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**MEASUREMENT, EVALUATION AND
REWARD OF PROFIT CENTER MANAGERS:
A CROSS CULTURAL FIELD STUDY
WP 94-2**

**CEO PUBLICATION
G 95-15 (291)**

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February 1995

We are grateful for helpful comments from participants at the International Management Accounting Conference (hosted by the National University of Malaysia) and research workshop participants from the University of Miami, Florida Atlantic University, Florida International University and the University of Southern California, especially Tom Lin, Ted Mock, and Mike Shields.

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Measurement, Evaluation and Reward of Profit Center Managers:

A Cross-Cultural Field Study

Abstract

This study explored differences between U.S. and Taiwanese firms in measuring, evaluating and rewarding profit center managers, a subject which has not been addressed in the research literature. Four research propositions were developed based on a review of the existing literature on the effects of differences in national culture. These propositions were used to guide a field study in four firms, two in each country, matched in terms of existence of multiple profit centers, industry, and, to some extent, size. The choice of a field research method reflected the nascent state of theory development in the areas being studied. Thus possible statistical significance of the findings was sacrificed in favor of depth of situational understanding and opportunities to explore new theoretical possibilities.

The findings were generally inconsistent with the research propositions, thus suggesting at best a weak link between the previously identified dimensions of national culture and firms' measurement, evaluation and reward practices. The only finding consistent with expectations was that as compared to U.S. firms, Taiwanese firms make less use of long-term (multi-year) incentives. However, the study did reveal seven other variables that seem to be more important than national culture in explaining differences (and similarities) between the practices of the firms in the two countries. This list includes senior managers' education and experience, the company's stage of economic development, managers' beliefs about the workings of their nation's stock market, the company's type of business, the nation's labor force mobility, the company's pattern of growth, and the use of consultants. The paper explains the effects of each of these variables on the firms' management control-system practices and, consequently, provides a contribution to theory development in this area.

"Key" words or phrases:

national culture	Taiwan
performance measurement	field study
performance evaluations	
rewards	
profit centers	

Measurement, Evaluation and Reward of Profit Center Managers:

A Cross-Cultural Field Study

In the current era of rapidly accelerating globalization of business, managers are increasingly interested in knowing whether the control practices which are effective in one country can be used effectively in another (Child, 1981; Yang, 1984; Chang, 1985; Birnberg and Snodgrass, 1988; Bartlett and Ghoshal, 1989; Steers, 1989). Managers of multinational corporations must be concerned with whether the control practices they are using in their home country must be modified for use in other national settings, and if so, how. And managers of most firms can benefit from "global benchmarking"; they should consider the extent to which they can profitably import or emulate elements of the control systems that successful foreign competitors are using.

Importing or exporting control practices across cultures is fraught with risk, however, because there is accumulating evidence that people of different national origins have different preferences for, and reactions to, management controls (Vance et al., 1992; Chow et al., 1991; Hofstede, 1980, 1991; Birnberg and Snodgrass, 1988; Kreder and Zeller, 1988; Adler et al., 1986). Thus, controls which are effective when applied to one national group may be a source of competitive disadvantage when applied to another. Such disadvantages can arise by increasing the costs of attracting and retaining employees, by affecting the attributes of employees attracted to the firm, and/or by inducing employee behaviors that are contrary to the firm's interests.

This study was designed to explore cultural effects on one of the core sets of control variables--those related to measurements, evaluations, and rewards--and to address two

understudied areas in the control-related cultural-effects literature: the lack of focus on the profit center level of analysis and the failure to devote much attention to the important *Chinese* culture. The lack of attention paid to the profit center level of analysis in cultural studies is significant because the profit center form of organization dominates among business firms of even minimal size (Merchant, 1985; Vancil, 1979; Reece and Cool, 1978),¹ and proper motivation of these managers is important to firms' strategic executions in any culture. Profit center managers typically have significant authority over both manufacturing and marketing and must make trade-offs between these two critical business functions. These trade-offs are so important that Porter (1980) has suggested the profit center organization level is where a firm's competitive advantage is generally won or lost.

The relative lack of attention paid to the Chinese culture is also significant because of this culture's long history, world importance, and sharp contrasts with Western cultures (e.g., Hofstede, 1980, 1991; Chinese Cultural Connection, 1987).² Chinese people currently constitute more than one-quarter of the world's population (Bond, 1986), and because of the recent, rapid industrial growth of the People's Republic of China, many experts predict that the Chinese culture will be one of the dominant cultures on the world stage in the 21st century. It is also widely accepted that the Chinese culture and, hence, management practices are quite different from those in other countries. For example, Stan Shih, chairman of the Acer Group, Taiwan's largest computer company, recently said about management textbooks (Kehoe, 1993, p. 32), "The textbooks are all from a U.S. or Japanese point of view, but we have to do it our own way." However, little formal research evidence exists which describes the Chinese management "way."

In this study, the impact of the Chinese culture on profit center manager evaluations and incentives is studied in Taiwan, which is a relatively advanced, industrialized nation and significantly larger than other advanced-nation, Chinese-study possibilities, notably Hong Kong and Singapore.³ Many of the firms in the Chinese-dominated countries tend to be either small in size and family or government controlled. But Taiwan has 21 million people, the 13th-largest trading economy in the world, and a relatively actively-traded stock market, so it has a much larger population of privately-owned manufacturing firms of above minimal size that offers greater possibilities for matching with a U.S. sample. While each of the Chinese-study possibilities is somewhat different, for example in terms of political and legal structures, comparative economic advantages, and government industrial policies, they have some commonalities which can be labeled as Chinese culture or "Confucian ideology" (Bond, 1986). Taiwan is as representative of the Chinese culture as are the other countries.

Our exploration was guided at a general level by the extant literature on national culture differences. We used some formal theoretical propositions to guide our empirical investigation. However, because of the nascent state of the theory linking cultural variables with measurement, evaluation and control variables and the dearth of prior findings on the topic, we chose a small-sample-size field research design built around mostly open-ended, in-depth interviews. This method emphasizes depth of situational understanding and provides opportunities for following up on unexpected findings and revelations, thus enhancing opportunities for new theoretical developments and refinements. Necessarily, this choice sacrificed possible statistical significance of the findings. The sample consisted of

four manufacturing firms, two in each country, matched across countries in terms of existence of multiple profit centers, industry and, to some extent, size.

The remainder of this paper is organized as follows. In the next section, we discuss the national culture construct and the literature suggesting links between aspects of national culture and managers' control system choices. The second section presents four formal theoretical propositions about differences between Taiwanese and U.S. firms' approaches to profit center-level measurements, evaluations and rewards. The third section describes the research method. Then the findings are discussed in two parts, those related specifically to the tests of the research propositions and those related to theory extensions. The final section highlights the limitations of the study and makes suggestions for future research.

Making the National Culture Construct Operational

Many researchers have proposed definitions and taxonomies of national culture (e.g., Hofstede, 1980, 1991; Child, 1981; Brislin, 1983; Triandis, 1984; Schein, 1985; Adler et al., 1986). Of these, Hofstede's constructs are the most widely used in business and accounting research (e.g., Jaeger, 1983; Triandis, 1984; Ronen and Shenkar, 1985; Kreacic and Marsh, 1986; Soeters and Schreuder, 1988; Gudykunst and Ting-Toomey, 1988; Pratt and Beaulieu, 1992; Harrison, 1992, 1993; Pratt et al., 1993).

Hofstede (1980, p.25) defined national culture as "...the collective programming of the mind which distinguishes the members of one group or society from another..." Based on a survey of 116,000 workers from 72 countries, Hofstede (1980, 1983) "unbundled" national culture into four work-related cultural dimensions along which individuals in the countries differed. He also suggested (1980, 1983, 1984, 1991), though without providing

formal empirical evidence, specific relationships among these cultural dimensions and individuals' preferences for, and reactions to, alternate management controls.

Hofstede's four cultural dimensions are as follows:

Individualism vs. Collectivism. This dimension relates to individuals' self concept: "I" or "we". In a collective culture, the individual is motivated by group interests and emphasizes the maintenance of interpersonal harmony. In contrast, individuals from an individualistic culture tend to place their self-interests ahead of those of the group, and prefer interpersonal conflict resolution over conflict suppression. Hofstede suggested that in an employment setting, people who are high in individualism tend to prefer individual-oriented, rather than group-oriented, work arrangements, performance evaluations, and compensation.

Large vs. Small Power Distance. This dimension relates to the extent to which members of a society accept that power in institutions and organizations is distributed unequally. Hofstede suggested that people who are high in power distance tend to prefer, or at least are more willing to accept, greater centralization of decision making authority and less participation in decision making processes.

Strong vs. Weak Uncertainty Avoidance. This is the degree to which members of a society feel uncomfortable with uncertainty and ambiguity. Hofstede suggested that people high in uncertainty avoidance prefer to avoid, reduce, or deny uncertainty by relying on written or unwritten rules of behavior, structuring of activities, and standardization of procedures.

Masculinity vs. Femininity. This dimension relates to the preference for achievement, assertiveness and material success, as opposed to an emphasis on relationships, modesty and the quality of life. Hofstede suggested that people high in masculinity tend to prefer basing rewards on performance, whereas those high on femininity prefer allocations based on need.

Hofstede (1980, 1991) gathered data from large samples of workers from Taiwan and the United States and found that scores from workers in the two countries are different on all four cultural dimensions:

<u>Cultural Dimension</u>	<u>Taiwan</u>	<u>U.S.</u>	<u>Mean (Range) for 40 Countries</u>
Individualism	17	91	50 (12-91)
Power Distance	58	40	52 (11-94)
Uncertainty Avoidance	69	46	64 (8-112)
Masculinity	45	62	50 (5-95)

As compared to the Taiwanese culture, the U.S. culture is much more individualistic and masculine, but substantially lower in both power distance and uncertainty avoidance. Since Hofstede suggested links between each cultural dimension and preferences for management control features, some of which relate directly to performance evaluations and incentives, these data provide a basis for establishing research hypotheses to be tested and explored.

Hofstede's data are now over 20-years old and were obtained from only one firm (IBM), but numerous other studies have found support for Hofstede's taxonomy and findings. Regarding Hofstede's individualism dimension: much research has isolated the

self-interest motive as being the cornerstone of American worldview and management theories (e.g., Harris and Moran, 1987; Locke and Latham, 1984; Mitchell, 1974; Sampson, 1977; Spence, 1985; Triandis et al., 1988), while students of Chinese culture (of which Taiwan is substantially part) have repeatedly cited Chinese society's emphasis on both subjugating one's own interests to those of the collective and the avoidance of interpersonal conflict (e.g., Leung and Bond, 1984; Bond et al., 1982; Redding, 1980; Lin, 1977). Another oft-cited characteristic of Chinese culture is related to Hofstede's power distance dimension. Chinese culture has a high regard for hierarchy in which everyone has his/her assigned place, and in which individuals in superior positions are accorded a wide range of prerogatives and authority over those below them (Bond and Hwang, 1986; Hofheinz and Calder, 1982; King and Bond, 1985). This cultural outlook is reflected in the Five Cardinal Relationships central to Chinese tradition--ruler-subject, father-son, older brother-younger brother, husband-wife, and senior friend-junior friend--four of which are explicitly vertical (Redding and Wong, 1986).

More specifically related to the current research is the study by the Chinese Cultural Connection (1987). This study sought to address the concern that Hofstede's taxonomy may be culturally biased due to its being based on Western thinking. A list of 40 values (e.g., filial piety, humbleness, adaptability) was developed by a sequential process of analyzing the Chinese literature on work and culture and surveying respected researchers of Chinese culture. This list was used to collect preference data from university students from 23 countries (both Asian and Western) with prior work experience. Factor analysis of the data yielded a model with four dimensions, of which three were significantly correlated with three

of Hofstede's dimensions: individualism, power distance, and masculinity. Hence, one implication of these results is that three of the four dimensions of Hofstede's taxonomy, at least, can be reliably applied to a study comparing Taiwanese and U.S. management practices.

However, the Chinese Cultural Connection (1987) study found an additional dimension along which Taiwanese and U.S. national cultures differ, which was labelled Confucian Work Dynamism. This dimension was comprised of eight values: ordering relationships by status and observing this order, thrift, persistence, having a sense of shame, reciprocation of greetings, favors and gifts, personal steadiness and stability, protecting one's "face," and respect for tradition. U.S. subjects scored much lower on this dimension than did Taiwanese subjects (29 vs. 87). Subsequent research by Hofstede and Bond (1984) and Hofstede (1991) suggested that this cultural dimension is related to the length of individuals' time orientation, the extent to which they focus on long-term, as opposed to short-term, goals and concerns. (For lengthier and broader discussions of both the validity and limits of Hofstede's cultural taxonomy, see Harrison, 1992 and Chow et al., 1994.)

Theoretical Propositions

As the discussion in the preceding paragraphs suggests, the extant literature on national culture does not contain highly focused predictions or evidence about specific evaluation and compensation variables (e.g., the preferred mix of fixed salary and performance-dependent compensation) at profit center (or any other) levels in the firm. It provides the basis only for macro-level expectations. We have taken these data and predictions and used them to construct four theoretical propositions about how Taiwanese

and U.S. firms would differ in evaluating and rewarding profit center managers. Exploration of these propositions guided much of our interviewing, and we also use them to organize the discussion of findings:

Proposition 1: Taiwanese firms offer smaller individual performance-dependent monetary rewards than do U.S. firms.

Four cultural arguments support this proposition. First, higher collectivism, in and of itself, provides greater assurance that individual managers voluntarily take actions that further the interests of the firm, so performance-dependent rewards are not as necessary to reduce "agency costs." Second, individual performance-dependent rewards accentuate interpersonal differences and introduce interpersonal rivalry. Both of these conditions are probably more distasteful in the Taiwanese culture which is relatively high in collectivism. Third, the lower masculinity of the Taiwanese culture implies that managers place a lower value on monetary incentives. Fourth, performance-dependent, as opposed to fixed compensation increases the risk imposed on employees. This risk runs counter to the preferences of a relatively high uncertainty avoidance national culture, such as that of Taiwan.

Proposition 2: For the performance-dependent rewards they give, Taiwanese firms are more likely to base the rewards on group, rather than individual, performance than are U.S. firms.

Group rewards are those based on the performance of more than one individual. When group rewards are used at profit center organization levels, profit centers are grouped together for measurement purposes. These higher level aggregations are given any of a

variety of names, such as sectors, regions, or groups. At the extreme, the largest possible group is the entire corporation.

Two arguments support proposition two as is stated. First, group-based rewards seem to fit better with the higher collectivism in the Taiwanese culture. And second, group-based performance measures facilitate the sharing of risk, which fits the preferences of a culture high in uncertainty avoidance. On the other hand, cooperation and coordination seem to be increasingly important to firm success in the current competitive environment, and U.S. firms may have a greater need for group-based performance measures and rewards to overcome the higher U.S. individualism. Because of these countervailing forces, the observed U.S.-vs.-Taiwan difference may be opposite in direction to that stated in proposition two. Our statement of this proposition was aimed at giving focus to the exploration and discussion.

Proposition 3 As compared to U.S. firms, Taiwanese firms make less use of long-term incentives (i.e., those based on performance measured over periods longer than one year).

This proposition is supported by two cultural arguments. Most importantly, the higher Confucian Work Dynamism of the Taiwanese makes it less necessary to encourage a long term perspective. Second, the higher collectivism in Taiwan provides some assurance that the Taiwanese managers will not emphasize their own short-term gains at the expense of what is best for their firm's long-term survival and success.

Proposition 4 Relative to those in U.S. firms, performance evaluations of profit center managers in Taiwanese firms are more subjective.

This proposition is supported by two arguments. First, because power distance is higher (lower) in the Taiwanese (U.S.) culture, Taiwanese (U.S.) managers are more (less) likely to prefer or to accept greater discretionary power--subjectivity--being left in their superiors' hands. Thus we expect U.S. firms to make greater use of objective performance measures and preset performance standards, rather than highly subjective evaluations.

Second, the relatively high uncertainty avoidance in Taiwan suggests a greater preference for shielding managers from the risk caused by uncontrollable factors. At profit center organization levels, adjustments for the effects of uncontrollable factors usually involve the use of subjective judgments, rather than more objective methods such as flexible budgets or variance analyses (Merchant, 1989). Thus the high uncertainty avoidance should lead toward greater use of subjectivity in evaluations.

Research Method

We chose to explore these research propositions with a field study built around a series of intensive, open-ended interviews. This method choice provided several important advantages. One is that field research methods are versatile. They permit testing of the theoretical propositions stated above because just one valid counterexample can negate a proposition. Then if the propositions are not supported, or not supported fully, as often happens when knowledge is at an early stage of development, as it is here, field study research methods allow both for modification and refinement of the propositions and development of interesting new propositions not previously anticipated. The primary research method alternative, a questionnaire survey, might have been able to test the specific propositions described above, if adequate measures of the variables could be developed.

But it would not have allowed for detailed explorations of causality or reaction to surprises. Another advantage of field research methods is that they allow for detailed explorations of the important "how" and "why" questions (Yin, 1989, p. 19). Finally, the field research method is "the method of choice in studying sensitive topics" because it enhances researchers' abilities to build relationships based on trust with the individuals being studied (Lee, 1993, p. 119). This trust was critical in this study because almost all firms regard the issues of performance measures, evaluations and incentives, particularly at high management levels, as sensitive. It was particularly critical in the Taiwanese firms because the Taiwanese managers had no experience in dealing with researchers and were, understandably, quite cautious.

The field study was conducted in two U.S. and two Taiwanese firms. We chose to study companies headquartered in each of the two countries so that the cultural effects on management practices would be as strong and pure as possible. The primary sample selection alternative would have been to study one or more multinational corporations employing people both in the U.S. and Taiwan. But those corporations' employees' preferences are likely to be homogenized through their common experiences with the corporation's management practices or, more broadly, *corporate* culture. Focusing the study on domestic corporations and managers takes advantage of the fact that firms' domestic management practices evolve over time to adapt to relevant features of their home country's work-related cultures. A large number of studies have adopted this approach of studying domestic corporations and have documented systematic cross-national differences in many management control-related practices, including long range planning and strategic decision

making processes, organization structure, budgeting, performance evaluations, and cost accounting methods (e.g., Anyane-Ntow, 1987; Bailes and Assada, 1991; Birnberg and Snodgrass, 1988; Daley et al., 1985; Horovitz, 1980; Inzerilli and Laurent, 1983; Kreder and Zeller, 1988; Laurent, 1983; Lincoln et al., 1986; Lincoln and McBride, 1987; Pucik and Hatvany, 1983; Snodgrass and Grant, 1986). These studies have primarily focused on firms in Western countries and have been directed at other than profit center levels of organizations.

We selected our sample of firms so as to produce a limited form of a "natural experiment," a matched-firm comparison with the findings of a U.S.-based study by Merchant (1989). Most of the firms Merchant studied do not have Taiwanese counterparts, but we identified two Taiwan-based firms that provided reasonably close matches to two of Merchant's U.S.-based firms in terms of existence of multiple profit centers, industry, performance, and, to some extent, size. The arguments for controlling for these variables are as follows: (1) The study could not be conducted in firms without multiple profit centers. (2) Comparing firms in the same industry controls, to some extent, for differences in the economic and critical success factors which are often reflected directly in performance evaluation plans. (3) Each of the firms has been in existence and has grown many-fold over the last few decades. These long-term records of success are important because we wanted to study the practices of arguably effective managers. We did not want to have to engage in the difficult exercise of distinguishing effective from ineffective practices. In other words, we wanted to conduct an "anatomical," not "pathological" study. (4) Size is important because it is an indicator of both information asymmetry between top management and

profit centers and economies of scale in the design and monitoring of performance measurement, evaluation, and reward systems.

One of the matches we found is in the chemical industry. Both the U.S. firm (hereafter "US-Chem") and the Taiwanese firm ("T-Chem") are multinational companies that produce and sell a broad range of chemicals, and both have a number of non-chemical businesses. Both firms are large, with annual revenues in excess of US\$5 billion.

The other match is in the electronics industry. Both "US-Elec" and "T-Elec" manufacture and sell a broad range of electronic products and appliances for both consumer and commercial markets. While both firms are large, US-Elec is considerably larger than T-Elec: Annual revenues for US-Elec are slightly less than \$2 billion; for T-Elec they are nearly US\$500 million.⁴

We contacted both of the Taiwanese firms by approaching top management and secured permission for our study. We replicated Merchant's research method as closely as possible. In both firms, we began the study by interviewing corporate personnel, including high-level general, financial, and personnel managers. These interviews were used to gather information on the company's businesses, organizational structure, and management systems, including its performance measurement and incentive systems. During these interviews, we collected as many relevant documents as we could to corroborate the interview responses.

Then we interviewed a sample of managers at the lowest level of profit center (i.e., where the marketing and production functions first come together). In most cases, we also interviewed the profit center manager's immediate superior and some of his⁵ functional managers. These interviews with operating managers helped us understand how the

performance measurement, evaluation, and reward systems worked within profit center levels of the firms. In both firms, we returned with follow-up questions for some managers.

In total, we conducted interviews with 13 managers, including 3 profit center managers, in T-Chem and 10 managers, including 4 profit center managers, in T-Elec. The formal interviewing in these two firms took approximately 40 hours. To get a feel for the extent to which the findings in these two firms are broadly representative of Taiwanese firms' practices, we also conducted interviews on a more limited basis in another Taiwanese electronics firm which had multiple profit centers but was not considered as good a match with US-Elec as was T-Elec (9 managers for a total of 12 hours) and with consultants in two compensation consulting firms with offices in Taipei. Some interviews were conducted in English, but most were conducted at least partially in Chinese. When the interviews were conducted in Chinese, the questions and responses were translated instantaneously.

Findings

We found some significant similarities among all four firms' incentive plans. All the firms have an annual incentive compensation program offering bonuses to profit center managers. All provide rewards in cash.⁶ Managers in all four firms place primary importance on financial measures of performance, but they also track a wide range of other performance measures and consider them in performance evaluations. In all four companies, the most important performance standards are those negotiated during an annual planning process. As these variables are constant across these four firms, we conclude, tentatively, that none of them is greatly sensitive to cultural effects.

A. Tests of Propositions

Proposition 1 stated the expectation that Taiwanese firms offer smaller performance-dependent monetary rewards than do U.S. firms. This proposition is not supported by the data collected. Table 1, which summarizes the findings regarding all four propositions, shows that the annual bonuses the two Taiwanese firms offer are proportionally at least as large as those offered by the U.S. firms. T-Elec's maximum potential bonus is slightly larger than that of U.S.-Elec (71% vs. 67.5% of base salary). And T-Chem's target bonus (what the firm expects to give) is considerably larger than that of U.S.-Chem (100+%, as compared to 35%).

Insert Table 1 About Here

Proposition 2 stated the expectation that as compared to those given in U.S. firms, performance-dependent rewards given in Taiwanese firms are more likely to be based on group, rather than individual, performance. Our findings provide no evidence that culture has a significant effect on this measurement choice.

Merchant (1989) explained that profit center managers' bonus awards can be linked to group performance in any of four ways. First, some companies make awards to individuals which are totally dependent on the performance of the corporation or a smaller entity of which the profit center is a part (e.g., group, sector). A common example of this type of program is a "profit sharing" plan which allocates a share of the corporation's profits to employees in proportion to each employee's compensation. Of these four firms, only U.S.-Elec has a profit-sharing plan.

Second, some companies base rewards on stock performance which, obviously, reflects the performance of the corporation as a whole. Both U.S. firms have plans designed to get equity into the hands of management; the Taiwanese firms do not. U.S.-Chem and U.S.-Elec both have a *stock option plan* that annually awards to managers (including profit center managers) stock options with a 10-year horizon. Both U.S. corporations also have a *stock purchase plan* for all employees, but neither Taiwanese firm has such a plan. U.S.-Chem's plan allows the purchase of company stock with no commission charge and with payments made with money borrowed from the company at zero interest to be repaid over three years. U.S.-Elec's plan allows employees to contribute part of their compensation for purchase of company stock, and the corporation matches 25% of the contribution, up to a maximum of 1.5% of the employee's compensation.

Third, some companies base incentive payments partially on either the performance of a higher-level entity (e.g., sector, group) or on an assessment of the individual's contribution to a group effort (e.g., cooperation, teamwork). The two U.S. firms use this incentive plan feature; neither Taiwanese firm does. In U.S.-Elec, 25% of the bonus awards are assigned based on the performance of the immediately higher organization level (corporate or group). In U.S.-Chem, the blend is between profit center and corporate performance. Bonuses for managers of large profit centers are based 50% on profit center performance, measured mostly in financial terms, and 50% based on corporate profit-after-tax. (The importance weighting placed on corporate performance is lower for smaller profit centers.) In T-Chem, performance evaluations of profit center managers are done subjectively, but the corporate and division managers we talked to stated that only the

performance of the profit center is considered, with the highest weighting of importance consistently being placed on percent of profit targets attained. In T-Elec, performance targets are negotiated between the profit center manager and his immediate superior, and we found no example where any of these targets related to group performance.

Finally, some companies link individuals' bonus payments to group performance by funding a "bonus pool" based on corporate performance. All four firms studied use this feature. In T-Elec, annual corporate-wide performance directly affects the size of the bonus pool. In T-Chem, the variation occurs over a longer period of time, as one corporate manager explained:

[The total bonus amounts] are put in the budget at a fixed number and are not varied by the actual profit for the year. If the corporation earns a big profit, corporate managers take a portion of the bonus and put it in "the bank" to save for another year. If this year is no good and next year is no good, then maybe we will consider a lower bonus. It makes the situation more steady.

In U.S.-Chem, the size of the bonus pool is affected by corporate performance only if corporate or group profits deviate significantly from budget; the pool is funded at the planned amount if actual performance is in the range of 90-105% of budget. U.S.-Elec compares its return-on-equity (ROE) performance with that of the Scoreboard Companies reported in Business Week. No bonus pool is created unless the company ROE exceeds 25% of the Scoreboard companies, and the higher the ROE performance, the larger the pool.

These data suggest that national culture does not have a significant effect on the firms' desire to link group performance with incentive awards. All four firms have such a link. They use different methods (see Table 1), but the result appears approximately the

same--profit center managers in all four companies know that their individual awards are affected significantly by corporate performance.

Proposition 3 stated the expectation that as compared to U.S. firms, Taiwanese firms make less use of long-term (multiple-year) incentives. Our findings support this proposition. Neither Taiwanese firm's evaluation/reward system has a long term component, while both U.S. firms tie part of their profit center managers' rewards to long term performance.

US-Chem offers senior managers (including most profit center managers) cash payments based on the corporation's achievement of earnings-per-share and return-on-capital goals over three-year performance cycles. These awards are designed to be approximately one-half as lucrative as the short-term awards. It also has a long-term incentive plan based on operating group performance for employees in one non-core (non-chemical business) group that was recently acquired. But corporate managers have no plans to implement a similar long-term plan (based on multi-year operating-group performance) in other entities.

US-Elec has what it calls a "medium-term" incentive plan. It provides 40 top-level managers (including all profit center managers) awards based on corporate ROE as compared to that of comparable firms over a three-year period.⁷

Proposition 4 stated the expectation that relative to those in U.S. firms, performance evaluations of profit center managers in Taiwanese firms are more subjective. The findings suggest that national culture does not provide a dominant explanation of firms' use of subjectivity (see Table 1).

Of the four firms we studied, the most highly subjective evaluations were done in T-Chem. T-Chem profit center managers are not told the performance factors on which they are evaluated, although they developed beliefs, of course. The managers interviewed mentioned beliefs that they were evaluated based on some combination of a long list of factors they could control, including profit (to the extent it was controllable), units sold, product quality, efficiency, use of capacity, cost of maintenance, and leadership. The top T-Chem managers we interviewed, those who evaluated the profit center managers' performances, admitted they consider factors such as those listed above, but said they did not use them in any form of objective, weighted-average calculation. They also explained that they use their discretion to reward individual skill, individual effort, teamwork, position, and years on the job. The top-level managers agreed that while they tell the profit center managers their performance ratings, they do not describe to them the bases for the ratings.

The top-level managers in T-Chem *often* make adjustments for bonus purposes, nearly every year for every manager. They also made the adjustments in both directions; i.e., both to benefit or penalize the managers. For example, one profit center manager said, "Sometimes we earn a nice profit but the president doesn't give us credit for it. He says, 'It was not your impact.'"

The T-Chem profit center managers were not troubled by the use of high evaluation subjectivity and ambiguity however, and they expressed their belief that subjectivity in evaluating performance is typically Taiwanese. For example, one profit center manager in T-Chem said:

We don't ask [about the judgments causing our performance rating]. It is the Chinese culture to accept subjectivity. We consider more factors, including

management ability, years in the company, teamwork, cooperation, the situation, the person's potential for the future, and the creation of product or management potential for the future. And we evaluate performance subjectively because some factors are not easy to evaluate. It is not easy to put everything into a formula.

The findings from T-Chem are wholly consistent with proposition four.

The findings from T-Elec are almost exactly opposite, however. T-Elec's evaluation system is nearly totally objective; T-Elec's measured results map directly into its managers' monetary rewards. Senior managers at T-Elec *never* make adjustments for uncontrollable factors for purposes of assigning bonuses, although they acknowledge they will "consider situations" when deciding if low-performing managers should keep their jobs.

T-Elec uses two incentive plans. One, the Individual Evaluation System, is an management-by-objectives (MBO)-type system offering bonus potentials of up to 6-months salary (the recent average was 2.5-months salary) to managers at all organization levels. Annually, the managers and their immediate superiors negotiated performance measures and standards and their weighting. Profit center-level financial measures, such as revenue, profit before tax, expenses, and receivables, dominated the measures by which the profit center managers were evaluated.

T-Elec's other system, an Entity Evaluation System designed for only the top managers in the firm (including all profit center managers), offers bonuses of up to 2 1/2-months salary based their profit centers' performance in three areas:

1. Revenue (revenue attained, revenue growth over last year, new product revenue vs. total revenue);
2. Profit before tax (PBT attained, PBT growth over last year, Return on assets, PBT/person) as compared with budget;

3. Quality management (warranty expense, inspection failure rate, percent on-time deliveries, quality assurance).

Points are assigned for performance in each of the three areas, as is shown in Table 2. The performance areas are weighted to come to an overall point score for each profit center. The weightings are varied across profit centers, as is shown in Table 3, to reflect the priorities in their businesses. The weightings have remained fixed for the two years in which the system has operated, but managers said they might vary them over time as business conditions change. The overall point score is linked directly with incentive awards as follows:

1. If a manager achieves either his PBT goal or 60 points, he earns a bonus of 2-months salary.
2. If he earns both the PBT goal and 60 points, he earns another 1/2 month salary, plus an achievement medal.
3. If he fails to achieve 60 points, penalties are assessed:
 - a. For points from 50-59.99, deduct 1/2 month salary;
 - b. For < 50 points, deduct another 1/2 month salary, plus the manager is asked to resign.⁸

Insert Tables 2 and 3 About Here

In each of our interviews, we asked the manager what, if anything, he would like to change. Each manager had suggestions. Most common were complaints about transfer prices and expense allocations. But all of the T-Elec profit center managers we interviewed expressed satisfaction with the company's highly objective evaluation system. In the words of one:

Our system is scientific. I like the structure. It is reasonable, clear and open. We can evaluate ourselves. Our bosses do not evaluate us. Our old system was totally subjective. I didn't know how my performance was evaluated.

The U.S. firms' practices lie between the extremes defined by the Taiwanese firms. U.S.-Elec managers use significantly more subjectivity in performance evaluations than do those in U.S.-Chem. U.S.-Elec uses an MBO-type system requiring profit center managers and their immediate superiors to agree in writing on no more than five, "very meaningful," "stretch" objectives. End-of-year performance evaluations, however, are subjective because, as the company incentive plan documentation states, "Because conditions and environments change, objectives set at the beginning of the year may become obsolete, may be pre-empted by more important objectives, or may become impossible to accomplish." Thus, superiors are asked to rate their subordinates on a five point scale, from "Outstanding" to "Unacceptable." These ratings map directly into incentive awards. Individuals rated unacceptable earn no bonus. Those rated outstanding earn 50% more than those rated at the midpoint ("Meets Expectations").

U.S.-Chem uses an MBO-type system, similar to that of U.S.-Elec, built on "four or five succinct, measurable results areas," most of which are financial. At the beginning of the year, profit center managers and their immediate superiors negotiate the result areas, importance weightings, and targets. Normally, the quantitative results are linked directly with the bonus award, but the system allows for the possibility of subjective override, and managers described a few examples where subjectivity had been used. For example, one profit center manager explained:

Last year we had a lot of write-offs and didn't make any of our targets. But I asked for a partial payout for my management team. I thought we had performed very well in a difficult year, and I wanted some recognition of that. [My superior] asked me to nominate one or two people for special awards, but I thought it was more important to reward all of us, as a team. He gave us 50% [of what would have been earned had the targets been achieved]. It was a very pleasant surprise.

Both U.S. firms allow immediate superiors the possibility of subjective adjustments for the effects of uncontrollable factors. They are made much more often in U.S.-Elec. Both firms also allow for corporate-level adjustments to the size of the bonus pool, but these are made relatively rarely. In U.S.-Chem, the incentive plan explicitly allows the board of directors to adjust the bonus pool subjectively for non-recurring situations not built into the annual plan that had a material effect on corporate net income, taking into consideration:

- performance in light of competition
- the economy
- the quality of our performance
- the motivational impact of the award.

Over the years, the U.S.-Chem board has made a few of these bonus pool adjustments. Managers gave examples of acquisitions and a significant extinguishment of debt. U.S.-Elec's board of directors is given the power to adjust the size of the bonus pool up or down based on the achievement of strategic, non-financial corporate objectives, but it has not yet exercised this power.

Based on the findings in, particularly, the Taiwanese companies, we conclude that culture is not important in explaining either the use or effectiveness of the degree of subjectivity in profit center manager performance evaluations. While the T-Chem managers are comfortable with highly subjective evaluations, the T-Elec managers are comfortable with highly objective evaluations. These findings suggest either that highly subjective

performance evaluations are not essential in a Taiwanese context or that subjectivity is not an important decision variable in Taiwanese companies.

The four propositions discussed above were formulated to explore the basic question posed in this study: Do cultural differences between the U.S. and Taiwan affect firms' practices for measuring, evaluating, and rewarding profit center managers? Our findings support only one of the propositions--#3, that regarding the use of longer-term incentives. These findings suggest that the cultural dimensions we considered are *not* among the most significant variables affecting the use of these control-related management practices. Within-country variance is higher than across-country variance! This negative finding points to the need to understand what factors do determine these firms' practices.

B. Theory Development (Factors Most Affecting Firms' Measurement/Evaluation/Reward Practices)

While we were surprised that our data did not support more of our theoretical propositions, we were able to use our field explorations to understand better the factors that do shape these firms' measurement/evaluation/reward practices and the reasons for these factors' effects. We identified seven factors which, collectively, largely explain these firms' practices:

1. **Education and experience of senior managers.** The evaluators of profit center managers are invariably high-level, senior managers within the firm. It is the mind-set (culture) of these influential managers, not that of people in the nation as a whole, which affects styles of measurement, evaluation, and reward. In Taiwan, some aspects of senior

management culture seem to be changing, primarily because of greater recent contact with the Western world. Many Taiwanese managers are receiving some of their education in the West. Trading barriers have been broken down; the U.S. surpassed Japan as Taiwan's number-one trading partner in the first quarter of 1985. And many Taiwanese firms, including the two studied here, have become multinational.

This increased international contact appears to be changing some aspects of senior Taiwanese management culture, the way these top-level managers "think, feel and act" (Hofstede, 1991, p. 3) These cultural changes are, in turn, reflected in Taiwanese firms' management practices. For example, while performance-dependent monetary rewards in Taiwanese firms appear to be smaller, on average, than in U.S. firms, we learned from some Taiwanese compensation consultants that Taiwanese firms are rapidly increasing the performance-dependent component of employee compensation. One reported that:

There has been a noticeable increase in the number of companies introducing an element of variable payment, such as performance bonuses or profit sharing, in their compensation packages....

The old Chinese generation is more Japanese-style because they have been governed by the Japanese. Many had close working relationships with Japanese; they speak Japanese; and some were educated in Japan. They think that merely having a job is nice, and they don't think about the pay-for-performance issue. The new generation has traveled abroad more; they're more Westernized; they speak English, and they want pay related to performance.

A comment by a corporate manager at T-Chem supports this conclusion:

As long as [our chairman] stays, our system will stay the same. He is the founder; he knows everything very well. When the chairman changes, things might be different. One man's leadership can have a significant effect.

The second generation of Taiwanese managers, some of whom are now assuming top management positions, are less "Japanese-like." They are more likely to have been educated in the U.S. or Western Europe, and they speak English, but not Japanese. Some of these managers told us they believe that as compared with Japanese, Chinese people are more concerned about their individual self, not the group, and that when they are forced to work together, they are not that successful.

What does this generational change suggest for the future of Taiwanese management and, in particular, measurement/evaluation/reward practices? It may be that T-Elec, which now uses a relatively objective American model of performance evaluation and incentive system, is a precursor of the model larger Taiwanese firm of the future. These firms will emphasize management control by systems, rather than, as before, by a strong central figure.

2. Company's stage of economic development. Most Taiwanese firms are at an earlier stage of development than most U.S. firms. Taiwan has a smaller core of professional managers (per capita) than the U.S.; its firms' management styles have been dominated by centralization; and its firms' management practices and procedures are not as well developed.

Many Taiwanese firms (including the two studied here) were founded by smart managers with good vision who surrounded themselves with a group of loyal, hardworking people who did not have to have the full range of general management skills because the boss made virtually all the decisions. The subordinates' roles were primarily to implement the decisions. The founders used corporate-performance-based rewards to enhance the spirit of teamwork. They also expressed their appreciation for their employees by paying

them an extra 1- or 2-months salary at end of year (as is still traditional in Taiwan). As the businesses grew and, in many cases, the founders retired, some decentralization became imperative. (T-Chem's founder is still active as chairman of the company, and T-Elec's founder retired only a few years ago.) Decentralization creates greater demands for systematic, individual performance appraisals which, in turn, require different sets of management skills and procedures. The Taiwanese managers have less experience at dealing with such issues, but they are learning.

It is notable that the current T-Elec incentive system, which is highly objective, is relatively new.⁹ Prior to 1989, the company's performance evaluation was highly subjective. In 1989, it adopted its current, relatively objective system and squeezed most subjectivity out of its performance evaluations. According to one of the consultants with whom we talked, T-Elec was one of the first Taiwanese firms to adopt such a "U.S.-model" system. Like many Taiwanese firms, T-Elec did not adopt a formal evaluation/reward plan earlier because it did not feel the need for one: It was a relatively small, original-equipment-manufacturer (OEM)-type supplier with little contact with world markets. But now that it is much larger and emphasizing exports, it is facing more competition and its managers judged that it needed a more formal evaluation and reward system. The T-Elec managers still need training and experience with the system; for example, many do not yet know how to set personal targets well.

In Taiwanese companies, major changes such as those started in T-Elec may be relatively slow for cultural reasons because, as compared to their counterparts in the U.S., Chinese people tend to be less assertive. As the vice chairman of the other Taiwanese

electronics firm we studied said, "A good performer in Taiwan will not stand up and say, 'I am good. I deserve the spoils.'"

3. Senior manager beliefs about the stock market. We found that the vast majority of Taiwanese managers do not pay much attention to short-term stock performance. This is partly because the stock of many Taiwanese firms, even the large ones such as T-Chem, is held in large proportion by a family group. But it is also due to Taiwanese managers' general belief that the Taiwanese stock market is not greatly concerned with short-term financial reports. For example, the president of the other electronics firm we visited in Taiwan (not T-Elec) said:

The stock market does not respond to short-term earnings swings. It is not mature. People buy a stock based on the capital the firm has, not what it earns. Stockholders are not pressing to replace the president when the stock market is down.

So, unlike the U.S. firms, the managers of the Taiwanese firms express no desire to get more stock in the hands of operating managers, and they do not feel inclined to use stock-based reward instruments such as restricted stock or stock options. This U.S. vs. Taiwan difference seems to be more due to differences in the maturity of the capital markets than to differences in national culture.

4. Type of business (market focus). Until 5-8 years ago, most Taiwanese companies sold almost exclusively to OEMs. They produced good quality products but had a stable customer base, so they had little need for broad-based interaction with the outside world. Most managers, including profit center managers, could properly be buffered from the environment and held accountable primarily for production quality and costs, not for profit. T-Chem still operates in this way, while U.S.-Chem, for example, holds its profit center

managers accountable for profit. As many Taiwanese firms have moved into direct sales to consumers, distributors, and retailers, however, they have faced a greater need for sales efforts and market planning. These demands lead firms to make profit center managers bear at least some of the business risk.

5. Labor force mobility. The United States has a much more mobile managerial labor force than does Taiwan. For example, without exception, profit center managers in T-Chem are career employees with over 20-years experience with the company. This factor undoubtedly lessens the need for the Taiwanese firms to implement long-term incentive plans because, as Merchant (1989) concluded, the primary purpose of these plans is employee retention, not motivation.

6. Company growth patterns. As compared to Taiwanese firms, U.S. firms are more likely to grow by acquisition. When firms acquire other firms or pieces of other firms' operations, they are likely to have to use, at least for a period of time, a multitude of incentive plans, some designed to govern only the employees in the acquired companies. US-Chem is an example of a firm that has multiple plans in use. (Only the plan used in the chemical part of the business was described in this paper.) But T-Chem, which is nearly as large as US-Chem, has a uniform set of incentive plans for all managers.

7. Use of consultants. The use of consultants, particularly compensation consultants, is another factor that has a significant effect on firms' measurement, evaluation, and reward practices. Compensation consultants have been active in Taiwan only in the last few years, and U.S.-based firms (e.g., Hay, Wyatt) totally dominate this industry in Taiwan. Hay came first to Taiwan, but only in 1988; Wyatt came in 1989. No local firms yet exist. The

consulting firms largely employ Taiwanese nationals who tailor their solutions to the needs of the firms in Taiwan. But the consultants receive considerable training in the U.S. so it is no surprise that they tend to introduce U.S.-type measurement, evaluation, and reward models to their clients. It is not coincidental that T-Elec's system is so U.S.-like. T-Elec's managers received considerable guidance in the design and implementation of their system from a U.S.-based consulting firm.

We believe that a combination of these seven factors largely explain differences and similarities between the measurement, evaluation and reward practices of the U.S. and Taiwanese firms we studied. At the extreme, one could argue that all of these factors are elements of or reflective of national culture in some form. Even with this view, however, a need still exists for specification of how these factors, perhaps together with other dimensions and manifestations of national culture, affect the design of performance evaluation and reward systems. For our part, we were unable to discern significant correlations between these factors and the cultural dimensions we used to guide our study. Including these other factors in cross-cultural theories and studies should enhance our understanding of management practices.

We do not mean to suggest that cultural factors, of the types identified by Hofstede and others, have no influence, as it is possible, even probable, that culture is associated with some variables other than those explicitly mentioned in the research propositions. For example, T-Elec's incentive plan uses a penalty structure to take money away from low-performing managers. Penalty structures such as this may not be effective in the U.S. as

Latham and Saari (1982) found, in a U.S.-based study of unionized truck drivers, that a punitive approach to the use of incentives undermined commitment to goals. Perhaps a tolerance for motivation through penalties, rather than rewards, is related to specific dimensions of national culture.

Limitations and Suggestions for Future Research

Several limitations in our study need to be recognized. Most people will point first to our small sample size and, indeed, small sample sizes are a limitation inherent in field research. Small sample sizes reduce the external validity of our findings; that is, confidence that the practices of the firms studied are representative of general practice within each country. Also, a small sample size provides little statistical power. Thus, one fruitful direction for future research would be to replicate this study with another, larger sample. It must be remembered, however, that field studies, like experiments, rely on *analytical* generalization, not *statistical* generalization as is used in survey and large, archival database research (Yin, 1989, p. 43-45). That is, field studies are properly used to build theories about the specific settings studied. The external validity of these theories must be tested through replications of the findings in other settings where the theory has specified that the same results should occur, just as scientists generalize from one experiment to another.

A second limitation is our study of multinational firms. This sample choice, which unfortunately is almost inevitable in a study of firms comprised of multiple profit centers, has the potential for diluting possible cultural effects. In an era of growing international competition, multinational firms are likely to have faced forces leading to homogenization of management practices. Sharper culture-dependent differences in practices might have

been observed if we had been able to study firms operating only domestically, and this is a potentially fruitful possibility for future research. This design choice, however, would cause the study to focus on small firms or those operating in unique industries (e.g., utilities).

Third, we faced some data accessibility constraints, especially within the Taiwanese firms. We were the first academics allowed into these firms to conduct such a study, and the firms' managers were understandably quite cautious about the process. This caution limited and changed what we could do. For example, many of the interviews were conducted in group, rather than individual, settings, limiting our opportunities to verify ("triangulate") the responses within the profit centers. And the Taiwanese managers were not as free with data as are managers in some U.S. firms. For example, we requested but were unable to obtain historical distributions of performance ratings and rewards for either Taiwanese firm's set of profit center managers.

A factor which complicated this study, and which should be taken into account in future studies, is the intermingling of cultures. That is, it is not clear that Taiwanese firms' practices reflect a predominantly Taiwanese-like culture. As was discussed above, many of them may be due to a Japanese-like culture present at top-management levels within the firms. In retrospect, it would have been preferable not to rely exclusively on Hofstede's culture findings which were not predominantly gathered from top-level managers. In the Taiwanese, and perhaps even the U.S. firms, Hofstede's findings may not apply specifically to the managers making decisions regarding the firms' measurement, evaluation and reward practices. We recommend that researchers conducting further research in this area gather cultural indicators specifically about the key decision makers. These data could include use

of the culture-dimension questionnaires or other indicators, such as managers' educational backgrounds and language skills.

The limitations of our study notwithstanding, we believe we have made a substantive research contribution. We have provided some tests of some predicted culture-based differences between Taiwanese and U.S. firms' approaches to evaluating/rewarding profit center managers and shown the limitations of existing theory. But more importantly, we have provided some means for enriching the state-of-the-art theory explaining why management practices vary between U.S. and Taiwanese firms. We have identified areas where cultural explanations seem not to be particularly important and suggested other variables that may be more important in explaining firms' evaluation and reward practices. This knowledge should be important in influencing the design of future studies on this topic. Researchers who want to explain a significant proportion of the variance in observed practice will want to measure, or otherwise control for, variables such as senior managers' education and experience, companies' stages of economic development, senior managers' beliefs about stock markets, companies' market foci, companies' growth patterns, and uses of consultants. Our descriptions and findings can be used either to guide further field research or the development of a structured survey instrument that could be used to collect data from a large cross-section of firms.

NOTES

1. We are not aware of any comparable surveys of Chinese management practices, but our observations suggest that the situational forces causing managers to decentralize and use multiple profit centers are universal.
2. Anthropologists have also paid relatively little attention to the Chinese culture. For example, the editor of one book in the area (Bond, 1986, p. viii) wrote, "At present, there is no book available that summarizes and integrates the empirical data on the psychological functioning of Chinese people. This is a lamentable state of affairs."
3. While the People's Republic of China has experienced a dramatic increase in the number of private enterprises in recent years, many of these enterprises are small-scale, and others are derivatives of public enterprises. Further, the relative youth of these enterprises suggests that their management control systems are likely to be still evolving. These factors limit the feasibility of a matched-pair study against a sample of mature, large-scale, U.S. companies.
4. In Merchant's study, US-Chem was called "Corporation E--Diversified Chemicals." US-Elec was called "Corporation M--Consumer Durables."
5. In all four companies, all the profit center managers studied were male.
6. At the time of Merchant's (1989) study, U.S.-Chem provided its bonus awards 2/3 in cash and 1/3 in stock, but the company has subsequently changed its program to offer the bonuses solely in cash.
7. US-Elec also uses a stock option plan which gives a small number of options to approximately 25 employees, including all profit center managers. Managers in the company do not believe that this plan provides any useful long-term incentive because the options are not restricted in any way, and many participants exercise their options as soon as the company's stock price makes its first significant upward move.
8. This happened twice in 1991.
9. T-Chem's incentive plan has been in place for many years. The company developed its plan relatively early because it has long had a significant international presence, including in the U.S., and it adopted some international practices. Its incentive plan is used throughout the world.

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Table 1
Findings on the Four Propositions

		U.S.-Chem	T-Chem	U.S.-Elec	T-Elec
Prop. 1 (not supported)	Size of annual bonus awards (% of base salary):				
	- target	35%	100+%	25%	none specified
	- maximum possible	unlimited	unlimited	67.5%	71%
Prop. 2 (not supported)	Profit sharing plan?	no	no	yes	no
	Stock plans:				
	-stock option plan?	yes	no	yes	no
	-stock purchase plan?	yes	no	yes	no
	Incentive plan based on group performance?	yes	no	yes	no
	Bonus pool based on corporate performance?	yes	yes	yes	yes
Prop. 3 (supported)	Use of long-term incentives?	yes	no	yes	no
Prop. 4 (not supported)	Use subjectivity in performance evaluations?	yes, occasional high-level override	yes, heavily	yes, incorporated in overall rating on 5-point scale	no

Table 2
Translation of Performance into Points in T-Elec's Entity Measurement System

Points	Revenue			Profit Before Tax			Quality Management ¹	
	% budg.	% growth	% new products	% budg.	% growth	profit per person (% budget)		ROA (%)
100	130	30	50	160	60	160	160	
95	125	25	45	150	50	150	150	
90	120	20	40	140	40	140	140	
85	115	15	35	130	30	130	130	
80	110	10	30	120	20	120	120	
75	105	5	25	110	10	110	110	
70	100	0	20	100	0	100	100	
65	95	-5	17.5	90	-10	90	90	
60	90	-10	15	80	-20	80	80	
55	85	-15	12.5	70	-30	70	70	
50	80	-20	10	60	-40	60	60	
45	75	-25	7.5	50	-50	50	50	
40	70	-30	5	40	-60	40	40	

Tailored to the profit center.

Table 3
Weightings of Performance Measures in T-Elec's Entity Measurement System

Division	A	B	C	D
Revenue	.3	.5	.5	.4
Profit before tax	.3	.5	.3	.4
Return on assets	.2		.2	.2
Quality management	.2			

