**Defensive and Expansion Responses to Environmental Shocks in China: Interpreting the 2008 Economic Crisis**

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***Abstract***

We tested organizational actions as a result of interpreting the 2008 crisis with a sample of 80 firms in mainland China collected in 2009. Our findings indicate that threat and urgency interpretations positively affect defensive responses, while controllability and feasibility interpretations positively affect expansion responses. Moreover, we find that strategic flexibility and risk-taking orientation moderate the relationships between controllability/feasibility interpretations and expansion responses.

***Keywords***: 2008 economic crisis, strategic issue diagnosis, efficiency, entrepreneurship

An economic crisis can bring fundamental, unpredictable changes in the environment. Such environmental jolts, although often viewed as major threats, also represent potentially beneficial opportunities for firms (e.g., Grewal & Tansuhaj, 2001; Wan & Yiu, 2009). Interpreting the environment as either threats or opportunities (Chattopadhay, Glick, & Huber, 2001; Denison, Dutton, Kahn, & Hart, 1996; Dutton & Jackson, 1987; Thomas, Clark, & Gioia, 1993; Julian & Ofori-Dankwa, 2009; Schneider & De Meyer, 1991) and examining the feasibility or urgency of dealing with the issues (Dutton & Duncan, 1987; Ginsberg & Venkatraman, 1995), firms can respond to an economic crisis in distinct ways, such as initiating internal or external changes (Chattopadhay et al., 2001), taking a defensive approach by reducing operating costs, or taking an offensive approach by expanding into new domains (Sharma, 2000; Tan & See, 2004). Drawing upon insights in the strategic issue diagnosis (SID) literature (e.g., Dutton & Jackson, 1987; Ginsberg & Venkatraman, 1995; Thomas et al., 1993; Julian & Ofori-Dankwa, 2009; Schneider & De Meyer, 1991), our study asks: do interpretations of the macro-level strategic issues lead to defensive or expansion approaches at firms? As well, do contextual factors interact with the interpretations to affect the choice of defensive and expansion responses?

The potential impact of an economic crisis is normally difficult to define, highly uncertain, and subject to multiple interpretations (Meyer, 1982; Schneider & De Meyer, 1991). Such diverse interpretations are likely to lead to different responses, which includes defensive approaches such as absorbing jolts by downsizing (Meyer, 1982), and expansionary approaches such as acquiring other firms (Wan & Yiu, 2009). Researchers have capitalized on many contexts to examine strategic issue interpretations. For example, Chattopadhay et al. (2001) find that events categorized as control-reducing threats or opportunities induce more conservative internally-directed actions than riskier externally-directed actions. Unfortunately, few studies have applied the SID frameworks to examine the broad strategic issues of economic shocks, such as the Asian economic crisis or the 2008 economic crisis, although such crises provide an ideal setting as a natural experiment to study corporate responses (Julian & Ofori-Dankwa, 2009; Marino et al., 2008; Wan & Yiu, 2009).

Moreover, managers tend to be more sensitive to interpretations when they involve threats rather than opportunities (Jackson & Dutton, 1988), yet not all interpretations lead to significant actions (Gilbert, 2006). However, studies which focus on the situational conditions and factors that precipitate firms to take strategic actions have been limited.

The intention of this study is to examine firms' interpretations and the environment in which firms decided to respond to the interpretations in the context of the ongoing worldwide financial crisis by studying defensive and expansion strategies of a sample of 80 firms in mainland China. We argue that the two major SID frameworks, namely the threat-opportunity framework (TO thereafter) and the feasibility-urgency framework (FU thereafter) (Julian & Ofori-Dankwa, 2009), are significant predictors of defensive and expansion responses. Moreover, we apply a configurational approach by highlighting the contextual factors, which interact with organizational interpretations, that affect corporate responses. Specifically, we argue that strategic flexibility (Zahra et al., 2008) and strategic orientation (e.g., Marino et al., 2008) moderate the relationships between strategic interpretations and corporate responses, with the former representing organizational capability of adapting to environmental shocks and the latter designating firms' intention to take bold or conservative moves.

Our study makes several important contributions to the SID literature, answering the call for "more SID research using broad strategic issues given their consistency with scholarly conceptualizations of strategic issues" (Julian & Ofori-Dankwa, 2009: 111). In particular, we extend Julian and Ofori-Dankwa's (2009) comparative analysis of TO and FU frameworks through predicting defensive and expansion approaches.

Moreover, we extend the SID literature by exploring the moderating effects of strategic flexibility and strategic orientation on the connection between interpretations and organizational actions, thereby highlighting a configurational approach and specifying conditions for firms to choose defensive vs. expansion strategies.

Finally, our study is unique in sample and context by studying Chinese firms during the 2008 economic crisis rather than after the crisis. Most research on the SID frameworks studies firms in

developed economies, while our sample covers firms from an emerging economy. Moreover, studying organizational responses after a crisis may lead to inaccurate results, as top managers may not recall their firms' past strategies accurately. In many cases, they tend to reconstruct the past by describing decision process as more systematic and rational than they actually were, and even attributing favorable outcomes to their actions and unfavorable outcomes to uncontrollable forces (Huber & Power, 1985; Golden, 1992). The timing of our research may prevent such potential inaccuracy, thereby offering a unique opportunity to study managerial reaction to a crisis.

The remainder of the article proceeds as follows: first, we review the critical events in the 2008 economic crisis and the impact on Chinese firms. Next, we review the distinct responses firms may employ to deal with economic crises and major frameworks in the SID literature. We also extend the SID literature by exploring the moderating effects of strategic flexibility and strategic orientation on the connection between interpretations and organizational actions. Based on this, we formulate our hypotheses. In addition, we present our research methodology and results. We conclude with our findings and the implications for theory and future research.

## The 2008 ECONOMIC CRISIS AND ITS IMPACT ON CHINA

The current worldwide financial and economic crisis, often viewed as being triggered by the US sub-prime crisis in August 2007 (Gurría, 2008; OECD, 2008), gained momentum in April 2008. (Eichengreen & O'Rourke, 2009) and deepened with the bankruptcy of Lehman Brothers and the federal takeover of Fannie Mae and Freddie Mac in September 2008. The crisis in the US initiated a general credit crisis, diffused internationally by trade flows, capital flows and commodity prices, and finally spread to the real economy. By November 2008, Germany, the UK, the US and other large economies were said to be in recession (Petroleum Economist, 2008). Angel Gurría, OECD Secretary-General, referred to the 2008 economic crisis as "the worst in living memory and the most global ever" (Gurría, 2009).

The global financial crisis started to negatively impact China's exports in the summer of 2008, with factory closures occurring in Southern China. For example, 682 factories had stopped production or closed by November 2008 in Shenzhen, the special economic zone bordering Hong Kong, causing roughly 50,000 job losses (Mitchell, 2008). Until April 2009, Chinese exports had been falling for six months in succession, with the April exports down by 22.6 per cent compared with April 2008 (Anderlini, 2009a). By February 2009, 20 million migrant workers had returned to their homes after losing their jobs (Treble, 2009). As a result of the declining demand and capital inflows into China, many Chinese firms suffered in the economic crisis. The aggregate profits at large Chinese enterprises fell 37.3 per cent in the first two months of 2009 (Anderlini, 2009b). Small businesses, relatively un-cushioned from the impact of the crisis compared with larger firms, suffered even more (Chao & Batson, 2009).

We argue that mainland China provides an appropriate context for testing the SID frameworks. Most current research on strategic issue interpretations has been conducted in developed economies and Western nations, such as the US (e.g., Denison et al., 1996; Julian & Ofori-Dankwa, 2009) and Germany (e.g., Plambeck & Webber, 2010). Given the significant impact of cultural variations on strategic issue interpretations (Barr & Glynn, 2004) and the major difference between emerging and developed economies (Ahlstrom & Bruton, 2004; Hoskisson, Eden, Lau, & Wright, 2000; Marino et al., 2008; Wright, Filatotchev, Hoskisson, & Peng, 2005), mainland China provides a clearly different research context with a set of non-Western cultural values, thereby offering the opportunity to assess the existing models and test their generalizability in a unique context.

Moreover, the dynamic conditions of mainland China during the 2008-2009 economic crisis forced Chinese managers to evaluate the environment and adopt rapid changes. Given that the slowdown of the Chinese economy is mainly due to the decline in foreign demand for Chinese products (Morrison, 2009), the relative separation between Chinese firms and end-product markets in foreign countries indicates that the crisis may bring disruptive changes to Chinese firms. Considerable uncertainty, especially rapid changes of governmental policies to deal with the crisis (e.g., Naudé, 2009) and significant impact of the political institutions in an emerging economy like China (e.g., Child & Tsai,

2005; Luo & Rui, 2009) suggests that Chinese firms must contend with the significant uncertainty brought by both the crisis and the changing governmental policies.

Chinese firms have applied diverse approaches during the crisis. Common approaches include closing plants, firing workers, and adjusting wages and other costs. Some firms tried to avoid laying off employees because of potential future costs to hire and train new employees in the near future. Other firms, like Ningbo-based Auspicious Plastic Co., not only bought advanced injection presses to upgrade manufacturing capability, but also tried to improve its design and attend more trade fairs to open new markets (Toloken, 2008). Some firms quickly switched to new products and new markets, or started to invest in new markets. For example, Duolilong (H.K.) Industrial Co., based in Shenzhen, recently released a new line of energy-saving power tools (Chao & Batson, 2009). Some companies have started to invest in new, environmental markets to make bio-based or biodegradable products (Toloken, 2008). Thus, our focus is to ascertain from a theoretical and empirical basis, how Chinese firms in general will react to this major economic crisis.

## CORPORATE RESPONSES TO AN ECONOMIC CRISIS

Firms must manage and survive economic crises through exploiting their resources and quickly utilizing different responses. Such responses may involve multiple dimensions, such as internal versus external responses (Chattopadhay et al., 2001), centralizing control over the managerial processes (Prechel, 1994), and forming non-equity or equity alliances (Marino et al., 2008). Recently, Tan & See (2004) categorized corporate responses to the Asian economic crisis into two types, namely the offensive reorientation and the defensive shift. The former is expansionary in nature and intends to enter new domains, while the latter is contractionary through efficiency improvement or staffing reduction. Following the advice from literature on organizational actions in an economic crisis (e.g., Tan & See, 2004), we emphasize defensive and expansion responses rather than the traditional internal/external responses.

We include both the SID theoretical framework and research on strategic flexibility and strategic orientations within our model to predict defensive and expansion responses. The hypotheses and arguments are summarized in the research model illustrated in Figure 1. H1a and H1b are based on the TO framework, and H2a and H2b are based on the FU framework. H3a, H3b, and H3c investigate three-way interaction terms between controllability/opportunity/feasibility, strategic orientation, and strategic flexibility.

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**Strategic Issue Diagnosis: TO and FU Frameworks**

Strategic issues refer to events which have a potential impact on the organization's strategy and performance (Dutton & Duncan, 1987; Schneider & de Meyer, 1991). The research stream of strategic issue diagnosis (SID) argues that top managers take actions to deal with environmental changes, based on the interpretations of strategic issues such as threats and opportunities. The framework has been useful in examining different organizational actions responding to environmental changes (e.g., Chattopadhay et al., 2001; Sharma, 2000).

Two prominent SID frameworks (Julian & Ofori-Dankwa, 2009) which have been applied extensively in the literature are the threat-opportunity (TO) framework (Dutton & Jackson, 1987; Thomas et al., 1993) and the feasibility-urgency (FU) framework (Dutton & Duncan, 1987; Ginsberg & Venkatraman, 1992, 1995). Recently, Julian and Ofori-Dankwa (2009) applied these frameworks to examine interpretations of economic uncertainty in the first half of 2003 in the US, compared the strengths of the two models, and combined the two models to build an integrated model. Following both the SID literature and the recent extension of Julian and Ofori-Dankwa (2009), we argue that both TO and FU frameworks can be applied to investigate firm responses to the economic crisis in China.

*The TO Framework*

The TO framework (e.g., Dutton & Jackson, 1987; Jackson & Dutton, 1988; Staw, Sandelands, & Dutton, 1981) suggests that individuals use cognitive categories and linguistic labels to organize the world, such as describing types of animals in the natural world. Specifically, top managers appear to categorize many environmental issues as either "threats" or "opportunities" (e.g., Chattopadhay et al., 2001), which incur different decision making processes and organizational actions.

Three dimensions, namely positive/negative, gain/loss, and controllable/uncontrollable, underlie the threat/opportunity categorization (Jackson & Dutton, 1988; Thomas et al., 1993). The "opportunity" label refers to "a *positive* situation in which *gain* is likely and over which one has a fair amount of *control*", while the "threat" label implies "a *negative* situation in which *loss* is likely and over which one has relatively little *control*" (Dutton & Jackson, 1987: 80). However, extant literature treats the three dimensions and the two categorizations differently. For example, some measure threat and opportunity as two ends of a single dimension (Fombrun & Zajac, 1987; Ginsberg & Venkatraman, 1992; Thomas & McDaniel, 1990); some maintain that threat and opportunity are distinct and represent different dimensions (Jackson & Dutton, 1988); and others include dimensions of threat, opportunity, and controllability/capability (Denison et al., 1996; Anderson & Nichols, 2007). Given the inconsistencies in the literature, we run a factor analysis to decide if we will treat threat and opportunity as two ends of a single dimension or two distinct dimensions.

Interpreting strategic issues as threat, opportunity or controllability has been found to affect organizational actions, although current findings are still inconclusive (e.g., Chattopadhay et al., 2001; Sharma, 2000; Thomas et al., 1993). For example, Thomas et al. (1993) do not find any linkage between the positive-gain dimension of strategic issue interpretation and organizational actions, although their research indicates a positive relationship between controllability and product-service changes. On the contrary, Sharma's (2000) finding supports the positive relationship between opportunity interpretations and voluntary environmental strategies.

In the context of a macro-level economic crisis, we argue that threat interpretations will result in defensive organizational responses. Given the tremendous amount of uncertainty and instability produced

by an economic crisis, firms which perceive potential losses in the current domain are likely to choose easier, more immediate responses, i.e., defending its current domain by improving efficiency, reducing administrative costs, or centralizing control. For example, the organizational turnaround literature (e.g., Ahlstrom & Bruton, 2004; Bruton et al., 2001) proposes that firms faced with a performance decline tend to apply the retrenchment strategy in the first stage for the purpose of "deliberate reductions in costs, assets, products, product lines, and overhead" (Pearce II & Robbins, 1993: 614; Robbins & Pearce II, 1992). Dutton and Jackson (1987) also argue that threat-induced responses tend to be attempts to control existing resources rather than develop new alternatives.

H1a: Interpreting an economic crisis as a threat has a positive effect on the defensive responses of the firm.

Second, controllability interpretation of an economic crisis may have a positive impact on expansion strategies. Controllability indicates the extent to which a firm has the managerial capability or resources to deal with environmental changes (Thomas et al., 1993). Following Thomas et al. (1993) who find that interpreting strategic issues as controllable positively affects product-service changes, we argue that controllability interpretations indicate that firms can manage the situation, thereby being more likely to commit resources to either strategic changes or alternative routes. If top managers feel that they cannot control the impact of a crisis, they may have to be more focused on the current domains, leaving little room or attention for new business activities. A similar argument has also been proposed in Tan and See (2004).

H1b: Interpreting an economic crisis as controllable has a positive effect on the expansion responses of the firm.

Finally, although it seems to be intuitive to propose that opportunity interpretations result in expansion responses as opportunity promotes the willingness to adapt, most current empirical research (e.g., Chattopadhay et al., 2001; Thomas et al., 1993) does not find support for the linkage between opportunity interpretations and subsequent organizational actions. Very recently, Julian and Ofori-Dankwa (2009) find that opportunity interpretations are strongly and significantly associated with

intended external/internal actions, but only weakly associated with actual external actions and insignificantly with actual internal actions. The rationale for the insignificant findings includes managers' insensitivity to opportunities compared with threats (Jackson & Dutton, 1988) and the lack of significant performance gaps to trigger significant actions (Gilbert, 2006). Further, the generation of new ideas, rather than opportunity-framing, drives organizational responses (Chattopadhay et al., 2001). Therefore, we do not propose any relationship between opportunity interpretations and expansion strategies.

*The FU Framework*

The feasibility-urgency (FU) framework requires a more thorough process of decision making than the TO framework since the process requires much more effort in assessing the options (Dutton & Duncan, 1987; Julian & Ofori-Dankwa, 2008). The FU framework proposes that top managers assess strategic issues by applying two dimensions, namely urgency and feasibility. The results of the assessment affect the magnitude and type of change which an issue triggers. The dimension of urgency "captures the *perceived importance* of taking action on an issue" (Dutton & Duncan, 1987: 283) and the perceived cost of not taking an action. Assessment of urgency depends on the saliency of an issue, perceived time pressure, visibility of an issue, and judgment of decision makers' responsibilities for the occurrence of the issue. The second dimension, feasibility, reflects top managers' judgment about the possibility of resolving an issue (Dutton & Duncan, 1987; Ginsberg & Venkatraman, 1995). Evaluation of feasibility involves the judgment of issue understandability and issue capability, with the former capturing the extent to which decision makers can identify the means for resolving the issue and the latter indicating the extent to which the means for resolving issues are available and accessible.

In the context of a macro economic crisis, issue urgency is more likely to lead to defensive strategies. Dutton and Duncan (1987) propose that the more threatening an issue is to the survival of an organization, the greater the perceived urgency. Given the time pressure of an issue, firms may not be well prepared to launch new products, especially when exploiting practices like more aggressive marketing; thus, efficiency improvement seems to be much easier. Moreover, top managers with the

assumed responsibility of defending the firm may feel obliged to defend their businesses by applying domain-defense strategies.

H2a: Interpreting an economic crisis as an urgent issue has a positive effect on the defensive responses of the firm.

Contrary to issue urgency, issue feasibility is more likely to lead to expansion strategies. Dutton and Duncan (1987) suggest that the more top managers perceive that they understand an issue and that the firm has the capability to deal with the issue, the greater top managers will conceive radical changes to resolve the issue. There are, however, limited empirical results shown by Julian and Ofori-Dankwa (2009) that found feasibility interpretations are significantly and negatively associated with actual external actions, yet insignificantly with either actual internal actions or intended external/internal actions. These mixed results, we argue, require further study. Thus, we argue the importance of using Dutton and Duncan theoretical framework.

If a firm perceives it has the necessary resources to minimize the effects of a macro economic crisis, it may redirect some managerial attention from current endeavors, and apply such attention to search for new opportunities. This increased managerial attention will provide the basis for the firm to go forward with strategic expansions, if there are the necessary resources to do so. Thus, we hypothesize:

H2b: Interpreting an economic crisis as a feasible issue has a positive effect on the expansion responses of the firm.

**A Configurational Perspective on Interpretations and Expansion Responses to an Economic Crisis**

Although the SID frameworks have been applied to investigate various organizational actions, we argue that studying multivariate configurations of interpretations and other important constructs may provide a more complete understanding of the interpretation-response relationship than focusing just on the bivariate models. One reason is that there have been mixed results in SID, which could suggest interaction models would be more fruitful, since in an economic crisis firms engage in complex processes

necessary to ensure that they are comfortable with their strategic action. Thus, crisis management literature is more likely to be broadened by a multifaceted interaction model than by a simple bivariate equation.

Expansion strategies rely not only on the framing of opportunity, controllability, and feasibility, but also the availability of related resources. Although the interpretations of opportunity, controllability, and feasibility indicate that top managers understand an issue, have the necessary resources to deal with it, and are willing to adapt, pursuing expansion strategies may require at least two influences. First, firms need to have a certain type of mindset to guide them towards the direction of expansion strategies. A risk-taking firm tends to choose bolder approaches, while a more conservative firm is likely to choose defensive approaches in the face of an economic crisis (e.g., Marino et al., 2008; Tan & See, 2004). Such strategic orientations may influence the choice of corporate responses. Second, firms need to be strategically flexible to pursue expansion strategies. The ability to take actions in response to environmental change (Buckley, 1997), namely strategic flexibility, may be the second crucial factor facilitating the pursuit of expansion strategies. We thus propose a three-way interaction between interpretations, firms' strategic orientation, and strategic flexibility.

Our focus, however, is not on predicting three way interactions with the interpretations-defensive responses relationship. Defensive responses depend upon either threat or urgency interpretations. A threat is likely to incur a loss and jeopardize the survival of a firm, and top managers are unlikely to have much excuse for not taking action. A threat is more likely to be considered urgent, and urgent and threatening issues tend to demand more immediate actions. We argue that defensive responses are contractionary in nature and do not demand the availability of additional resources. Therefore, we do not view contextual factors, such as strategic (risk taking) orientation and strategic flexibility, as crucial moderators, although for exploratory purposes, we include the interactions between threat/urgency interpretations, strategic orientation, and strategic flexibility to predict defensive responses.

*Strategic Orientations*

Further exploration of organizational responses to a macro-level economic crisis requires attention to a firm's strategic orientation (e.g., Marino et al., 2008). Two relevant strategies in economic crisis include "efficiency" and "entrepreneurial" strategic moves (Tan & See, 2004). The defensive strategy is essentially of an "efficiency" nature, typically involving plant closure, disposal of assets, and cutbacks in functional areas such as R&D, marketing, and administration. In contrast, the expansion shift involves higher risk and is "entrepreneurial" in nature, with attempts to introduce new products, enter new markets, and shift to more lucrative niches.

Firms with distinct strategic orientations may choose different approaches to deal with environmental uncertainty and ambiguity (e.g., Covin & Slevin, 1989; Miles & Snow, 1978). For example, firms emphasizing a conservative strategic posture are unlikely to switch to extensive domain expansions when faced with an economic crisis, while firms with a more risk-taking strategic posture may be more tolerant of perceived uncertainty of undertaking new alternatives in an economic crisis. Here, we highlight two quite distinct strategic orientations, namely efficiency orientation and risk-taking orientation, as the two orientations largely represent two extreme strategic postures.

*Strategic Flexibility*

Management literature (e.g., Grewal & Tansuhaj, 2001; Zahra et al., 2008) has recognized the importance of strategic flexibility for firms to react to opportunities and threats in their competitive environments, especially when the environment is continuously innovative, intensely competitive, and significantly uncertain, such as the environment of high technology industries (Evans, 1991) and the macro condition of an economic crisis (Grewal & Tansuhaj, 2001).

For example, Shimizu and Hitt (2004) argue that managers and firms should develop the capability of strategic flexibility to respond to problems speedily, defining strategic flexibility as "an organization's capability to identify major changes in the external environment (e.g., introduction of disruptive technologies), to quickly commit resources to new courses of action in response to change, and to recognize and act promptly when it is time to halt or reverse such resource commitments" (Shimizu & Hitt, 2004: 45).

In the case of a macro-economic crisis, Grewal and Tansuhaj (2001) find that strategic flexibility helps firms to navigate their way out of economic crises and positively affect organizational performance after the crises, as firms with high levels of strategic flexibility are more capable of correcting past mistakes, guarding against unforeseen competitive moves, and adapting to uncertainties caused by the crisis.

*Interactions among Interpretations, Strategic Orientations, and Strategic Flexibility*

Although the above literature has suggested the importance of interpretations, strategic orientations, and strategic flexibility in responding to an economic crisis, extant research has not paid much attention to their combinative outcomes. We argue that a configurational approach of studying the effects of the three groups of variables may bring a better understanding of the relationship between interpretations and expansion responses to an economic crisis.

Firms with a risk-taking orientation may take expansion approaches, rather than defensive approaches, to respond to an economic crisis. These firms are more likely to come up with innovations, undertake risky new ventures, and expand into new domains (e.g., Miller, 1983). Faced with a macro economic crisis, firms which view the crisis as a controllable or feasible opportunity, and which are willing to take risks, are more likely to respond to environmental uncertainty with bold moves. For example, entrepreneurial firms have been found to show higher strategic alliance intentions after an environmental shock (Marino et al., 2008), demonstrating that firms more tolerant of risks tend to pursue opportunities for expansion, such as strategic alliances. As well, firms that are willing to adjust to their environment (feasibility) and are risk-taking will pursue expansionary strategies. A reason would be that firms' ability to be agile provides a more sure foundation when associated with risk-taking to pursue quicker decisions. Finally, firms that are more apt to interpret changes in the environment as an opportunity, combined with risk-taking tendencies will certainly engage in expansionary strategies due to growth-oriented culture associated with firms that have an opportunistic and entrepreneurial perspective.

Besides interpretations of opportunity, controllability, and feasibility on the one hand and a risk taking orientation on the other, having the capability of taking actions, namely strategic flexibility in this

case, is also important for expansion responses to an economic crisis. Firms with high levels of strategic flexibility may be able to identify the impact of crises, modify their obsolete strategies or design appropriate tactics, and commit resources to the chosen approach. An example is opportunity interpretations. Opportunity promotes flexibility and willingness to adapt, but it does not trigger significant actions because of the lack of significant performance gaps (Gilbert, 2006) or insensitivity to opportunity framing by top managers (Jackson & Dutton, 1988). However, a risk-taking orientation and strategic flexibility may help the firm to pursue the opportunities, as a firm with higher risk taking orientation is able to bear higher risks associated with new opportunities, thereby being intentionally prepared to adopt expansion approaches. Moreover, armed with strategic flexibility, the firm is able to modify its competitive profile, adapt rapidly to major changes in the environment, and make a dynamic adjustment. As a result, the three-way interaction between opportunity interpretations, risk-taking orientation, and strategic flexibility will promote the adoption of expansion strategies. The same logic applies to the interpretations of controllability and feasibility.

Therefore, we propose that there is a three-way interaction among certain types of interpretations, risk taking orientation, and strategic flexibility in affecting expansion strategies. When firms are both risk taking and strategically flexible, interpreting an economic crisis as an opportunity, controllable, or feasible has the highest level of impact on expansion strategies.

H3a: There is a three-way interaction between opportunity interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies: when risk taking orientation and strategic flexibility are both high, opportunity interpretations have the strongest relationship with expansion strategies; and expansion strategies are expected to be highest when opportunity interpretations, risk taking orientation, and strategic flexibility are all high.

H3b: There is a three-way interaction between controllability interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies: when risk taking orientation and strategic flexibility are both high, controllability interpretations have the strongest relationship with

expansion strategies; and expansion strategies are expected to be highest when controllability interpretations, risk taking orientation, and strategic flexibility are all high.

H3c: There is a three-way interaction between feasibility interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies: when risk taking orientation and strategic flexibility are both high, feasibility interpretations have the strongest relationship with expansion strategies; and expansion strategies are expected to be highest when feasibility interpretations, risk taking orientation, and strategic flexibility are all high.

## RESEARCH METHODOLOGY

We focused on firms in mainland China and collected data via surveys from senior managers participating in executive MBA programs at two major universities in Shanghai, China. As an emerging economy, China is a well-suited location for us to examine our research questions. Moreover, the time frame of data collection -- 2009 -- was also ideal because Chinese firms had had some time to gauge the impact of the global economic crisis and to determine corporate responses to the crisis.

We decided to survey EMBA students at two Chinese universities mainly to increase the response rate and to gain timely knowledge of firms' activities while experiencing the ongoing economic crisis. Doing survey research in China is very difficult, mainly due to distrust of researchers and unfamiliarity with questionnaire surveys (Brouthers & Xu, 2002; Hoskisson et al., 2000; Roy et al., 2001). Mail surveys (Isobe, Makino, & Montgomery , 2000) and mail surveys with rounds of phone, fax, and personal follow-ups (Peng & Luo, 2000) yield relatively low response rates, varying from 14.4% (Isobe et al., 2000) to 31.75% (Peng & Luo, 2000). In our case, earlier interactions of one of the authors with the two universities built familiarity and trust with the EMBA programs at the two universities, thereby increasing the possibility of getting a higher response rate and more accurate responses. Moreover, surveying EMBA students in 2009 gives us immediate information about firms' behavior in the economic crisis.

We designed the questionnaire through a two-stage process. First, we designed all items from the extant literature and sent it for review by two academics. Second, after a revision of the English version,

the questionnaire was translated into Chinese by a bilingual and native Chinese speaker, and then translated back into English by a bilingual, native English speaker. The original and final English and Chinese versions were then compared and reviewed by another bilingual researcher. Discrepancies were then resolved and revised by the translators to ensure that there were no misinterpretations arising from translation errors (Roy et al., 2001).

We distributed the survey, both in the paper format and web format, to the 178 senior managers and obtained 115 responses, of which 113 were complete and usable. We compared responses from the two universities in the age of the firm and number of employees, and there was no statistical difference in the means. All respondents were senior Chinese managers, with 80 of them (71%) at the level of vice president or above and the others as departmental managers. As middle managers may not have sufficient knowledge of major decisions at the firm level and may not qualify as informants, we only kept responses from top managers in the final sample. The final sample therefore consists of 80 Chinese firms, with a response rate of 44.9%. The firms are from many different industries, with the largest firms hiring around 20,000 employees and the smallest firms employing around a dozen.

Our study uses data from single key informants, which may raise the issue of response accuracy and common method bias. To avoid common method bias in our data, we randomized the ordering of scale items and reverse coded some items so that the sequence of responses did not always run from negative to positive. Following Podsakoff and Organ (1986), we also inspected the extent of common method bias in the data by applying the Harman's one-factor test. The unrotated factor analysis showed six factors with eigenvalues greater than 1.0, with the first factor accounting for only 14.72% of the variance and the nine factors together accounting for 69.68% of the total variance. The presence of several distinct factors combined with the relatively low amount of variance explained by the first factor indicated the absence of a problematic level of common method variance in the data set (Podsakoff & Organ, 1986). Moreover, complex data relationships such as the predicted interaction effects suggest that common method bias is unlikely, as respondents would normally not be capable of guessing the interaction hypothesis (e.g., Slater & Atuahene-Gima, 2004).

**Methods**

We used hierarchical moderated regression analysis to test all the hypotheses, standardizing the independent variables before creating interaction terms (Cohen & Cohen, 1983). Hierarchical regression analysis allows us to compare alternative models with and without interaction terms. An interaction effect only exists if the interaction term contributes significantly to the variance explained in the dependent variable over the main effects of the independent variables. For all models, we used several regression diagnostics to assess whether modeling assumptions were satisfied. We conducted a Kolmogorov-Smirnov test to check for normality, which supported the univariate normality assumption. In addition, the variance inflation factors (VIF) is below the common cutoff threshold of 10 and indicating that multicollinearity is not a problem (Hair, Anderson, Tatham, & Black, 1998: 193).

Our analyses include four equations:

*Equation 1 (based on TO)*: defensive responses = control variables (risk-taking orientation, efficiency orientation, strategic flexibility) + IVs (threat, opportunity, controllability) + two-way interactions (threat*efficiency orientation, threat*strategic flexibility, efficiency orientation*strategic flexibility) + three-way interaction (threat*efficiency orientation*strategic flexibility)

*Equation 2 (based on TO)*: expansion responses = control variables (risk taking orientation, efficiency orientation, strategic flexibility) + IVs (threat, opportunity, controllability) + two-way interactions (opportunity/controllability*risk-taking orientation, opportunity/controllability *strategic flexibility, risk-taking orientation*strategic flexibility) + three-way interaction (opportunity/controllability *risk-taking orientation*strategic flexibility)

*Equation 3 (based on FU)*: defensive responses = control variables (risk taking orientation, efficiency orientation, strategic flexibility) + IVs (urgency, feasibility) + two-way interactions (urgency*efficiency orientation, urgency*strategic flexibility, efficiency orientation*strategic flexibility) + three-way interaction (urgency*efficiency orientation*strategic flexibility)

*Equation 4 (based on FU)*: expansion responses = control variables (risk taking orientation, efficiency orientation, strategic flexibility) + IVs (urgency, feasibility) + two-way interactions (feasibility

*risk-taking orientation, feasibility *strategic flexibility, risk-taking orientation*strategic flexibility) + three-way interactions (feasibility*risk-taking orientation*strategic flexibility)

For each equation, we followed the steps below. In the first step, we entered the control variables. In the second step, we added IVs to examine the main effects. In the third step, we included all the two-way interactions between interpretations, strategic orientation, and strategic flexibility. Finally, we include the three-way interaction between interpretations, strategic orientation, and strategic flexibility.

**Measures**

In Table 1, we list the measures, their associated alphas, and the sources of the scales. All items in Table 1 are based on a 10-point likert scale. All items were derived from previously established scales, and we used a shortened format by choosing the items with the highest loadings whenever possible, with the intention of reducing the length of the questionnaire for a higher response rate. Similar methods of using the best-indicator approach in survey research in mainland China (e.g., Branzei et al., 2004) have produced reliable results. We also ran supplementary test with the larger sample of 113 responses including middle level managers and the analysis produced similar results, which further increased our confidence in terms of the accuracy of the findings.

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Insert Table 1 about here

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*Dependent Variables*

**Defensive responses and expansion responses**. To capture two distinct types of responses, we selected items from Robbins and Pearce II (1992) and Barker III and Duhaime (1997), both of which have documented detailed management actions, including efficiency maintenance and expansions.

*Independent Variables*

**Threat, opportunity, and controllability**. Based on the 15 items in Thomas et al. (1993), we selected 8 items based on the highest loadings in Anderson and Nichols (2007), with 3 items for threat, 2 for opportunity, and 3 for controllability. We ran an EFA with the 5 items for threat and opportunity,

which resulted in two factors. One item for opportunity loaded highly with the 3 items for threat, leaving the fifth item for opportunity. We suspected that the meanings of "positive" and "gain", when translated into Chinese, may be quite distinct, as "gain" indicates financial benefits in Chinese while "positive" involves some ambiguity. Therefore, we removed the "positive" item, and measured threat and opportunity as two ends of a single dimension of Positive-Gain, which consisted of 4 items. Treating threat and opportunity as two ends of the single dimension of positive-gain is consistent with Fombrun & Zajac (1987), Ginsberg & Venkatraman (1992), and Thomas & McDaniel, (1990).

**Feasibility and urgency**. We used 2 items to measure feasibility, with the items derived from Ginsberg and Vankatraman (1995) and Denison et al. (1996), respectively. The 2 items applied to measure urgency were derived from Ginsberg and Vankatraman (1995) and Dutton and Duncan (1987).

*Control variables*

We included three control variables to ensure appropriate model specification. We also considered including several other firm-level variables such as firm size, measured as a log transformation of the number of full-time employees; firm age, measured as a log transformation of the number of years the firm has been in business; and the firm's past performance (Song, Droge, Hanvanich, & Calantone, 2008). None of these variables had any effects, and considering the number of constructs in our analyses and the relatively small sample size, we decided to drop them in the final analyses.

**Strategic flexibility**. We measure strategic flexibility with three items derived from Zahra et al. (2008).

**Efficiency orientation**. We measured efficiency orientation by deriving 2 items from Rajagopalan (1997) and Weaver, Trevino, & Cochran (1999).

**Risk-taking orientation**. Drawing on the established scales in Miller (1983) and De Clercq, Dimov, and Thongpapanl (2009), we selected one item with the highest loading in De Clercq et al. (2009) to measure risk-taking.

**Results**

Variables, standard deviations for each variables, and zero-order correlations are shown in Table 2. Tables 3 and 4 present the results of the hierarchical regression analysis. Table 3 includes three groups of models based on the TO framework, with models in Group 1 based on Equation 1 investigating defensive responses and those in Group 2 and 3 based on Equation 2 examining expansion responses. Table 4 consists of two groups of models based on the FU framework, with models in Group 4 investigating defensive responses and those in Group 5 examining expansion responses. Within each group of models, the first model includes the control variables; the second model adds the independent variables; the third model adds the two-way interaction terms; and the last model adds the three-way interaction term.

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Insert Tables 2, 3 and 4 about here

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Hypothesis 1a predicts a positive relationship between threat interpretation and corporate defensive responses. As shown in Model 2 in Table 3, positive-gain is negatively related to defensive responses ($p < .001$), which indicates that negative and loss interpretations, namely threat, are positively related to defensive responses. H1b proposes the effect of controllability interpretations on expansion responses. As shown in Model 6, there is a significant positive relationship between controllability interpretation and expansion responses ($p < .01$). It should also be noted that there is no significant relationship between opportunity interpretations and expansion responses (see Model 6).

Hypothesis 2a proposes a positive relationship between urgency interpretation and defensive responses of the firm. As shown in Model 14 in Table 4, urgency interpretation is positively related to defensive responses ($p < .01$). H2b proposes a positive impact of feasibility interpretations on expansion responses. Model 18 in Table 4 shows a significant positive relationship between feasibility interpretations and expansion responses ($p < .05$). Therefore, our results support H2a and H2b.

H3a predicts a three way interaction between opportunity interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies. In Group 3 models in Table 3, neither Model

11 nor Model 12 adds significant explanatory power than Model 10, suggesting that neither two-way nor three-way interaction terms between opportunity interpretations, risk taking orientation, and strategic flexibility are significant predictors of expansion responses. Therefore, H3a is not supported.

H3b predicts a three-way interaction between controllability interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies. In Group 2 models in Table 3, Model 8 contributes significantly to the variance explained in expansion responses over the main effects and the two-way interaction terms, thereby providing support to H3b.

H3c predicts a three-way interaction between feasibility interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies. In Group 5 models in Table 4, Model 20 contributes significantly to the variance explained in expansion responses over the main effects and the two-way interaction terms, thereby providing support to H3c.

To advance further interpretations, we plotted the three-way interaction effect between controllability interpretations, strategic flexibility, and risk-taking orientation on expansion responses (see Figure 2). The graph indicates that the relationship between controllability interpretations and expansion responses is most positive when strategic flexibility and risk-taking orientation are both high, thereby supporting the configurational approach that these variables appear to operate jointly in influencing expansion approaches.

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Insert Figure 2 about here

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It should also be noted that none of the two-way interaction effects in predicting expansion responses is significant. As indicated in Model 7 in Group 2 in Table 3, Model 11 in Group 3 in Table 3, and Model 19 in Group 5 in Table 4, none of the models with the two-way interaction terms adds significant explanatory power to the main effects. This finding applies to both TO and FU models.

Finally, we propose that contextual factors, such as efficiency orientation and strategic flexibility, are not important moderators of the relationship between interpretations and defensive responses. As

indicated in Models 3 and 4 in Table 3, and Models 15 and 16 in Table 4, the majority of the two-way and three-way interaction terms are not significant, providing support to the relative insignificance of contextual factors in predicting defensive responses. However, the two-way interaction terms between urgency and efficiency orientation (Model 15) and between efficiency orientation and strategic flexibility (Model 3) are significant predictors of defensive responses.

## DISCUSSION

This study examines SID frameworks in the context of the ongoing worldwide financial crisis which started in 2008 studying defensive and expansion strategies of a sample of 80 firms in mainland China. The findings indicate that both of the two dominant frameworks in the SID literature, namely the TO and FU frameworks, predict defensive and expansion responses to a macro economic crisis. Moreover, we find that strategic flexibility and risk-taking orientation moderate the relationships between controllability/feasibility interpretations and expansion responses. Overall, the findings offer support for components of the TO and FU frameworks as significant determinants of organizational responses to a macro economic crisis and highlight a configurational approach for the analysis of the relationship between expansion responses and their predictors.

First, firms may take either defensive or expansion approaches to respond to an economic crisis, depending on top managers' interpretations. Our findings suggest that threat and urgency interpretations correspond with firms' defensive responses, and controllability and feasibility match with firms' expansion responses. The finding of the insignificant effect of opportunity interpretation on expansion responses is consistent with the theoretical inference of Gilbert (2006) and much current empirical research (e.g., Chattopadhay et al., 2001; Thomas et al., 1993). Threat can trigger organizational responses, but such responses tend to be rigid. In contrast, opportunity framing may provoke search for new alternatives, but it does not push the firm to commit resources because there is a lacking of a performance gap. Though firms seem to be more likely to adopt a defensive response (Tan & See, 2004),

the co-existence of multiple framings may be necessary for firms to survive and even prosper during an economic crisis.

Second, although feasibility and opportunity interpretations are highly correlated ($r=0.419$, $p<0.01$), our finding indicates a positive relationship between feasibility and expansion responses but an insiginificant association between opportunity interpretations and expansion responses. Similar confusing finding can also be found in Julian & Ofori-Dankwa (2009), which supports a positive association between opportunity interpretations and actual external responses but no relationship between feasibility and actual external actions, despite a high correlation between feasibility and opportunity interpretations ($r=0.542$, $p<0.01$). Although opportunity interpretations and feasibility have been entered into different models in empirical research, our findings and the findings of Julian & Ofori-Dankwa (2009) seem to suggest that opportunity interpretations and feasibility, though highly correlated, are still quite distinct constructs. Further empirical research is needed to investigate the dimensions of interpretations.

Third, the significant three-way interaction terms between controllability/feasibility interpretations, risk taking orientation, and strategic flexibility in explaining expansion strategies support the configurational approach. Expansion strategies rely on not only controllability or feasibility interpretations, but also risk-taking orientation and strategic flexibility. Strategic flexibility represents the capability of a firm to take actions, and risk-taking orientation guides the choice of responses, thereby strengthening the impact of controllability/feasibility interpretations on expansion responses. Such multivariate configurational analyses extend the SID frameworks by underlining the contextual factors which facilitate the connection between interpretations and actual organizational actions. However, we do not find the significant impact of the three-way interaction terms between opportunity interpretations, risk-taking orientation, and strategic flexibility, thereby leaving unanswered either the impact of opportunity on subsequent organizational actions or the contextual factors connecting opportunity interpretations and organizational responses.

Fourth, for defensive responses, the insignificance of the majority of either the two-way or three-way interaction terms suggests that contextual factors, such as efficiency orientation and strategic

flexibility, are not important moderators of the relationship between interpretations and defensive responses. The result supports our argument that defensive responses are contractionary in nature and do not demand the availability of additional resources.

A related, interesting finding is the negative correlation and insignificant relationship between efficiency orientation and defensive responses, which may imply that firms with an efficiency orientation may have largely reduced inefficiencies before the economic crisis, thereby leaving little room for further efficiency improvement.

Finally, our findings further extend the current research proposition that flexibility is an important organizational capability to manage an economic crisis (e.g., Grewal & Tansuhaj, 2001; Lee & Makhija, 2009). Similar to the proposition of Grewal and Tansuhaj (2001: 72) that "(s)trategic flexibility represents the organizational ability to manage economic and political risks by promptly responding in a proactive or reactive manner to market threats and opportunities", our results indicate that flexibility can lead to either defensive or expansion responses. In each case, the important message is that flexibility facilitates the pursuit of a specific organizational action, but it does not determine the direction of such actions.

## CONCLUSION

This study examines the impact of top managers' interpretations of a macro-level economic crisis on firms' efficiency and expansion responses. Our findings reveal that the SID frameworks, namely the threat-opportunity analysis and feasibility-urgency analysis, are instrumental in predicting different types of organizational actions during an economic crisis. Our results also support the configurational approach of investigating the three-way interaction effects between issue interpretations, strategic orientation, and strategic flexibility.

The results highlight several fruitful avenues for future exploration. First, future research is needed to validate the underlying dimensions of threat, opportunity, feasibility, and urgency. Julian and Ofori-Dankwa (2008) identify three underlying constructs of favorability, urgency, and influence to integrate the TO and FU approaches. Although our research does not find the same factors because of our

limited number of items, further research can incorporate more items to assess the validity of the new constructs.

Second, our analysis of defensive and expansion responses raises the issue of ambivalent interpretations (e.g., Plambeck & Webber, 2009, 2010) and potential ambidexterity (e.g., He & Wong, 2004; Raisch & Birkinshaw, 2008) during an economic crisis. On the one hand, top managers may interpret strategic issues, such as the impact of an economic crisis, as both positive and negative for the firm (Plambeck & Webber, 2010). Such ambivalent interpretations have been found to increase both the probability of actual organizational actions and the scope of such actions (Plambeck & Webber, 2009). On the other hand, although the low correlation (.102) between defensive and expansion responses indicate that firms in our sample appear to stress either of the two types of responses, they may exploit both approaches simultaneously, in order to survive a major crisis and to plant the seed for future growth. For example, Gilbert (2006) finds that competing frames of threat and opportunity can co-exist within a firm by creating organizationally differentiated units, thereby allowing different organizational actions within the firm. Gilbert's (2006) finding indicates that firms in an economic crisis can apply multiple responses at the same time via different organizational units. Future research can examine the association between ambivalent interpretations and ambidextrous behaviors and whether ambidexterity in an economic crisis affects future performance.

Our study is subject to several limitations. First, we relied on data from single key informants and used single items to measure risk-taking orientation and defensive responses, which may raise the issue of response accuracy, potential common method bias, and measurement validity. Our confidence that the results reflected systematic relationships among the variables was strengthened by the consistency of the main relationships across both TO and FU models, Harman's one-factor test results, and the significance of the three-way interaction term.

Second, we should be cautious in generalizing the results. The convenient sample of EMBA students, in the absence of random or stratified sampling procedures, may indicate that representativeness is an issue. The majority of our respondents participating in EMBA programs came from eastern China,

so the results can be generalized for top managers in coastal China. Our respondents tended to be better educated than the average Chinese managers, which may limit the generalizability of the results to China as a whole. However, since cultural variations significantly affect strategic issue interpretations (Barr & Glynn, 2004), the difference between our sample of Chinese managers and average Chinese managers, compared with the similarity of cultural characteristics, may be relatively trivial. Thus, the results may be representative of Chinese managers and have the potential to be extended to those Asian managers who are Chinese in origin (cf., Grewal & Tansuhaj, 2001). However, some caution may be needed to apply the results before a larger scale validation.

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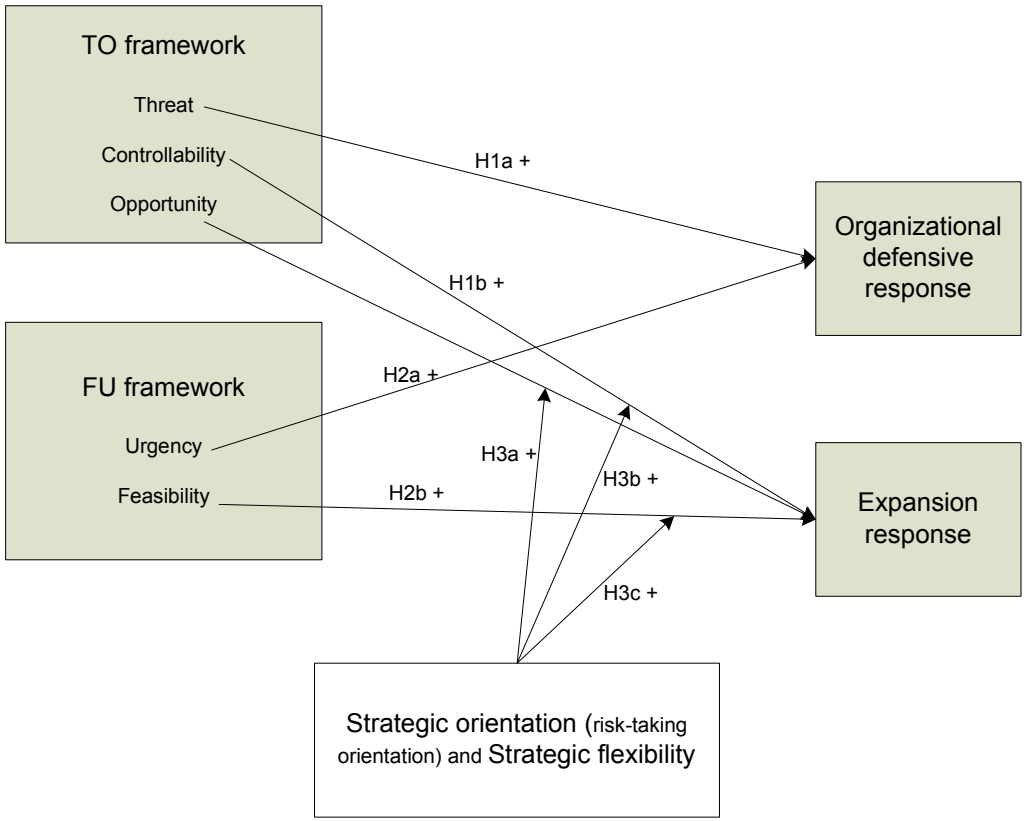


Figure 1. Research Model

**Table 1**
Constructs and Measurement Items

| | Cronbach's alpha | Source |
|---|---|---|
| *Defensive responses* | NA | |
| Primarily efficiency- oriented with belt tightening and streamlining of operations (reduce staff, cut R&D expense, cut expense items such as long distance calls, photocopying) | | Robbins and Pearce II (1992); Barker III and Duhaime (1997) |
| *Expansion responses* | 0.825 | |
| Expanding marketing efforts to new segments of customers and develop an aggressive marketing strategy to increase sales | | Robbins and Pearce II (1992); Barker III and Duhaime (1997) |
| Searching for new possibilities with respect to products/services, processes or markets | | Robbins and Pearce II (1992); Barker III and Duhaime (1997) |
| Increasing the capital available for research on new products or manufacturing processes | | Robbins and Pearce II (1992); Barker III and Duhaime (1997) |
| *Positive-Gain (Threat and opportunity)* | 0.763 | |
| We feel that there is a high probability of losing a great deal[R] | | Thomas et al. (1993); Anderson and Nichols (2007) |
| We label the situation as a potential loss[R] | | Thomas et al. (1993); Anderson and Nichols (2007) |
| We see the situation as having negative implications for the future[R] | | Thomas et al. (1993); Anderson and Nichols (2007) |
| We label the situation as a potential gain | | Thomas et al. (1993); Anderson and Nichols (2007) |
| We label the situation as something positive[a] | | Thomas et al. (1993); Anderson and Nichols (2007) |
| *Controllability* | 0.734 | |
| We feel it has the capability to address the situation | | Thomas et al. (1993); Anderson and Nichols (2007) |
| We feel it can manage the situation instead of the situation managing it | | Thomas et al. (1993); Anderson and Nichols (2007) |
| *Feasibility* | 0.755 | |
| We feel confident that we are aware of all possible response alternatives available to our firm | | Ginsber and Vankatraman (1995) |
| We would be able to manage the situation with our current resources | | Denison et al. (1996) |
| *Urgency* | | |
| The cost of not taking action immediately to deal with the economic crises is very high | | Ginsber and Vankatraman (1995); Dutton and Duncan (1987) |
| To what extent your firm has been affected by the economic crises[a] | | Ginsber and Vankatraman (1995); Dutton and Duncan (1987) |
| *Efficiency orientation* | 0.866 | |
| Reduction of operating costs | | Rajagopalan (1996) |
| Reduction of fixed costs | | Rajagopalan (1996) |
| *Risk-taking orientation* | NA | |
| My company rewards risk taking | | De Clercq et al. (2009); Miller (1983) |
| *Strategic flexibility* | 0.794 | |
| indicate your evaluation of how flexible your business's operations/strategies could be in response to the following events | | |
| Opportunistic shifts in economic conditions | | Zahra et al. (2008) |
| Opportunistic shifts in customer needs and preferences. | | Zahra et al. (2008) |
| The market entry of new competition. | | Zahra et al. (2008) |

[a] Items dropped in regression analysis; [R] Reverse-coded items

**Table 2. Correlation Matrix, Means, and Standard Deviations**

| | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Defensive responses | 5.71 | 2.61 | 1 | .102 | .305** | -.045 | .249* | -.425** | -.178 | -.264* | .428** |
| 2. Expansion responses | 6.85 | 1.95 | .102 | 1 | .341** | .119 | .059 | .086 | .389** | .182 | .027 |
| 3. Strategic flexibilty | 6.66 | 1.82 | .305** | .341** | 1 | .290** | .244* | -.134 | .223* | -.113 | .169 |
| 4. Efficiency orientation | 7.71 | 1.67 | -.045 | .119 | .290** | 1 | -.230* | -.196 | .009 | .000 | .173 |
| 5. Risk-taking orientation | 4.71 | 2.28 | .249* | .059 | .244* | -.230* | 1 | .062 | .153 | .176 | .201 |
| 6. Positve-Gain (threat, opportunity) | 5.95 | 1.96 | -.425** | .086 | -.134 | -.196 | .062 | 1 | .385** | .419** | -.569** |
| 7. Controllability | 6.59 | 1.97 | -.178 | .389** | .223* | .009 | .153 | .385** | 1 | .503** | -.106 |
| 8. Feasibility | 6.13 | 1.95 | -.264* | .182 | -.113 | .000 | .176 | .419** | .503** | 1 | -.210 |
| 9. Urgency | 5.41 | 2.15 | .428** | .027 | .169 | .173 | .201 | -.569** | -.106 | -.210 | 1 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

**Table 3. Results of Regression Analysis (TO Analyses)**

| **Defensive responses (TO analysis)** | | | | |
|---|---|---|---|---|
| | **Group 1** | | | |
| Predictors | Model 1 | Model 2 | Model 3 | Model 4 |
| *Step 1: controls* | | | | |
| Strategic flexibility | 0.294** | 0.280** | 0.269** | 0.260** |
| Efficiency orientation | -0.094 | -0.157 | -0.226** | -0.217† |
| Risk-taking | -0.156 | 0.187 | 0.209** | 0.193† |
| *Step 2: main effects* | | | | |
| Positive-Gain (Threat/opportunity) | | -0.384*** | -0.413*** | -0.401*** |
| Controllability | | -0.121 | -0.080 | -0.072 |
| *Step 3: two-way interactions* | | | | |
| Positive-Gain*Efficiency orientation | | | -0.133 | -0.141 |
| Positive-Gain*Strategic flexibility | | | 0.050 | 0.086 |
| Efficiency orientation * Strategic flexibility | | | -.20† | -0.178† |
| *Step 4: three-way interaction* | | | | |
| Positive-Gain *Efficiency orientation *Strategic flexibility | | | | -0.100 |
| df | (3, 76) | (5, 74) | (8, 71) | (9, 70) |
| Adjusted $R^2$ | 0.098 | 0.278 | 0.306 | 0.305 |
| F | 3.870* | 7.074*** | 5.354*** | 4.857*** |
| $\Delta R^2$ | 0.133 | 0.191 | 0.053 | 0.008 |
| F change | 3.870* | 10.438*** | 2.006 | 0.926 |

| **Expansion responses (TO analysis)** | | | | |
|---|---|---|---|---|
| | **Group 2** | | | |
| Predictors | Model 5 | Model 6 | Model 7 | Model 8 |
| *Step 1: controls* | | | | |
| Strategic flexibility | 0.342** | 0.273* | 0.230* | 0.190 |
| Efficiency orientation | 0.015 | 0.025 | 0.068 | 0.072 |
| Risk-taking | -0.021 | -0.054 | 0.297 | 0.574 |
| *Step 2: main effects* | | | | |
| Positive-Gain (Threat/opportunity) | | 0.001 | -0.004 | 0.020 |
| Controllability | | 0.336** | 0.321** | 0.270* |
| *Step 3: two-way interactions* | | | | |
| Risk-taking*Strategic flexibility | | | -0.341 | -0.678† |
| Controllability*Risk-taking | | | -0.076 | -0.115 |
| Controllability*Strategic flexibility | | | -0.008 | 0.064 |
| *Step 4: three-way interaction* | | | | |
| Controllability *Risk-taking *Strategic flexibility | | | | 0.246† |
| df | (3, 76) | (5, 74) | (8, 71) | (9, 70) |
| Adjusted $R^2$ | 0.083 | 0.171 | 0.157 | 0.189 |
| F | 3.37* | 4.267** | 2.839** | 3.051** |
| $\Delta R^2$ | 0.117 | 0.106 | 0.019 | 0.039 |
| F change | 3.370* | 5.071** | 0.581 | 3.836† |

| **Expansion responses (TO analysis)** | | | | |
|---|---|---|---|---|
| | **Group 3** | | | |
| Predictors | Model 9 | Model 10 | Model 11 | Model 12 |
| *Step 1: controls* | | | | |
| Efficiency orientation | 0.015 | 0.025 | 0.075 | 0.071 |
| Risk-taking | -0.021 | -0.054 | 0.423 | 0.365 |
| Strategic flexibility | 0.342** | 0.273* | 0.240† | 0.216 |
| *Step 2: main effects* | | | | |
| Positive-Gain (Threat/opportunity) | | 0.001 | 0.029 | 0.060 |
| Controllability | | 0.336** | 0.305* | 0.302* |
| *Step 3: two-way interactions* | | | | |
| Positive-Gain*Risk-taking | | | -0.058 | -0.045 |
| Positive-Gain*Strategic flexibility | | | -0.038 | -0.051 |
| Risk-taking*Strategic flexibility | | | -0.488 | -0.443 |
| *Step 4: three-way interaction* | | | | |
| Positive-Gain * Risk-taking * Strategic flexibility | | | | -0.089 |
| df | (3, 76) | (5, 74) | (8, 71) | (9, 70) |
| Adjusted $R^2$ | 0.083 | 0.171 | 0.157 | 0.150 |
| F | 3.37* | 4.267** | 2.835** | 2.554* |
| $\Delta R^2$ | 0.117 | 0.106 | 0.018 | 0.005 |
| F change | 3.370* | 5.071** | 0.572 | 0.476 |

Notes: Standardized coefficients; † p < .10; * p < .05; ** p < .01; *** p < .001. N = 80.

**Table 4. Results of Regression Analysis (FU Analysis)**

| **Defensive responses (FU analysis)** | | | | | **Expansion responses (FU analysis)** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Group 4** | | | | | **Group 5** | | | |
| Predictors | Model 13 | Model 14 | Model 15 | Model 16 | Predictors | Model 17 | Model 18 | Model 19 | Model 20 |
| *Step 1: controls* | | | | | *Step 1: controls* | | | | |
| Strategic flexibility | 0.29* | 0.238* | 0.247* | 0.246* | Efficiency Orientation | .015 | -.023 | .026 | .026 |
| Efficiency orientation | -.094 | -.147 | -.181 | -.180 | Strategic flexibility | 0.342** | 0.393** | 0.332** | 0.298* |
| Risk-taking | .156 | .119 | .121 | .099 | Risk-taking | -.021 | -.094 | .330 | .578 |
| *Step 2: main effects* | | | | | *Step 2: main effects* | | | | |
| Feasibility | | -0.185† | -0.185† | -0.169† | Feasibility | | 0.251* | .118 | .354 |
| Urgency | | 0.35** | 0.314** | 0.316** | Urgency | | .036 | .030 | .032 |
| *Step 3: two-way interactions* | | | | | *Step 3: two-way interactions* | | | | |
| Urgency*Efficiency orientation | | | 0.255* | 0.257* | Feasibility*Risk-taking | | | .096 | .129 |
| Urgency*Strategic flexibility | | | .018 | .008 | Feasibility*Strategic flexibility | | | .153 | -.111 |
| Efficiency orientation * Strategic flexibility | | | -.118 | -.103 | Risk-taking*Strategic flexibility | | | -.416 | -0.728† |
| *Step 4: three-way interaction* | | | | | *Step 4: three-way interaction* | | | | |
| Positive-Gain*Efficiency orientation*Strategic flexibility | | | | -.115 | Feasibility * Risk-taking *Strategic flexibility | | | | 0.241† |
| df | (3, 76) | (5, 74) | (8, 71) | (9, 70) | df | (3, 76) | (5, 74) | (8, 71) | (9, 70) |
| Adjusted $R^2$ | .098 | .260 | .326 | .331 | Adjusted $R^2$ | .083 | .117 | .114 | .143 |
| F | 3.870* | 6.565*** | 5.784*** | 5.337*** | F | 3.37* | 3.092* | 2.265* | 2.47* |
| $\Delta R^2$ | .133 | .175 | .087 | .012 | $\Delta R^2$ | .117 | .055 | .030 | .038 |
| F change | 3.870* | 9.333*** | 3.412* | 1.463 | F change | 3.370* | 2.479† | .906 | 3.481† |

Notes: Standardized coefficients; † p < .10; * p < .05; ** p < .01; *** p < .001. N = 80.

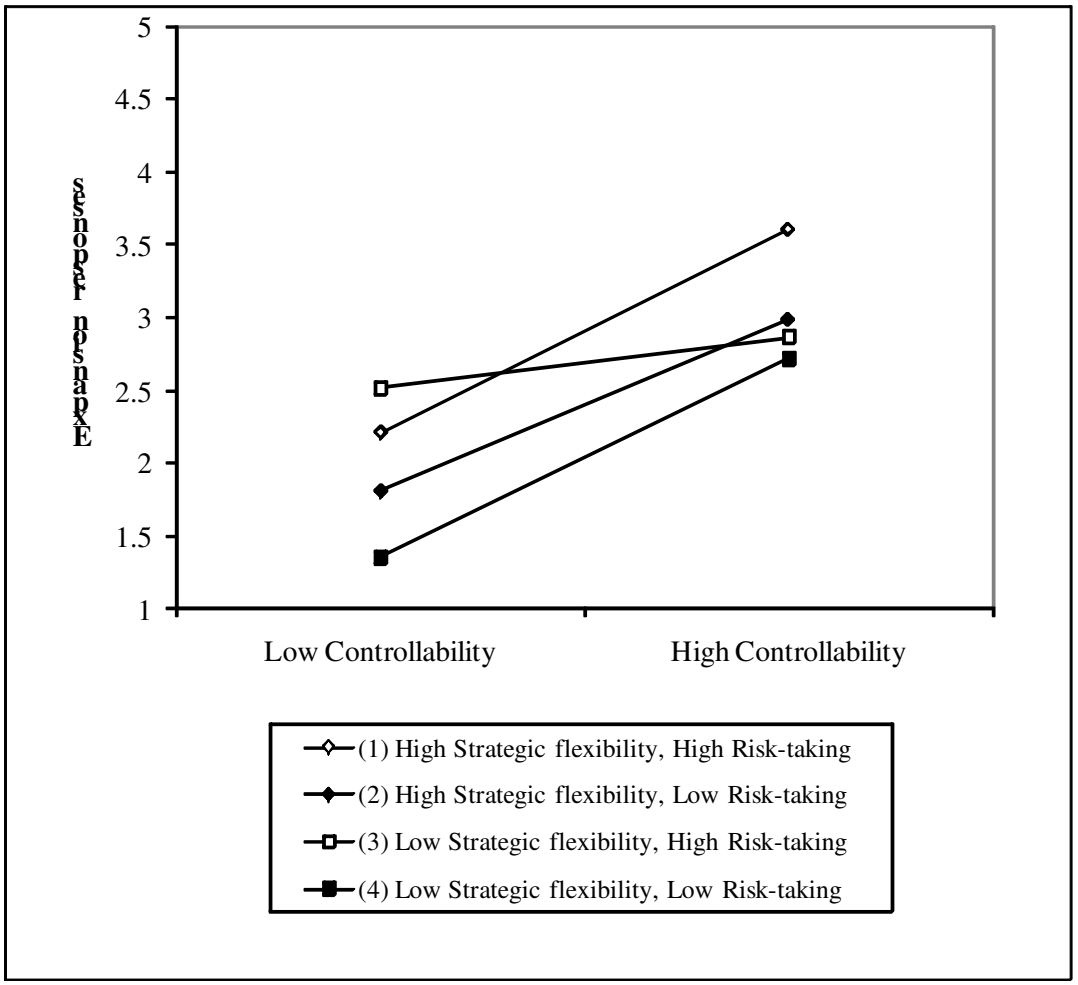


**Figure 2. Interaction Effects between Controllability, Strategic Flexibility, and Risk-taking Orientation**