'good' accounting which provides accurate product cost estimates [Johnson and Kaplan, 1987]. In contrast, Japanese firms use this approach for motivational purposes. Hiromoto [1988] notes that many Japanese firms realize that in a high technology manufacturing environment, using direct labor to allocate manufacturing overhead distorts product costs. Yet they still employ this allocation base because of the incentives that it provides to increase labor efficiency and to implement technology that replaces labor.

Difference in goals also may account for differences between U.S. and Japanese firms' relative use of standard costs. It is suggested that U.S. firms emphasize the use of standards to control manufacturing costs after the fact, whereas Japanese firms stress the proactive use of management accounting to promote process and product innovation [Hiromoto, 1988; Makido, 1989; Sakurai, 1989a; Sakurai and Huang, 1989; Tanaka, 1989]. The latter's management accounting process begins by looking at the market for products that may not yet exist. From this market analysis, they determine a target cost (usually much lower than the currently attainable level) and invest heavily in pre-manufacturing activities to reduce costs to this level [Berliner and Brimson, 1988; Hiromoto, 1988; Makido, 1989]. Japanese firms believe that there are relatively small and slow opportunities for cost reduction in manufacturing vis-à-vis pre-manufacturing activities. Hence, instead of controlling manufacturing costs via cost variances, they focus on non-accounting methods, such as target costing, total quality control, value engineering and just in time inventory, to prevent the occurrence of a variance [Inoue, 1989; Makido, 1989].

It has also been suggested that Japanese firms often design and operate their management accounting systems contingent on their competitive strategy, market competition and organizational culture [McMillan, 1984; Hiromoto, 1988; Hariman, 1990). While many U.S. firms design their management control systems contingent on organizational context, such as decentralization and uncertainty (e.g., Merchant [1981]), there may not be as much contingent design for their cost accounting systems [Karmarkar, Lederer and Zimmerman, 1990].

Another potential cause of the U.S.–Japan difference is the different roles and career paths of management or cost accountants. Most accountants in U.S. firms are trained as accountants in universities, and their career paths typically have an accounting (as opposed to, e.g., general management) emphasis. The biggest variance among U.S. management or cost accountants may be the type (financial, cost, audit, tax), rather than amount, of accounting experience. In contrast, Japanese cost accountants—they generally do not use the term management accountants—tend to be non-accountants or generalists by university training and job experience [Hiramatsu, 1987; Yoshikawa, Innes and Mitchell, 1989]. The typical Japanese cost accountant is trained in a discipline other than accounting, then hired by a firm and put through a job rotation program that may last about ten to 15 years [Hiramatsu, 1987; Yoshikawa, Innes and Mitchell, 1989]. One aspect of this job rotation system is that many employees who will never be accountants will have spent time working in the accounting department. After rotating through several functional areas, some generalists are then targeted for additional in-house training in cost accounting to prepare them to spend the next several years in accounting. Subsequently, many of these cost accountants are transferred out of accounting and become general managers. As an example, at Matsushita, spending time as a cost accountant is considered part of the career path of a general manager [Pascale and Athos, 1981].

The difference between U.S. and Japanese cost accountants' training and career paths has important implications for the vested interest in, or 'ownership' of, the cost accounting system. In contrast to the U.S., cost accounting systems in Japanese firms tend to be owned by employees who have no proprietary interest in perpetuating either the accounting profession or accounting culture. Rather, these employees have a firm-wide perspective as generalists or non-accountants. Thus, they may be more inclined to design, operate, or accept changes in cost accounting systems targeted at promoting the interests of the firm rather than the accounting profession.

Summary

Extant survey findings have indicated many areas where U.S. and Japanese firms' management accounting practices differ, and many where they do not. The former deserve attention as potential contributors to the Japanese firms' competitive advantage. To shed further light on the nature and effects of U.S.–Japan differences, future studies need to increase both the breadth and depth of practices examined. Equally important, they should consider the goals, process, and context of these practices.

Note

1. The search of U.S. surveys covered the following 12 periodicals for the period since 1980: *Accounting and Business Research*; *CMA: The Management Accounting Magazine* (formerly *Cost and Management*); *CPA Journal*; *FE: The Magazine for Financial Executives* (formerly *Financial Executive*); *Financial Management*; *Harvard Business Review*; *Journal of Accounting, Auditing & Finance*; *Management Accounting*; *Managerial Planning*; *The Accounting Review*; *The Engineering Economist*; and *The Practical Accountant*. They were supplemented by a selective examination of other periodicals. The search of Japanese surveys was similarly extensive. In both countries, surveys were found which covered a much wider range of topics than those reported in this paper. Appendix B lists the surveys that were omitted from the comparison due to lack of correspondence between the U.S. and Japanese studies. Interested readers may also consult a collection of papers edited by Monden and Sakurai [1989].

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Appendix A

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Appendix B

Surveys Omitted Due to Lack of Correspondence Between Japanese and U.S. Studies

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