

**POURING GOOD MONEY AFTER BAD: A COMPARISON  
OF ASIAN AND DEVELOPED COUNTRY MANAGERIAL  
DECISION-MAKING IN SUNK COST SITUATIONS  
IN FINANCIAL INSTITUTIONS**

*Bashir A. Khan, Stephen B. Salter  
and David J. Sharp\**

*Recent currency and bond trading losses at Barings and Daiwa banks illustrate the willingness of managers to over-commit resources to a course of action in which sunk costs have been incurred and which by any rational standards should have been long discontinued. An international study of the determinants of managerial risk-taking is important because it sheds light on the extent to which aggressive decision-making reported in north American literature is prevalent elsewhere, and whether there are systematic differences between behaviours in different countries.*

*The study has important implications for the practice of management. For example, by knowing cross-cultural differences in willingness to take risk, and to act in one's individual rather than the general interest, managers in transnational corporations would be better able to predict risk-taking behaviours and adjust internal risk management systems accordingly.*

One of the more difficult management decisions is to decide whether to continue to commit resources to a risky and highly uncertain project (to escalate it), or to abandon it, after a great deal of corporate investment, and possibly personal commitment and reputation, have already been used up. Recent unauthorized speculation by financial traders in Barings and Daiwa banks are spectacular examples of the escalation of decisions which could and should have been terminated much sooner than they actually were. An understanding of the factors which lead to and exacerbated this escalation behaviour, and how they vary between national cultures, is therefore important to managers of multinational organizations if the risk of similar events in the future is to be reduced. Previous north American research suggests that

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\* Respectively Lahore University of Management Sciences, Texas A&M University and the University of Western Ontario.

the presence of conditions for adverse selection (agency theory) and the framing of information (prospect theory) may explain the escalation of losing projects. Using a sample of managers from the United States, Canada, Hong Kong, China, Singapore and Pakistan, this study explores cross-cultural differences in willingness to escalate a losing project by making further investment with zero net expected value. It also constitutes a joint test of the universality of agency and prospect theory.

We first review the literature and develop a hypothesis (section I). Methodological issues are then addressed (section II), followed by results (section III), discussion of results (section IV), and conclusions and implications (section V).

## I. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### *Explaining escalation of commitment*

The north American literature (e.g. Whyte 1993) suggests a number of factors that could promote the excessive escalation of risky projects. Two that have been widely studied are a framing effect (Kahneman and Tversky 1979) and agency theory (Jensen and Meckling 1976). The framing effect arises from an individual's cognitive processing of the value of decision outcomes, which results in the over-weighting (relative to a purely economic rational valuation) of losses when they are described as certain (in contrast to uncertain). Thus, when a decision outcome is described (framed) as a loss, managers are more willing to take risks to avoid that certain loss outcome. Whyte (1993) argues that, even though from a rational economic view, sunk costs are irrelevant to a decision, the presence of a sunk cost in a decision context may predispose decision-makers to take risks. This arises because presenting prior investments as a potentially recoverable loss is similar to framing a decision to do nothing as a certain and negative loss, whereas escalating the decision results in uncertain but possible loss recovery. Such loss recovery may be preferred to the certainty of the loss already incurred. Whyte (1993) demonstrated, using students in both an individual and group context, that the presence of sunk costs significantly increased the likelihood of project escalation, as predicted by prospect theory. Whyte (1993) also demonstrated that personal responsibility for a project significantly increased the likelihood of escalation. Rutledge and Harrell (1991) find similar results but confirm that in an escalation of commitment decision, while both negative framing and initial responsibility for a decision increased the likelihood of escalation, framing was dominant.

The second explanation of escalation is based on agency theory, which states that rational managers act in their own self-interest, rather than of the firm's shareholders. Adverse selection problems of this type arise when two conditions are satisfied (Baiman 1982, 1990). First, there must be a condition of information asymmetry, that is, a decision-maker's supervisor (principal) must have less information than the decision-maker, and therefore is unable to closely monitor the subordinate's

(agent's) decisions. Second, an action in the agent's self-interest has to be different from that which would have been made in the interest of the firm, known as an incentive to shirk. If escalating the decision is in the manager's (agent's) personal self-interest, and if he has private information regarding the outcomes of the escalation decision that his supervisor (principal) does not have, then the manager agent will rationally escalate the decision in his own interest. Harrison and Harrell (1993) show that, as predicted by agency theory, the presence of adverse selection, is likely to bias subjects in a project abandonment decision in favour of continuing rather than abandoning the project. Harrell and Harrison (1994) confirm the effect found in Harrison and Harrell (1993) but demonstrate that both incentive to shirk and asymmetrical information must be present for adverse selection and escalation of commitment in the direction predicted by agency theory.

### *Universal theories and culture*

The debate over the universality of theories of management behaviour is a long-running one. Adler (1983, 1991) and Hofstede (1983) raise doubts not only about the cross-cultural validity of American theories, but also point out the cultural myopia of north American research. They argue that not only assumptions regarding management behaviour, but also research methodologies, including hypotheses to be tested and the manner in which they are tested, are culture-bound, and may not apply to all cultures. If Hofstede (1983) and Adler (1983, 1991) are correct, this raises the possibility that certain behavioural theories may be associated with particular cultures, and that certain cultures may be expected to respond differently to particular stimuli.

Hofstede (1980a, b) in his comprehensive study of over 50 national cultures, identified north American and similar anglo cultures (Australia, New Zealand and the United Kingdom of Great Britain and Northern Ireland) as highly individualist, while many Confucian Pacific rim countries, such as Singapore and Hong Kong, China as less individualist and more collectivist. Agency theory, which is essentially a theory of self-interest, may be more associated with strongly individualistic countries (indeed, it is interesting to speculate whether agency theory could have been developed to the extent it has been in any culture other than an individualist one; the very idea of rigorously modeling self-interest may not have occurred to researchers in a collectivist culture). Agency theory assumes a culture where emphasis is placed on an individual's duty to oneself, and where such self-interested behaviour is the norm, and therefore culturally acceptable. Indeed, the whole basis of research in management accounting and control systems is premised on the assumption that managers act in their own interest (Healy 1985; Thornton 1982). It is possible that in a more collectivist culture, where individual achievement is less valued, and individual responsibility to one's organization is stressed, managers would be less willing to take actions in their own self-interest. Similarly, Gray (1988) and Salter and Niswander (1995) have

demonstrated that culture directly affects differences in financial reporting practices and accounting structures across countries.

The relationship between prospect theory and culture is less clear. Kahneman and Tversky (1979) noted that some effects of prospect theory were “essentially identical” among Swedish, Israeli and American students and faculty. This is consistent with the view that prospect theory is a theory of individual human cognition and information processing, and therefore independent of culture. However, they also note that “the carriers of value are *changes* in wealth or welfare, rather than final states” (p. 277), and cite the example that a given level of wealth may imply abject poverty for one person and great riches for another. To the extent that a perception and/or actual levels of these variables are culture-related (Hofstede 1980b), culture may affect perceptions and therefore decision choices. Thus, it is possible that prospect theory is culture-specific.

Hofstede (1980a) identified a culturally-based measure of collective tolerance for uncertainty, which he labeled “uncertainty avoidance”, which may play a part in decision-making under risk. Singapore and Hong Kong, China were relatively comfortable with the uncertainties of life, while anglo/north American countries (UK, USA, Canada, Australia and New Zealand) were more uncertainty avoiding, and Pakistan highly so. To the extent that a greater comfort with uncertainty is reflected in a higher willingness to take risks, the Confucian values of patience combined with higher risk-taking might indeed provide the basis for different decisions under uncertainty.

The low uncertainty avoidance of the Pacific rim countries suggests two possible effects. First, it may simply cause an overall greater willingness to take business risks. However, there may be another effect in a negatively-framed escalation decision situation, where even the more uncertainty avoiding north American cultures are willing to take risks to avoid creation losses. Framing may thus act as a *de facto* modifier to cultural predilections. A less uncertainty avoiding culture should, therefore, exhibit an enhanced framing effect.

### ***Hypotheses***

Joining the streams of literature above, the purpose of this paper is to test for cross-cultural differences in responses to situations of decision-making under uncertainty. Both prospect and agency theories have been used to explain escalation of commitment, and are jointly and separately tested here in different cultures. Decision-making under uncertainty is used as a background, in a sunk cost, escalation of commitment, situation. The hypotheses below are in the alternate form.

**Ha 1:** *Ceteris paribus*, managers from low uncertainty avoidance cultures are more willing to take risks to escalate losing projects.

**Ha 2:** Managers from countries with high individualism scores are more likely to escalate decisions when agency conditions (an incentive to shirk and asymmetrical information) are present.

**Ha 3:** Managers from low uncertainty avoidance cultures will exhibit an enhanced framing effect relative to managers from higher uncertainty avoidance cultures.

## II. METHODOLOGY

### *Sample and administration*

Managers with at least two years of full-time work experience in Pakistan, USA, Canada, Hong Kong, China and Singapore participated in the study. The Pakistani sample was obtained from alumni lists, and was contacted by mail. 105 responses were received from two waves of mailings totalling 300 questionnaires, for a response rate of 35 per cent, while the majority of the rest of the sample attended various executive, part-time or full-time MBA programmes, and participated in the study during class time; however, some took the instrument from class and returned it later. Approximately 20 managers from the commercial division of a major Singapore bank who agreed to participate were also included; the instrument was distributed via a contact person at the bank. The sample demographics are shown in table 1.

Given the similarity of cultures in Singapore and Hong Kong, China and in USA and Canada, based on Hofstede (1980a, b), the sample was aggregated into three groups on the basis of two culture measures (UA and IDV) for the purposes of

**Table 1. Demographic data (means of items, in local currency where applicable and number of respondents reporting each responsibility)**

	<i>USA</i>	<i>Canada</i>	<i>Pakistan</i>	<i>Singapore</i>	<i>Hong Kong, China</i>
Years of full-time work experience	5.6 n = 129	8.4 n = 261	14.2 n = 87	10.2 n = 211	7.1 n = 104
Number of employees for whom responsible	7.2 n = 21	71.1 n = 69	120.3 n = 74	45.8 n = 171	8.1 n = 104
Lending limit	n.a.	\$CAN167,500 n = 4	Rs 33.7 million n = 8	\$S4.4 million n = 23	n.a.
Expenditure budget	\$US 3.3 million n = 9	\$CAN8.3 million n = 59	Rs 349 million n = 36	\$S33.8 million n = 84	\$HK3.2 million n = 29
Revenue budget	\$US 43.6 million n = 5	\$CAN45.3 million n = 39	Rs 445 million n = 26	\$S154 million n = 47	\$HK19 million n = 11

calculation of inter-cultural differences. The groups that resulted were Pakistan (high UA, collectivist), a United States/Canada group (highly individualist, moderate UA), and a Hong Kong, China/Singapore group (collectivist, low UA). Tests of differences in responses between the two countries in two groups indicated that there were no significant differences between them.

### ***Instrument***

The experiment was pre-tested in the USA, Canada and Singapore, with additional comments from academic colleagues in Pakistan and Hong Kong, China. Subjects were presented with four escalation decisions, and were asked whether they would make a further investment, the expected value of which was equal to the amount invested (i.e. it was a break-even additional investment). In all cases, the activities ("projects") to date had incurred non-recoverable losses, and their future outcome was in some doubt. Two cases were operating decisions with possible long-run intangible benefits (market research and software development projects), and two were short-term financial decisions (currency speculation and a risky bank loan).

Agency was manipulated by including in two of the cases a description of the decision-making situation in which both conditions for adverse selection (information asymmetry and a personal incentive to take the risk) were present, and in the other two a description in which they were absent. Framing was manipulated by describing the outcome of not taking the decision either in neutral terms (in two cases), or in a way which highlighted the already-incurred (sunk cost) loss as certain and the loss avoidance possibility of escalating the situation by making an additional investment (two cases). This resulted in four versions of the instrument; to control for possible order effects, four versions with the sequence of cases reversed were also provided, resulting in a total of eight versions of the instrument. Thus, each participant received all four cases, each with a different combination of agency and framing manipulations. The amounts of the decision were intentionally limited to realistic amounts for which respondents would likely be responsible in the course of their own work, and were of approximately similar magnitude in each country, but expressed in local currency terms. Unlike previous studies (Whyte 1993; Harrell and Harrison 1994; Rutledge and Harrell 1992) which use a continuous decision variable, this study enhanced the realism of the case situation by requiring respondents to make a go/no go decision.

## **III. RESULTS**

### ***Between culture comparisons***

Since order effects of cases were found to be insignificant, all results are reported for the two orders combined. Table 2 shows the percentage of respondents

**Table 2. Percentage of respondents willing to escalate decisions**

<i>Panel 1A</i> <i>North America:</i> <i>Software development case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	58 (n = 93)	70 (n = 96)	64 (n = 189)
	Present	61 (n = 99)	60 (n = 101)	61 (n = 200)
	Totals	59 (n = 192)	65 (n = 197)	63 (n = 389)

<i>Panel 1B</i> <i>Pacific rim:</i> <i>Software development case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	59 (n = 78)	88 (n = 76)	77 (n = 154)
	Present	69 (n = 85)	70 (n = 76)	70 (n = 161)
	Totals	68 (n = 163)	79 (n = 152)	73 (n = 315)

<i>Panel 1C</i> <i>Pakistan:</i> <i>Software development case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	86 (n = 22)	88 (n = 26)	88 (n = 48)
	Present	78 (n = 18)	92 (n = 24)	86 (n = 42)
	Totals	83 (n = 40)	90 (n = 50)	87 (n = 90)

<i>Panel 2A</i> <i>North America:</i> <i>Market research case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	45 (n = 101)	69 (n = 99)	52 (n = 200)
	Present	62 (n = 93)	75 (n = 97)	69 (n = 190)
	Totals	54 (n = 194)	72 (n = 196)	60 (n = 390)

**Table 2.** (continued)

<i>Panel 2B</i> <i>Pacific rim:</i> <i>Market research case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	67 (n = 75)	79 (n = 86)	73 (n = 161)
	Present	72 (n = 78)	82 (n = 76)	77 (n = 154)
	Totals	69 (n = 153)	80 (n = 162)	75 (n = 315)

<i>Panel 2C</i> <i>Pakistan:</i> <i>Market research case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	71 (n = 24)	89 (n = 18)	79 (n = 42)
	Present	68 (n = 22)	80 (n = 25)	74 (n = 47)
	Totals	70 (n = 46)	84 (n = 43)	76 (n = 89)

<i>Panel 3A</i> <i>North America:</i> <i>Currency trader case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	44 (n = 99)	60 (n = 101)	52 (n = 200)
	Present	72 (n = 97)	75 (n = 93)	74 (n = 190)
	Totals	58 (n = 196)	68 (n = 194)	63 (n = 390)

<i>Panel 3B</i> <i>Pacific rim:</i> <i>Currency trader case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	51 (n = 86)	65 (n = 75)	58 (n = 161)
	Present	57 (n = 76)	68 (n = 78)	62 (n = 154)
	Totals	54 (n = 162)	67 (n = 153)	60 (n = 315)



**Table 2.** (continued)

<i>Panel 3C</i> <i>Pakistan:</i> <i>Currency trader case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	33 (n = 18)	70 (n = 23)	54 (n = 41)
	Present	56 (n = 25)	64 (n = 22)	60 (n = 47)
	Totals	47 (n = 43)	67 (n = 45)	57 (n = 88)

<i>Panel 4A</i> <i>North America:</i> <i>Bank loan case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	25 (n = 97)	35 (n = 93)	30 (n = 190)
	Present	38 (n = 101)	50 (n = 99)	44 (n = 200)
	Totals	32 (n = 198)	43 (n = 192)	37 (n = 390)

<i>Panel 4B</i> <i>Pacific rim:</i> <i>Bank loan case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	12 (n = 76)	36 (n = 78)	27 (n = 154)
	Present	27 (n = 75)	38 (n = 86)	33 (n = 161)
	Totals	19 (n = 151)	40 (n = 164)	30 (n = 315)

<i>Panel 4C</i> <i>Pakistan:</i> <i>Bank loan case</i>		<i>Framing of do-nothing alternative</i>		<i>Totals</i>
		<i>Neutral</i>	<i>Negative</i>	
Agency conditions	Absent	40 (n = 25)	45 (n = 22)	43 (n = 47)
	Present	13 (n = 24)	56 (n = 18)	31 (n = 42)
	Totals	27 (n = 49)	50 (n = 40)	37 (n = 89)

in each culture grouping who were willing to make the additional investment (escalate) for each of the four vignettes. Comparing the extreme lower right hand cells in each of panels 1-4 of table 2, we see that in all but the currency trader case, the Pakistani managers were most willing to escalate the decision, though in only the software development case is the Pakistani percentage noticeably higher than the other two groups. Interestingly, for the two non-financial decisions, the Pakistani and Asian managers were noticeably more willing to take the risk than were the north American managers, but for the two financial decisions, no clear difference emerged. Clearly, the high uncertainty avoidance of the Pakistan culture is not reflected in a lack of willingness to take risk in these decisions.

### *Intra-culture analysis*

To further examine the validity of agency and prospect theory explanations within each culture, separate chi-squared tests were performed for the agency and framing effect on a case-by-case basis. The results are shown in table 3.

**Table 3. Chi-squared test of framing and agency effects in each culture  
( $\chi^2$ -statistic is Fisher's exact test, one tailed)**

#### **Panel A: Agency effects**

<i>Case</i>	<i>Pakistan</i>	<i>North America</i>	<i>Pacific Rim</i>
1. Software development	$\chi^2 = 0.06, r = \text{n.s.}$	$\chi^2 = 0.34, r = \text{n.s.}$	$\chi^2 = 2.39, r = 0.08$
2. Market research project	$\chi^2 = 0.21, r = \text{n.s.}$	$\chi^2 = 5.67, r = 0.011$	$\chi^2 = 0.62, r = \text{n.s.}$
3. Currency trader	$\chi^2 = 0.31, r = \text{n.s.}$	$\chi^2 = 18.6, r = 0.0000$	$\chi^2 = 0.58, r = \text{n.s.}$
4. Bank loan	$\chi^2 = 1.28, r = \text{n.s.}$	$\chi^2 = 8.40, r = 0.003$	$\chi^2 = 1.49, r = \text{n.s.}$

#### **Panel B: Framing effects**

<i>Case</i>	<i>Pakistan</i>	<i>North America</i>	<i>Pacific Rim</i>
1. Software development	$\chi^2 = 1.08, r = \text{n.s.}$	$\chi^2 = 1.02, r = \text{n.s.}$	$\chi^2 = 4.73, r = 0.020$
2. Market research project	$\chi^2 = 2.47, r = 0.116$	$\chi^2 = 14.6, r = 0.0001$	$\chi^2 = 5.52, r = 0.013$
3. Currency trader	$\chi^2 = 3.64, r = 0.045$	$\chi^2 = 3.58, r = 0.037$	$\chi^2 = 5.22, r = 0.015$
4. Bank loan	$\chi^2 = 5.12, r = 0.020$	$\chi^2 = 5.14, r = 0.015$	$\chi^2 = 16.3, r = 0.0000$

In the north American group (panel A), the proportion of respondents willing to escalate the decision was, as expected, significantly higher in the presence of the agency conditions of asymmetrical information and incentive to shirk, but in only three of the four cases. In the software development case, it appears that in spite of the pre-tests, the agency manipulation failed to create the intended conditions. In the Pacific rim group, the agency effect was small and insignificant in all cases for which

comparisons are valid. Among the Pakistani managers also, no agency effect is present in any of the four cases, consistent with the low individualism score (14) of that culture. These results lead us to reject the null form of hypothesis 2.

To test hypothesis 3, a chi-squared test of the framing effect in each group was performed, and the results are shown in panel B of table 3. In all three groups, the proportion of respondents willing to escalate the decision was significantly higher in the presence of the negative framing of the "do nothing" decisions than in the neutral framing versions in the market research (marginal significance in Pakistan), currency trader, and bank loan decisions. For the software decision, the proportion of managers willing to escalate the commitment in the presence of negative framing is higher in all three groups, but not significantly so in north America and Pakistan. Thus, the effect arising from prospect theory appears to be universal. As an illustration of differences between the magnitudes of the effects in the two cultures, if the framing effect is measured as the difference in percentages between the neutral and negatively-framed sub-samples, in the software project, the effect sizes were 6 (65-59) percentage points for the north American group, 11 (79-68) for the Pacific rim, and 7 (90-83) for Pakistan; for the currency trader, 10, 13, and 20 respectively; and for the bank loan, 11, 21, and 23 respectively. Only in the market research project were the Pacific rim (11) and Pakistan (14) effect sizes smaller than in north America (18).

Finally, given the significant differences between work experience in some countries, particularly Pakistan, (and the extreme skewness of its distribution within each group), it is important to control for possible confounding effects. We do this by including years of work experience (in its natural logarithmic form) in logistical regressions. We ran the following regressions for each case in each group:

$$\text{Decision} = a_0 + b_1 (\text{framing effect}) + b_2 (\text{agency effect}) + b_3 (\text{log experience}) + e$$

where decision, framing effect, and agency effect are all binary variables.

The results are shown in table 4, and essentially confirm the results of the non-parametric tests above. Note that the logistical nature of the regressions prevents direct comparison of the magnitudes of regression coefficients. It is apparent from panels A and C that only framing plays a part in Pakistan and the Pacific rim, while panel B shows that both framing and agency play a significant role in north America. Interestingly, experience plays a greater part in north America than in Pakistan and the Pacific rim, and the only significant experience effect in those countries occurred in the currency trader case, perhaps reflecting the salience of currency trading risks for the more experienced respondents in the wake of the Barings Bank scandal in that country at the time of data collection. Overall, these results support the view that agency has very limited explanatory power in collectivist cultures.

**Table 4. Logistical regression coefficients of decision on agency, framing and culture effects for each case ( $r$  values in parentheses)**

**Panel A: Pakistan sample**

<i>Case</i>	<i>Experience</i>	<i>Framing effect</i>	<i>Agency effect</i>	<i>Model <math>\chi^2</math></i> <i>(significance)</i>
1. Software development	0.024 (n.s.)	0.696 (n.s.)	-0.164 (n.s.)	1.28 (n.s.)
2. Market research project	-0.374 (n.s.)	0.975 (0.084)	0.517 (n.s.)	6.61 (0.085)
3. Currency trader	-0.518 (0.034)	1.13 (0.020)	0.396 (n.s.)	9.38 (0.025)
4. Bank loan	-0.162 (n.s.)	0.930 (0.046)	-0.523 (n.s.)	5.84 (n.s.)

**Panel B: North American sample**

<i>Case</i>	<i>Experience</i>	<i>Framing effect</i>	<i>Agency effect</i>	<i>Model <math>\chi^2</math></i> <i>(significance)</i>
1. Software development	0.052 (n.s.)	0.213 (n.s.)	-0.122 (n.s.)	1.5 (n.s.)
2. Market research project	-0.241 (0.09)	0.833 (0.0001)	0.526 (0.016)	23.1 (0.0000)
3. Currency trader	-0.450 (0.002)	0.434 (0.049)	0.998 (0.0000)	32.7 (0.0000)
4. Bank loan	-0.356 (0.015)	0.499 (0.021)	0.612 (0.005)	19.8 (0.0002)

**Panel C: Pacific rim sample**

<i>Case</i>	<i>Experience</i>	<i>Framing effect</i>	<i>Agency effect</i>	<i>Model <math>\chi^2</math></i> <i>(significance)</i>
1. Software development	0.211 (n.s.)	0.571 (0.029)	-0.397 (n.s.)	8.0 (0.046)
2. Market research project	-0.012 (n.s.)	0.633 (0.018)	0.238 (n.s.)	6.36 (0.095)
3. Currency trader	-0.500 (0.013)	0.487 (0.039)	0.157 (n.s.)	12.1 (0.007)
4. Bank loan	-0.238 (n.s.)	1.05 (0.0001)	0.298 (n.s.)	19.2 (0.0003)

#### IV. DISCUSSION OF RESULTS

The results confirm that, generally, managers from lower uncertainty avoidance cultures were more willing to take risks than those from higher uncertainty avoidance cultures, but this effect is conditional on the nature of the decision. In our results, this effect was stronger in operating decisions with long-term consequences, and very small for financial decisions. This finding is consistent with Zaheer (1995) who found that the definition of acceptable risk in foreign currency trading rooms of multinational banks exhibited little cross-cultural variation. Our results support the first alternate hypothesis.

The results strongly support the notion that agency problems are associated with individualistic, and not collectivist, cultures. Thus, managers anywhere have reason to believe that their subordinates in collectivist cultures will be less likely to act in their own interest than subordinates in individualist cultures such as in north America. This is consistent with the findings of Pratt and Behr (1987) who attributed a lower audit cost in (more collectivist) Switzerland compared to the United States of America, to cultural factors which created higher costs of (self-interested) cheating in that country. An expectation on the part of managers and regulators that employees will not act in their self-interest would also go some way to explaining the relative tardiness of banking authorities in Singapore and corporate management at Daiwa Bank in implementing controls against rogue traders. Gray (1988) suggests that all regulatory and bureaucratic structures are designed to meet the cultural needs and assumptions of a society. In a culture of communal responsibility, it is not surprising that supervisory procedures, either government or corporate, were less likely to anticipate the actions of a rogue individualist in a classic adverse selection situation.

We also found strong framing effects in all three samples. While framing appears to be universal, our results also suggest that it would be a mistake to assume that framing effects are identical across countries. We found framing effects consistent with prospect theory in every single case in all three culture groups, but the differences in the magnitudes of the effects between the cultures are sufficient to warrant further study. At a minimum, the between-culture variability we found should be compared with the within-culture variability found in different north American samples in other research. Thus, while a framing effect appears to be universal, a formal test that its influence on decisions is greater among lower uncertainty avoiding cultures requires a knowledge of the distributional properties of framing effects among samples.

A related question is why the effects are larger in some vignettes than in others. This is true both for the percentage of persons indicating a willingness to commit and the difference in that number under the framing and agency manipulations. For example, why did the bank loan experience the lowest escalation in the absence of framing and agency effects, and the highest increase in escalation in the presence of negative framing and agency conditions in the United States and Asia? Finally, the significance of the experience variable, and its consistent direction in all three groups (more experienced managers were less willing to escalate) suggests that the results of previous studies in which students were used may not be generalized to manager populations.

## V. CONCLUSION

This paper examined decision-making in a cross-cultural framework. Using forced decision behavioural manipulation, it compared decisions made by managers in four simple sunk cost situations where potential for adverse selection and information

framing were manipulated. Managers from Pakistan, Hong Kong, China, Singapore, the United States and Canada participated in the project, and for analysis purposes were divided into Pakistani, Pacific rim and north American groups. Overall, the Pacific rim and Pakistani groups were found to be more willing to take risks than their north American counterparts, and their willingness was unaffected by the agency manipulation, but was affected by negative framing of the decision. The north American group, on the other hand, was responsive to both agency and prospect theory manipulations. For both groups the effect varied by case, and the Pacific rim and Pakistani groups were particularly disposed to escalate operating decisions. Overall, Pakistani managers made decisions more like Confucian than north American managers.

These results have implications for managers of multinational firms. Agency controls typically imposed in north America, such as close monitoring of staff, may be less relevant in Pakistan and the Pacific rim, and other collectivist cultures. However, to counteract the framing effect, the careful presentation of information, and careful training of staff to identify and sensitize them to their framing biases, would seem to be needed everywhere.

From a theoretical perspective, our study indicates that the framing aspect of prospect theory has strong cross-cultural validity, and can explain differences in reactions to sunk cost/escalation of commitment situations. Agency theory, while a good explainer of behaviour in two of the individualistic cultures in which it was originally devised and tested, appears to lack cross-cultural validity. This has some interesting practical implications for supervisory policy and monitoring, especially in the context of the strong pressures for global coverage of risk assessment following the speculative experience of both on and off-balance sheet activities of firms and financial institutions.

On the one hand, if "framing" is a decisive component in the risk-return decisions of managers globally, than some universal norms can be established in order to check excesses or create limits in which this behaviour can take place. For example, the introduction of universal laws on the assessment and evaluation of credit generated risk through the capital adequacy rules of the BIS would be applicable for all countries, especially in the light of off-balance sheet activities of many firms. Thus BIS standards were adopted in the prudential regulations for banks in 1997 in Pakistan, although the country was not a signatory to the Basle Agreement.

At the same time within this overall or general framework it is now recognized that country-specific and/or culture-specific behaviour of managers will lead to the imposition of unnecessary penalties on some (e.g. north America) and liberal concessions to others (e.g. Pacific rim) if the standards are not made more relevant. To some extent this has already happened, with the emphasis having shifted to independent agencies providing the risk ratings based on specific contexts. Thus the risks accepted by Pacific rim managers or the poor record of Pakistani firms in terms of transparency and accountability will be reflected in the ratings received. In

Pakistan's case, at least, the framing effect would suggest to managers that there is a possibility of a bail-out in case of failure, an extension of the "too-big-to-fail" doctrine which may be especially widespread as a result of the size of the public sector. These, in turn, will be in the overall context of both national and global supervision with some universal criteria for managerial risk-taking. This is very relevant, since the restrictiveness (monitoring) which comes with the agency relationship of north American firms, may be absent in family-owned firms in the Pacific rim and Pakistan. This may make a strong case for independent supervision based on universally accepted criteria regarding the protection of shareholders, and yet be administered through more culturally-oriented institutions.

This study is limited by its sample group in terms of countries and by the limited range of case decisions. Given that there was inter-case variability, a different set of cases or countries might elicit different responses. A logical extension would be to replicate the study using new cases in countries with similar cultural profiles to one of the groups used. Countries such as Australia/New Zealand on the individualist side and possibly Malaysia on the collectivist side might provide more information. An alternate strategy would be to move away from the Pacific rim context and examine responses in cultures that are higher on the uncertainty avoidance scale than the US and Canada but continue to be collectivist; examples would be Chile and Mexico in Latin America or Portugal and Greece in Europe. These studies would have the added problem of translation, however. Finally, replacing a single forced decision with a range or scale would allow the utilization of more powerful statistics such as ANOVA. This involves trading the realism of a yes/no decision for a more subjective measure of the respondent's feeling or impression, but the trade-off could be worthwhile.

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