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CULTURAL DIFFERENCES AND SHAREHOLDER VALUE IN RELATED MERGERS: LINKING EQUITY AND HUMAN CAPITAL

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Merger literature suggests that the relationship between shareholder gains and the relatedness of merging firms is contingent upon the compatibility of the two firms' top management cultures. This hypothesis is tested by surveying the perceptions of cultural differences of top management teams of recently acquired firms, and then relating these perceptions to related stock market gains to the buying firms. The findings suggest a strong inverse relationship between perceptions of cultural differences and shareholder gains, after controlling for perceptions of the buying firm's tolerance for multiculturalism and the relative size of the merging firms.

INTRODUCTION

Two independent streams of management research have studied mergers and acquisitions (henceforth, mergers). One stream examined the cross-sectional relationship between firm level measures of financial performance and the strategic fit of the buying and selling firms. Interestingly, these studies hypothesized, but failed to find, a consistent relationship between performance gains and the degree to which the merging firms share similar technologies (Singh and Montgomery, 1988; Shelton, 1988; Lubatkin, 1987; Chatterjee, 1986). It is striking, however,

that these studies found large variance in performance among acquiring firms engaged in mergers of similar strategic fit, but have given little empirical attention to explaining this large within-group variance.

A second stream of research examined the cultural fit of the buying and selling firms and its impact on the success of the combination. Most of this research remains in the theory building stage (Nahavandi and Malekzadeh, 1988; Jemison and Sitkin, 1986; Buono, Bowditch, and Lewis, 1985). The few studies that tested for a relationship between cultural fit and merger performance selected a fragmented set of criterion variables such as employee motivation and attitudes, and focused on participants in only one merger at a time (Graves, 1981; Levinson, 1970; Costello, Kubis, and Schaeffer, 1963). To date,

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these studies have not examined the effects of cultural fit on the corporate financial performance of mergers, although some have recently discussed possible strategy, culture and performance linkages (Hampel and Jemison, 1991; Schweiger and Walsh, 1990).

Following the theme from these two recent works, the goal of this paper is to empirically demonstrate how the underlying concepts and methodologies of the strategic and cultural fit approaches, when combined, can make an important contribution towards understanding the financial performance of related mergers. In particular, we examined whether the perceptions of differences between the cultures of the top management teams of merging firms of similar strategic fit have an effect on one important measure of financial performance, shareholder value. Within the framework of this examination, we find a strong link between equity and human capital.

PREVIOUS RESEARCH

The main effect of cultural fit

Do mergers create value for the shareholders of the acquiring firm? Most empirical investigations of this question in the management literature identified strategic fit as the principal main effect variable. These studies typically hypothesize that the tighter the fit, the more the core technologies of the merging businesses are related, the more value would be created for the acquiring firms' shareholders (Lubatkin, 1983). The results to date, however, have not been consistent. Indeed, one can find as many published studies which conclude a 'strategic fit' effect (Lubatkin, 1987; Chatterjee, 1986; Elgers and Clark, 1981) as those which do not (Singh and Montgomery, 1988; Shelton, 1988).

While these studies provide no clear resolution about the value of strategic fit in mergers, they have provided important insights for further research which might. For example, when read carefully, most strategic fit studies acknowledged that their results may be influenced by, among other factors, 'the ways in which the interdependence of the two firms is actually managed' (Hampel and Jemison, 1987:56).

Behavioral researchers provide a complementary explanation: the support of the employees

of the acquired firm is contingent upon cultural fit, or the degree to which they perceive their culture to be compatible with that of the buying firm (Buono and Bowditch, 1989; Callahan, 1986; Sales and Mervis, 1984; Arnold, 1983; Davis, 1968). Without employee support, the expected performance from a merger is rarely realized.

Culture has been defined as 'the set of important assumptions (often unstated) that members of a community share in common' (Sathe, 1985:10). Every group, corporate or otherwise, has a unique culture that is shaped by its members' shared history and experiences (Schein, 1985; Louis, 1986). Broadly speaking, culture affects practically all aspects of the way people of a group interact with each other. At the top management level, for example, culture influences such organizational practices as rules of conduct, leadership styles, administrative procedures, and perceptions of the environment (Lorsch, 1986; Donaldson and Lorsch, 1983; Bhagat and McQuaid, 1982; Schwartz and Davis, 1981). Further, culture is not easily modified; its full potency can be seen when two autonomous cultures are brought into close contact with each other, as typically happens when two firms merge.

The likelihood of contact, however, will not necessarily be the same for all merger types. As Nahavandi and Malekzadeh (1988) point out, the strategy underlying a merger determines the extent to which the dominant cultures of two firms come into contact. For example, in conglomerate mergers where the products and markets of the combining firms are dissimilar, the acquired firm is more likely to be expected to conform only to the buying firm's financial and planning systems. The acquired firm's other functions, will likely remain autonomous, perhaps as a separate subsidiary, and therefore be relatively unaffected by buyer's organizational culture (Napier, 1989; Shrivastava, 1986; Dundas and Richardson, 1982). Autonomy is less likely to occur in related mergers where the motivation to merge generally stems from the buyer's belief that it can achieve operating synergies as well as financial synergies between the two firms (Chatterjee, 1986; Walter, 1985). In related mergers, therefore, the employees of the acquired firm are more likely to be expected to conform to the culture of the buyer than in unrelated mergers.

The pressure on the acquired firm to acculturate, or conform to the culture of the buyer,

however, may depend upon, among other things, how dissimilar the cultures of the two organizations are perceived to be by the acquired employees (Weber, 1988; Berry and Annis, 1974). Dissimilar cultures can produce 'feelings of hostility' and 'significant discomfort' which can lower the commitment and cooperation on the part of the acquired employees (Weber and Schweiger, 1989; Buono *et al.*, 1985; Sales and Mirvis, 1984). It is not surprising, therefore, that poor cultural fit has been the nemesis of many related mergers that appeared to make good strategic sense (e.g. Time and Warner, see Marchese, 1990). In sum, differences in organizational cultures, may have an important impact on the financial success of a related merger, and therefore on the value of the acquiring firm's common equity.

While it is reasonable to expect that a firm will contain numerous subcultures and each imparts its own influence on the overall cultural fit between two merging organizations, we chose to focus on one subculture, that of the top management team, for our unit of analysis, and we did so for four reasons. First, as one referee pointed out, many organizations select their top management from the ranks of individuals who appear to best represent the value system of the majority. In other words, the top management teams' subculture may be a reasonable manifestation of the organizations' overall culture. Second, the top managers of an organization also play an important role in establishing and shaping the culture of their organization (Schein, 1985; Deal and Kennedy, 1982). Their perceptions, therefore, are expected to permeate to the subcultures existing at the other levels of an organization. The importance of top management culture is also evidenced by a number of recent studies conducted in a nonmerger context which found a significant relationship between the culture of the top management team and the firm's financial performance (Dennison, 1990; Covin and Slevin, 1988; Covin, 1985). Third, some have argued that cultural differences at the top management level are most likely to have a direct bearing on the merging organizations' ability to realize the financial potential of the merger (Sales and Mirvis, 1984; Davis, 1968). Finally, in order to study the effects of cultural differences, it is essential that there be contact between the members of the two cultures. The

likelihood of such contact in mergers in terms of amount and intensity is greatest at the top management level. This should be true regardless of whether the integration approach taken by the buying firm is absorption, preservation, symbiotic, or holding (see Haspeslagh and Jemison, 1991:ch. 8). This is because the top managers are in frequent contact throughout the negotiation and transitional stages, while contact with middle and lower managers may not occur until later in the transitional stages, if at all (Schweiger and Walsh, 1990).

It may be instructive to note that the predicted relationship between perceptions of cultural differences and shareholder value is based on a central tenet of financial economics that the capital asset market is efficient; that is, security prices reflect all publicly available information (Fama, 1976). Accordingly, any change in the value of an acquiring firm's common equity due to merging is due to a change in the market's estimates of the firm's future financial performance.

Of course, some may argue that the capital asset market does not concern itself with possible cultural problems in mergers, but instead considers only issues of strategic fit when estimating the financial impact. However, with the continual flow of anecdotal evidence from the business world and the popular business press about the adverse effects of 'cultural collisions,' it is difficult to believe that capital asset market does not also factor in the human side of a merger. Clearly, the costs of cultural differences are difficult to quantify, *a priori*, and the capital market may not be omniscient enough to predict actual earnings with complete accuracy. However, the market, on average, uses all information available when setting a price to a firm's security (Fama, 1976), and those investors in the market who are familiar with the top management teams of the combining firms are, at minimum, able to form an opinion about consolidation costs. To do otherwise would be to systematically over-estimate the value of a merger, and there is no theoretical or empirical evidence to suggest that the capital markets follow this, or any other, observable and inefficient trading pattern.

From the previous discussion about cultural fit, capital asset pricing, and shareholder value comes the first hypothesis:

Hypothesis 1: The change in shareholder value of buying firms involved in related mergers will be inversely related to the degree of perceived cultural differences between the combining top management teams.

The main and moderating effect of cultural tolerance

Is the relationship between cultural fit and shareholder value stable across related mergers, or will cultural tolerance modify the relationship? The previous discussion assumed that other implementation influences on shareholder value will not have a bearing on the results. This assumption may not, however, be sound because it does not take into account such influences as the degree to which the buyer tolerates multiculturalism.

Nahavandi and Malekzadeh (1988) suggest that cultural differences will be less of a problem when the buying firm ‘... values cultural diversity and is willing to tolerate and encourage it’ (p. 83). Conversely, a buying firm that does not tolerate an acquired firm’s culture may use a variety of control mechanisms to establish its own culture in the acquired firm, thereby raising the potential for conflict between the two top management teams (Walter, 1985). Put another way, the more the buyer tolerates multiculturalism, the less likely it is for the buyer to expect the acquired firm to conform to its own goals, strategies, and administrative practices.

The foregoing discussion suggests that the predicted relationship between cultural fit and shareholder value is likely to be moderated by the degree of cultural tolerance. However, it is not clear whether cultural tolerance is: (1) independently related to shareholder value; (2) moderates the relationship between cultural fit and value; or (3) represents some combination of the two. Regarding possible independent effects, firms can be expected to differ according to their cultural tolerance, and some firms may be able to minimize the adverse impact of cultural differences between the two organizations. To the extent that the capital market investors hold opinions about this information, they will factor it along with other points of information when estimating the value of a merger. Regarding

possible moderating influences, it is also likely that in addition to the two independent effects, investors may also consider cultural fit in light of cultural tolerance. Accordingly, there may be the greater probability of value creation when cultural difference is low and cultural tolerance is high.

The following two hypotheses about main and moderating effects follow from the above discussions:

Hypothesis 2: The change in shareholder value of acquiring firms involved in related mergers will be directly related to the degree to which the buyer’s top management team tolerates multiculturalism.

Hypothesis 3: The buyer’s tolerance for multiculturalism will moderate the relationship between the perceived cultural differences between the combining top management teams and shareholder value. Specifically, the negative effects of cultural differences on shareholder value will be greatest when cultural tolerance is low.

Other influences

Relative organization size may also influence the relationship between cultural differences, cultural tolerance, and shareholder gains, although the direction of this influence is not clear. Penrose (1959) and Shrivastava (1986) argue that the larger the size of the acquired firm relative to the buyer firm, the more difficult it is for the buying firm’s managers to understand all the areas where integration is needed. ‘Therefore, the tendency is to react when problems are encountered rather than plan every step’ (p. 74). Conversely, Walter (1985) and Mirvis (1984) assert that when the acquired firm is small relative to the buyer, the human needs of the acquired firm tend to get overlooked or trivialized by the buyer. Alienation breeds its own source of discontent which can prevent a merger from realizing its financial potential. Finally, relative organizational size may have a direct influence on shareholder gains (Kusewitt, 1985). Given its potential impact, relative size will be used as a control variable in this study.

METHODOLOGY

Data

The sample of firms was drawn from an exhaustive list of mergers published in the *Journal of Mergers and Acquisitions* during three recent years (1985-87). One hundred and ninety-eight companies that met the following criteria were selected from this list: the buying firm gained controlling interest in the acquired firm; the core businesses of the merging firms were in the same two-digit Standard Industrial Classification (SIC) code to ensure that the mergers were between related firms; i.e., had products and/or markets that shared related features; and, the names and addresses of the top managers who were affiliated with the acquired firm immediately before the time of the merger were available, either in the *Directory of Corporate Affiliations* or in *Moody's Manuals*. The latter criteria ensured that the acquired firms in the sample were publicly traded, and as such, investors would have ample information about them.

A questionnaire was mailed directly to all of the top managers (CEO through senior vice presidency level) of each of the 198 acquired firms. Thirteen companies were deleted upon their request. From the remaining 185 firms, responses were received from 73, for a response rate of 39 percent.¹ Of these, 56 firms returned responses from more than one executive. Specifically, three firms responded with five completed questionnaires, five firms responded with four, 17 firms with three, 31 firms with two, and 17 firms with a single respondent.

Potential nonrespondent biases were checked by comparing respondent and nonrespondent firms with respect to their relative size and the time that had elapsed since the date the merger was announced. The reason for comparing firms on these two variables is that both may influence

the emotions and objectivity of the involved managers, and therefore influence their perceptions of cultural differences (Sales and Mirvis, 1984; Dundas and Richardson, 1982; Kitching, 1967). However, *t*-tests of mean difference used with each of the two control variables indicated that there was no evidence of a nonrespondent bias, at least based on size and time.

Two additional criteria for inclusion in the sample were then applied. First, the day of the first public announcement of each merger had to be clearly identified in the *Wall Street Journal*. Second, the buying firm had to be listed on the Center for Research in Security Prices (CRSP) daily stock returns file for at least 200 trading days (or about 10 calendar months) before the announcement day and 50 trading days after the announcement day. These criteria were necessary to calculate the study's performance variable; i.e., the change in the shareholder value of the buying firms. However, these criteria reduced the sample to 29 firms with multiple responses to our questionnaire and an additional 5 firms with single responses. As will be described later, four of these observations were deleted from the sample because their responses to the questionnaire were deemed unreliable.

The final sample of 30 firms was then checked for the possible over-representation of a single industry. One industry, banking (SIC 6711), appears seven times in the sample. While this may not be too surprising given the fact that the banking industry during this study's time frame was experiencing many mergers due to deregulation, it nevertheless might induce an industry bias into the tests of the study's three hypotheses. To check for this bias, we therefore ran each test twice, once on the full sample of 30 firms, and once on a reduced sample of 23 firms which excluded all bank mergers.

Independent variables

Cultural differences

These were assessed with a structured perception questionnaire which was administered to the top management of the acquired firms. While there is no general consensus on what are the most important dimensions of cultural difference (Trice and Beyer, 1984), certain dimensions and items have been shown to have high levels of reliability

¹ As will be mentioned in the section about independent variables, the responses from the 56 firms which returned more than one completed questionnaire were used to assess the construct validity of the instruments used to measure the top managers' perceptions of cultural differences and tolerance of multiculturalism. However, because only eight of these firms were traded on either the New York or American Exchanges and therefore listed on the Center for Research in Security Prices (CRSP) daily stock returns file, it is not possible to investigate in a statistically meaningful manner the shareholder gains to these firms. The 16-day cumulative abnormal return averaged for these eight firms was 10%.

and validity (Dennison, 1990; Wiener, 1988; Gordon and Cummins, 1979; Kilmann, 1985). Unfortunately, many of these measures do not deal specifically with mergers and/or top management perceptions of culture, and therefore had to be inferred from the existing literature.

The final measure of cultural differences between top management teams consisted of seven dimensions, each of which consisted of three to five items, resulting in a total of 29 items. The seven dimensions, (and the number of items used to measure each) are: innovation and action orientation (5 items); risk-taking (5 items); lateral integration (4 items); top management contact (3 items); autonomy and decision making (5 items); performance orientation (3 items); and, reward orientation (4 items).² Each item was constructed to elicit responses concerning cultural differences on a five-point scale, ranging from very similar to very different. (Measures are available from the authors.) Before mailing the questionnaire, each item was pretested by a selected group of top managers who had recent merger experience to ensure its clarity and relevance.

An advantage of assessing perceptions of cultural differences rather than examining the more tangible and objective outcomes of culture such as reward structures, office layouts, and missions statements, is that perceptions may be better predictors of behavior (Hellriegel and Slocum, 1974; Schneider, 1975). This is because perceptions 'involve how members define and interpret situations of organizational life and prescribe the bounds of acceptable behavior,' while the more tangible aspects of culture 'are the surface manifestations of organizational culture' (Dennison, 1990:32). Also, mergers may highlight stark contrasts in cultures which will motivate the managers of the threatened culture to develop a greater awareness of their own belief structures (Buono *et al.*, 1985; Sales and Mirvis, 1984).

Of course, a perceived organizational phenomenon may be ambiguous if 'one cannot be sure whether it implies an attribute of the organization

or of the perceiving individual' (Guion, 1973:120). This is particularly important if the individual's perceptions are used to represent a group of people. It is desirable, therefore, to check for within-group variance, or consensus among multiple respondents for each top management team in the study (James and Jones, 1974).

A check for the construct validity of our cultural difference instrument was thus made by using the responses from the 56 firms which sent multiple responses and the following procedures. In the eight publicly traded cases where there were three or more respondents, a difference of two or less units on each five-point item was considered an acceptable level of agreement. In the 17 cases where we had only two returned questionnaires, a more conservative criterion was used. In these cases, a difference of more than one unit on any item was considered to represent disagreement and therefore the measure was deemed to be unreliable.³

Following Schneider (1975), the average perceptions of individuals were considered reliable when a minimum of 80 percent of their perceptions demonstrated an acceptable level of agreement. Stated differently, when 23 of the 29 items of the scale measuring cultural differences demonstrated agreement for a firm, the average of each item was deemed representative of that firm's top management team. In four cases, the responses were deemed unreliable and therefore these mergers were deleted from further analysis. This reduced the final sample to 25 firms with multiple responses and an additional 5 firms with single responses.

Tolerance of multiculturalism

Tolerance of multiculturalism among the top management team of the buying firm was also assessed using a structured perception questionnaire that was administered to the top managers of the acquired firm. To measure tolerance, questions were constructed to assess the extent to which the acquired firm's managers perceive that the buying firm imposed its goals

² Although each dimension is intended to represent a different construct, the dimensions may not be fully independent. For example, some aspects of an innovation orientation such as the willingness to invest in technology will be associated with a risk-taking culture.

³ To ensure anonymity among the respondents from each firm, we have no way to identify their job titles, other than knowing that each was identified before the mailings as holding a senior management position. Also, we recognize that our analyses are based solely on the perceptions of the managers of the acquired firms.

and decisions (both operational and strategic) to them. Consistent with the Walter's (1985) assertion, this measurement approach assumed that control mechanisms represent the primary means by which buyers transfer their own culture to the sellers; the more controls, the less the tolerance. Clearly it is not possible to directly control the beliefs of the acquired management team. However, by establishing policies and procedures that influence how the acquired management team plans, budgets, and finances major investments, its beliefs may, over time, conform to those of the management of the buying firm. For example, the acquiring management can influence the acquired management's beliefs about innovation and risk-taking by establishing goals for R&D expenditures and short-term debt.

The final measure of tolerance of multiculturalism was therefore derived from the literature about management decision making and control (Cray, 1984; Horovitz and Thietart, 1982; Goehle, 1980; Vancil, 1979). Specifically, a questionnaire of 23 items was constructed which asked the top management of the acquired firm to report, on a five-point scale, the extent to which their goals and decisions were imposed on them by the buying firm. (Measures are available from the authors.)

These 23 items were included in the same questionnaire as the cultural difference items, and therefore were answered by the top managers of the acquired firms. As was the case with the cultural difference scale, tolerance of multiculturalism responses was considered acceptable when 80 percent of the responses to each item demonstrated reliability. Also, each item was pretested to ensure clarity and relevance.

Finally, the control variable, *relative organizational size* was measured as the ratio of the buying firm's total assets to those of the acquired firm.

Dependent variable

Financial performance was measured by estimating changes in stockholder value by the market model in the following form:

$$R_{it} = a_i + b_i R_{mt} + e_{it},$$

Where R_{it} is the rate of return on common shares of firm i in day t , and R_{mt} is the daily returns

for the overall market portfolio defined by the CRSP equally weighted stock market index. Following the traditional procedures used with this model, estimates of historic parameters a_i and b_i (α_i and β_i) were obtained by longitudinally regressing 150 trading days of data beginning 200 trading days before the merger announcement day. The parameters were then used to compute abnormal returns, or $e_{it} = R_{it} - (\beta_i R_{mt} + \alpha_i)$ over a time frame beginning 10 days before the announcement through 5 days after the announcement. Abnormal returns (e_{it}) represent the firm's returns in day t in excess of its expected market returns, and are interpreted as the re-evaluation by the capital market of the firm's future profitability based on the information released in the merger announcement. Put another way, abnormal returns are more than just a measure of shareholder performance; abnormal returns represent a proxy of investors' perceptions.

There are other advantages to assessing the financial performance of merger with this stock price-based measure. First, stock prices are believed to be fully specified; that is, they are not limited to a specific aspect of performance such as sales or productivity, but rather reflect all relevant information aspects of performance. Second, stock prices have been shown to 'see through' managers' attempts to manipulate reported accounting measures. Third, stock prices are reported objectively. Finally, the abnormal returns measures that are computed from the stock price are adjusted for general market movements, and the firm's market risk (i.e., beta). In sum, abnormal returns provide an excellent basis for assessing the impact of organizational processes across different corporate settings. (The interested reader is referred to Lubatkin and Shrieves, 1986:498-499.)

Before the abnormal returns for each firm can be used as a test statistics for parametric tests, however, they are standardized by the deviation of R_{it} from its mean over the estimation period (Brown and Warner, 1985). To control for possible early anticipation of the merger and postannouncement revaluation, the estimates of the standardized abnormal returns were cumulated over a 16-day interval, beginning 10 trading days before the first public announcement of the merger and continuing to 5 days after the announcement day. The sensitivity of the results

Table 1. Means, standard deviation,^a Pearson correlations between dimensions of cultural differences^b and reliabilities^c

Dimension	Mean	S.D.	IAO	RA	LI	TMC	ADM	PO	RO
IAO	2.55	0.86	(0.88)						
RA	2.89	0.85	0.82	(0.91)					
LI	2.46	0.90	0.67	0.62	(0.91)				
TMC	2.68	0.93	0.71	0.64	0.72	(0.82)			
ADM	2.64	0.88	0.76	0.63	0.73	0.64	(0.89)		
PO	2.24	0.96	0.71	0.61	0.62	0.63	0.72	(0.92)	
RO	2.26	0.87	0.80	0.70	0.72	0.71	0.75	0.81	(0.94)

^a All reported statistics are calculated from the respondents of the 52 firms who completed multiple responses to the questionnaire and whose responses were deemed reliable.

^b IAO = Innovation and action orientation; RA = Risk-taking attitude; LI = Lateral integration; TMC = Top management contact; ADM = Autonomy and decision making; PO = Performance orientation; RO = Reward orientation.

^c Cronbach Coefficient Alpha Reliabilities in parenthesis.

to the length of the interval is then checked by selecting an alternative, 7-day interval, beginning 3 trading days before the announcement day and continuing 3 trading days after the announcement day.

Method of analysis

The cultural difference and tolerance of multiculturalism constructs were tested for evidence of convergent validity among their respective dimensions. High convergence suggests that the component scales of each construct can be collapsed into two single indices, one for cultural difference and one for tolerance of multiculturalism. (As is described in the results section, high convergence for each factor was found.) The following moderator regression model was therefore used to test the hypothesis:

$$\text{CAR} = F(\text{Cultural Differences, Multiculturalism, Relative Size, Cultural Difference} \times \text{Multiculturalism})$$

RESULTS

Table 1 displays the means, standard deviations, reliabilities, and intercorrelations for the seven dimensions of the cultural difference measure as calculated from the top management team responses of the 52 acquired firms who returned

at least two completed questionnaires.⁴ All intercorrelations between dimensions are high (at least 0.61), all are significant ($p < 0.01$), and all demonstrate high measures of internal consistency (Cronbach's Coefficient Alpha ranging from a low of 0.82 to a high of 0.94). Consistent with the theory underlying the construction of the cultural difference measure, each dimension captured a unique aspect of cultural differences; i.e., the dimensions demonstrated discriminant validity (Rosenthal and Rosnow, 1984). This was evidenced by the fact that the Cronbach's Coefficient Alpha for each dimension was higher than the dimension correlations with any of the other six dimensions.

The data also show strong evidence of convergent validity, suggesting that the seven dimensions are part of the same general construct (Buchanan, 1974; Rosenthal and Rosnow, 1984). For example, the internal consistency of the seven dimensions when combined is 0.97. Factor analysis was also used to confirm the unidimensionality of this construct. The results (available from the authors) provide reasonable evidence that the best linear combination was produced when all seven dimensions of the cultural difference construct were

⁴ The two additional sampling criteria which were necessary to compute abnormal returns were not used when computing the statistics in Tables 1 and 2 so that the psychometric properties of the questionnaire could be tested with the maximum available sample size.

aggregated into one factor.⁵ The proportion of common variance accounted for by this factor is 0.74. Therefore, the seven dimensions were collapsed into a single cultural difference index by summing the scores for all 29 items and then taking their average.

Table 2 displays the means, standard deviation, reliabilities, and intercorrelations for the two decision process dimensions of the tolerance of multiculturalism measure, again calculated based on the responses of the 52 acquired firms. The intercorrelation between the dimensions is high (0.90), and significant ($p < 0.01$). Moreover, each demonstrates high levels of internal consistency reliabilities (Cronbach's Coefficient Alpha equal to 0.95 for goals and 0.97 for decisions). As with the cultural difference measure, the two dimensions of multicultural tolerance were therefore collapsed into a single index by taking the average score for all 23 items. The internal consistency reliability estimate for this index is 0.98.

As was previously reported, the sample of the 52 acquired firms was used to assess the psychometric properties of the cultural difference and multiculturalism measures, but all the observations in this sample could not be used in the shareholder return regression model because of data availability. However, a *t*-test of mean differences on these two measures for the sample

of 30 mergers used in the regression tests and the 22 mergers that are not, revealed no significant differences between the two subsamples at the 0.10 level of significance. This suggests that the psychometric properties of the management perception measures for the subsample of 30 mergers can be thought of as being representative of the larger sample.⁶

Table 3 presents the means, standard deviations and intercorrelations for all variables used in the regression model based on the sample of 30 acquired firms with at least one single respondent. The data from this sample (and from the more conservative sample of 25 mergers with multiple respondents, not shown) suggest no problems with multicollinearity. Table 4 presents the regression results for the full sample of 30 mergers. The regression results for the more conservative sample of 25 mergers are fully consistent with the results presented in Table 4 and therefore are not reported.

Overall, the results suggest that the capital asset market is not indifferent about related mergers. Rather, the mean CARs in Table 4 show that they appear to drive down the stock price of the acquiring firm an average of about 3.0 percent during the 16 trading-day period surrounding the merger announcement day, and by about 6.0 percent during the 7-day window. Stated differently, investors revised downward their earnings expectations for the acquiring firms because of the merger. In the two cases depicted in Table 4, the decline was significant to at least the 0.05 level. Also, this decline in shareholder value, while only 3–6 percent, is not a trivial loss. First, it represents a loss in excess of market movements. Second, it occurs over a short time frame. Most importantly, however, the loss is from an investment which makes up, in most cases, a relatively small percentage of the buying firm's total invested capital, yet it results in a significant decline in the buyer's total expected cash flows. The CAR findings are not atypical with those of previous market-based merger

Table 2. Means, standard deviations, and Pearson correlations between the dimensions of multiculturalism and reliabilities^a

Dimension	Mean	S.D.	1	Cronbach Alpha
Goals	2.86	1.06		0.95
Decisions	2.79	1.11	0.90	0.97

^a All reported statistics are calculated from the respondents of the 52 acquired firms who completed the questionnaire and whose responses were deemed reliable.

⁵ It should be noted that the small sample size used in the factor analysis may result in unstable loadings, and therefore, by itself, should not be considered as evidence of construct validity. However, when considered along with the estimate of internal consistency achieved using a single index (0.97) and the soon to be mentioned support for the criterion related validity, it is apparent that the measure demonstrates a reasonable degree of construct validity.

⁶ The means (standard deviations) for cultural difference measure for the samples of 30 and 22 are 2.61 (0.53) and 2.54 (0.67), respectively. The alpha coefficients for the cultural difference measure for these two samples are 0.94 and 0.98 respectively. Similarly, for the multiculturalism measure, the means (standard deviations) are 2.85 (1.07) and 2.85 (1.16), respectively. The alpha coefficients for this measure for both of these two samples are 0.98.

Table 3. Means, standard deviations, and intercorrelations for all variables used in regression model^a

Variables	Mean	S.D.	1	2	3
1. CAR (-10, +5)	-0.03**	0.07			
2. Cultural difference	2.57	0.57	-0.61***		
3. Tolerance of multiculturalism	2.85	1.13	-0.19	0.21	
4. Relative size ^b	28.97	30.94	-0.08	-0.08	-0.16

^a All reported statistics based on the full sample of firms; i.e. the 30 firms listed on CRSP tapes who responded with at least one completed questionnaire.

^b Relative size is computed as the ratio of the buying firm's total assets to those of the acquired firm.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4. Regression results of organizational variables on two measures of abnormal stock returns (CARs)^a

Independent variables	16-day CAR		7-day CAR	
	Beta	Std.Err.	Beta	Std.Err.
Intercept	2.94**	0.86	1.78*	0.77
Relative size	-0.00	0.01	0.00	0.01
Cultural difference	-0.99***	0.28	-0.54*	0.25
Tolerance of multiculturalism	-0.24+	0.15	-0.24+	0.13
Cult.Diff.* Toler. Multicult. ^b				
Model (N = 30)				
<i>F</i> -statistic		5.40**		3.45*
<i>R</i> ²		0.38		0.28
Mean (S.D.) of dependent variable		-0.03* (0.069)		-0.06** (0.033)

^a The research hypotheses are tested using standardized abnormal return measures as the dependent variable.

^b The interaction term, cultural difference * tolerance multiculturalism was highly collinear with its component measures and added no explanatory power to the model. Specifically, the incremental *R*² for both 16-day and 7-day CAR regression runs with the interaction term added was 0.002. As a result, the regression statistics are presented for the model which excludes the interaction term.

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

studies in the fields of financial economics and strategic management (see Jensen and Ruback, 1983; and Lubatkin and Shrieves, 1986, for summaries).

More interesting, however, are the regression results which indicate that the model was excellent at explaining the variance in the stock market performance of acquiring firms engaged in related mergers. This was found regardless of the time interval used to calculate the CARs, where the *R*-squares for the overall model were high (ranging from 0.28 to 0.38), and the *F*-statistics

were significant to at least the 0.05 level. These findings are particularly robust given the small sample sizes.

The results show strong support for the first hypothesis which predicts an inverse relationship between the acquired managers' perceptions of cultural difference and shareholder value. This was evidenced by the negative and significant *t*-statistic associated with the cultural difference measure. The results also support the second hypothesis but do not support the third one. As expected, the less the tolerance (i.e., the more

that control mechanisms are placed on the decision processes and actions of the top managers of the acquired firm) the lower the abnormal returns associated with the merger. This is evidenced by the regression coefficient for the tolerance of multiculturalism variable which is negative in all cases and significant to at least the 0.10 level. However, the interaction of multiculturalism and cultural differences (i.e., moderating effect of multiculturalism) did not contribute to the overall explanatory power of the model. Stated differently, investors appear to consider cultural fit when valuing a merger. However, the added information associated with a cultural fit in light of cultural tolerance has little effect on the acquiring firm's stock price.

The regression model was run a second time, on a subsample of 23 mergers which excluded the 7 mergers from the banking industry. The results (not shown) are fully consistent with the results presented in Table 4. Specifically, the overall model (F -stat = 9.32) is significant ($p < 0.01$) as is the cultural difference variable ($p < 0.001$) and the multiculturalism variable ($p < 0.10$), suggesting that the results in Table 4 are not sensitive to an industry bias.

To ensure that the cultural difference measure was associated with merger-induced stock market changes and not other firm-specific announcements that are extraneous to the merger announcement, the regression model was analyzed three more times, using the full sample ($N = 30$) with different dependent variables. First, estimates of abnormal returns were cumulated over a 16-day interval similar to the one reported in Table 4, but only for a period 1 year earlier.⁷ The regression results using this artificial event day are presented in Column A of Table 5. As expected, the mean CAR (0.004) is not significant and all predicted relationships are random.

Of course, the regression results presented in Table 4 may show the influence of a 'survivor bias.' The literature about executive turnover following a merger suggests that those acquired managers who feel intense cultural differences with the management of the buying firm will

eventually leave the organization (Walsh and Ellwood, 1991). Because we surveyed only those top managers who remained with the acquired firm up to 3 years after the merger, the respondents to our survey may not represent the sample population of acquired top managers, particularly as the time span increased between the merger date and the completion of the questionnaire. Put another way, as the time span increased so did the probability that the managers who filled out the questionnaire may be overrepresented by those who didn't feel intense cultural differences. Of course, this assumes that those who felt large differences would have already left the organization. This can be tested by comparing the responses of those who filled out the questionnaire around the time of the merger with those who filled it out up to 3 years after the merger. The regression model was therefore analyzed another time, using the full sample with a dependent variable that was scaled to measure elapsed time. Specifically, the *Wall Street Journal* was used to identify the legal transaction day for each merger. The distance in months that each merger occurred before January, 1988 was then calculated. The regression results on elapsed time are presented in Column B of Table 5. They indicate a relationship that is so weak as to relegate any concerns about survivor-effects in the present study to a nonissue status.

The causality of the results presented in Table 4 may also be questioned. For example, attribution theory suggests that postmerger performance may influence the reliability of self-reported perceptions of cultural differences (Hayes and Hoag, 1974). Put another way, performance success can lead to positive feelings, thereby reducing the importance and even the memory of perceived cultural differences. Performance failure, on the other hand, may amplify a 'we-they' orientation, even if initial differences were slight. As was the case with the turnover argument, the attribution argument suggests that our survey findings are not necessarily time invariant. Rather, the longer the elapsed time, the more likely that postmerger performance may bias the respondents' perceptions.

To help ensure that the regression results presented in Table 4 were not biased by postmerger performance, estimates of abnormal returns were cumulated over a 50-day, post-legal transaction day interval beginning one day after

⁷ To compute the artificial event day abnormal returns, historic parameters a_i and b_i were re-estimated by longitudinally regressing 150 trading days of data beginning 200 trading days before the artificial event day.

Table 5. Regression results of organizational variables on three alternative dependent variables^{a,b}

	Dependent variables					
	A		B		C	
	Artificial date Beta	Std.Err.	Elapsed time Beta	Std.Err.	Post merger Beta	Std.Err.
Independent variables						
Intercept	-0.129	0.094	18.62***	6.05	1.58	1.01
Relative size	0.001	0.001	0.03	0.04	0.00	0.01
Cultural difference	0.046	0.033	0.40	2.11	-0.63	0.34
Tolerance of multiculturalism	-0.004	0.016	-0.22	1.08	-0.01	0.17
Model (N)	30		30		30	
F-statistic	1.65		0.17		1.18	
R ²	0.14		0.02		0.13	
Mean (S.D.) of dependent variable	0.004 (0.10)				-0.01 (0.11)	

^a 'Artificial date' is defined as the day one year earlier than the first public announcement of the merger. 'Elapsed time' is the number of months that each merger in the sample occurred before a base month. 'Post merger' refers to the 50-trading-day period beginning one day after the legal transaction day.

^b The alternative hypotheses (Artifical Event and Post Merger) are tested using standardized abnormal returns measures as the dependent variable and a two-tailed *t*-test.

* *p* < 0.05; ** *p* < 0.01; *** *p* < 0.001.

the legal transaction day.⁸ To the extent that the capital markets act efficiently, the informational impact of the announcement should be fully discounted at the time surrounding the announcement day and not the transaction day. The regression results using the postmerger CAR as the dependent variable, therefore, should resemble the results using the artificial event-day, in that both dependent variables are not expected to have systematic influences. The results, shown in Column C of Table 5, confirm this expectation. Like the artificial event day regression results, the postmerger results were insignificant (*F*-statistic is 1.18). Also, the postmerger CAR (-0.01) is small and not significant, making it highly unlikely that it would have an influence on the self-reported perceptions of cultural differences. Similar to the results in Columns A and B, the results in Column C also fail to refute the principal findings of Table 5.

In sum, the findings from the additional three regression analyses increase the confidence in the

results reported in Table 4 where both the 16-day and 7-day CAR measures were found to have systematic influences. Put another way, the findings from the additional analyses suggest that the relationships that were consistently observed in Table 4 were due to the information released by the merger announcement and not by some sampling or statistical anomaly.

A last verification of the results in Table 4 appears in Table 6 where the data were analyzed by a chi-square test. The principal advantage of this nonparametric test over the parametric test presented in Table 4 is that the chi-square test minimizes the influence of performance outliers. The test proceeded by first taking a median split of the sample based on a high to low ranking of each merger's cultural difference score, and then comparing the percentage of mergers in each half with 16-day CARs above the sample median CAR score. (A second chi-square analysis, not shown, compared the percentage of mergers in each cultural difference half with positive CARs. It yielded the same results as the first chi-square analysis.)

The results in Table 6 are fully consistent with the first hypothesis and with the results presented in Table 5. Mergers that were perceived to have high cultural differences appeared much more

⁸ To compute the post-transaction day abnormal returns, historic parameters a_i and b_i were re-estimated by longitudinally regressing 150 trading days of data beginning 200 trading days before the transaction day.

Table 6. Distribution across high and low cultural difference groups of CARs

Ranking	Sample	
	(Median CAR = -0.003)	
High cultural difference		
% with CARs below median	40%	
chi-square stat.	5.4*	
Low cultural difference		
% with CARs above median	60%	
chi-square stat.	0.6	

* $p < 0.05$.

likely to show negative CARs (i.e. to lose shareholder value) than positive CARs ($p < 0.05$). The opposite pattern was observed for mergers with low cultural differences: investors tended to favorably view these mergers. Put differently, mergers with low amounts of cultural differences between the top management teams tended to create value (i.e., show positive CARs) for the shareholders of the acquiring firms.

DISCUSSION AND CONCLUSION

The findings of this research provide the first systematic evidence linking equity and human capital in mergers and acquisitions. Specifically, the capital market's perceptions about the earnings impact of a related merger are associated with the acquired managers' perceptions of cultural differences between their top management team and that of the acquiring firm. The findings also highlight the usefulness of combining the macro, strategic management approach and the micro, behavioral approach to better explain merger outcomes. Finally, the findings have practical importance because they show that investors are generally skeptical about mergers where the cultures between the top management teams are perceived to be incompatible, while they are supportive of mergers where the cultures appear to be compatible. The implication is clear: the management of a buying firm should pay at least as much attention to issues of cultural fit during the premerger search process as they do to issues of strategic fit. Interestingly, while investors, based on the results of this study,

appear to view cultural issues as important, these issues, according to Jemison and Sitkin (1986) are often overlooked by the managers of the acquiring firm due to problems with the merger planning process.

The finding concerning tolerance of multiculturalism also suggests that an overemphasis on controlling newly acquired firms by imposing goals and decisions on them may be dysfunctional. Stated differently, as tolerance decreases, so does the market's earnings expectations. Perhaps some acquiring firms overestimated the synergistic potential of the merger, or underestimated the costs of integration needed to realize the potential (Chatterjee, 1986; Hespelagh and Jemison, 1987). The findings therefore suggest that integration needs to proceed carefully in order to reap any anticipated synergies. To show intolerance for the acquired managers' culture is to threaten the cooperation and commitment of the very group who may be instrumental in determining the mergers ultimate success (Weber, 1988).

Of course, some may argue that the present findings might be a statistical artifact, emanating from the study's reliance on postmerger perceptions of cultural differences by the acquired managers. While the theoretical discussion preceding the hypothesis implied a specific causal relationship between cultural difference and shareholder value, the different time frames used to assess each measure prevented a definitive test of causality. However, the implied causal relationship is reasonable: it is difficult to believe that investors do not factor the human side of a merger along with the strategic side when

estimating a merger's payoff, particularly in light of the continual flow of anecdotal evidence about the adverse effects of 'cultural collisions.' Also, the regression results in Table 5 suggest that there was no statistical support for the three rival hypotheses. Finally, the robust evidence presented by the regression analyses in Table 4, regardless of the time horizon employed to compute the merger-induced abnormal return measure; and the chi-square analyses presented in Table 6, further suggests that the observed relationship was not due to chance. Indeed, the *R*-squares that were observed in the two cases depicted in Table 4 were unusually high (around 0.30) given the statistical properties associated with the abnormal return measure. Most, if not all, published studies which have attempted to explain the variance in abnormal returns arrived at much lower correlations. The results of the present study, therefore, highlight the potential utility of combining the concepts and methodologies of stock market measures with behavioral measures.

In summary, an interdisciplinary approach to studying mergers has long been overdue, and the findings of the current study highlight the potential of this approach. Clearly, there are opportunities for further research. For example, the present study warrants replication, using other forms of measurement such as anthropological and other nonsurvey approaches, expanded samples, and samples containing unrelated as well as related mergers. Regarding the latter, unrelated mergers have less operational synergies, and therefore can be expected to show different types of contact between the combining top management teams which may attenuate or accentuate the findings of the present study. Replication studies should also try to measure managements' and investors' perceptions during comparable time frames so as to establish stronger causal linkages between cultural fit and shareholder value than was established with the present design. Of course, access to such data may be very difficult. However, any attempt at triangulation would be useful for supporting both the internal and external validities of the present study.

Other research efforts could be directed towards understanding how cultural differences manifest themselves. For example, do they become apparent during negotiations and due

diligence, or only after closing? Do they manifest themselves in dysfunctional ways, such as a loss in job commitment and an increase in intergroup conflict? Can the severity of the conflict explain the high levels of management turnover which some researchers observe but have had difficulty explaining (Walsh, 1988, 1989)? Finally, can cultural differences be effectively managed to minimize their negative impact? A recent case study found that interventions intended to promote intercultural learning was effective, at least in one situation (Schweiger, Ridley and Marini, 1991). A second case study found that the impact of cultural differences could be minimized when the buying firm takes the time to create a positive atmosphere for capability transfer before initiating any actual consolidation of human and physical assets (Ghoshal and Haspeslagh, 1990).

A final research opportunity has to do with studying the subject of situations where cultural differences may not be as important. Following Haspeslagh and Jemison's (1991:143–144) lead, 'The important question, thus, is not how different the two cultures are, but whether maintaining that difference in the long term will serve a useful function.' They go on to describe four types of acquisition integration approaches, determined by the need for strategic interdependence (low and high) and the need for organizational autonomy (low and high). The importance of cultural difference should vary between these types, with the impact being felt most with absorption types (high independence, low autonomy) and felt least with holding types (low, low). Of course, our study focused its attention on one broad type of strategic interdependence i.e. related mergers, and the buyer's tolerance for multiculturalism. We did not classify mergers by the four integration types. It would be therefore interesting to investigate the strategy, culture, performance linkage using a conceptualization based on integration types.

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