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Abstract

This study examines the adoption of downsizing during the Asian economic crisis**.** We use data from a large firm-level survey to examine and compare the adoption of downsizing by firms across sectors and across three countries, namely Indonesia, the Philippines, and Thailand. The results show that country effects had a significant impact on the adoption of downsizing during the Asian economic crisis. Also, we found significant differences in the adoption of downsizing across different sectors of activities. The implications of the results for theory and practice are discussed.

Management scholars have long been interested in firms' behaviour during economic crises. The effects brought about by the Asian economic crisis generated an extensive body of research on how firms reacted to the crisis. More recently, a large body of research has looked at the implications of the economic crisis for Human Resources Management (HRM) policies and practices in the affected countries and showed how the crisis transformed power dynamics between firms and employees and altered HRM practices (Zhu, Y. and Fahey, 1999; Zhu and Warner, 2001; Zhu, 2005; Zhu, 2003; Chu and Siu, 2001; Smith and Abdullah, 2004; Lawler and Atmiyanandana, 2004). Surprisingly, although a large number of firms reduced their employment level to absorb the shock of the economic crisis (Lee, Phan, and Tan, 2003), to the best of our knowledge, scholars have not investigated the association between the economic crisis and adoption of downsizing by firms. Studies that examined downsizing during the crisis focused on employees' attitudes towards downsizing rather than firms' adoption of downsizing (Kim, 2003). This paper aims to enhance our understanding of the relationship between the characteristics of firms and the likelihood and extent of downsizing during an economic crisis. We use data from a large firm-level survey to examine and compare the adoption of downsizing by firms in Indonesia, the Philippines, and Thailand. For the purpose of this paper, downsizing refers to the reduction of employees as a result of a decision by the firm (Cascio, 1993).

This study is important for at least two reasons. Although over the past few decades an extensive academic literature has developed documenting the causes and context of downsizing (Budros, 1997, 1999, 2004, Cameron et al., 1991, 1993; Cascio, 1993; McKinley et al., 1995; Mone et al., 1998; Fisher and White, 2000), extant research, however, has not gone beyond the examination of the adoption of downsizing during

normal times or economic recessions. Economic crises refer to contractions in which real output decreases by altering demand patterns, thereby requiring organizations to take strategic actions to adjust their output levels (Grewal and Tansuhaj, 2001). It is reasonable to argue that drivers for downsizing during normal times are different from those during an economic crisis. During economic crises, downsizing is prompted by the crisis and driven primarily by survival whereas during normal times, downsizing rests on the promise that downsizing would enhance, or at least preserve, firms' profit through reduction in labour cost (Guthrie and Data, 2008). The specific drivers for downsizing during economic crises may have an impact on the types of firms that downsize during these periods. As argued later in the paper, factors specific to crisis environment have a significant influence in making decisions about downsizing during an economic crisis. In this article, we aim to fill this gap by conducting an empirical analysis into the adoption of downsizing during the Asian crisis of 1997. Second, the findings of this study will serve to inform policy makers of the types of firms that downsize during the crisis and provide insights into the reasons for downsizing.

The remainder of the paper is organized as follows. First, we use extant research to develop hypotheses for the paper. We then provide a brief description of the data used in the empirical part of the paper, and explain the probability model used to estimate a model for downsizing. We conclude the paper with an analysis of empirical results and a discussion of the main findings.

Theorizing Downsizing During an Economic Crisis

A number of scholars have theorised why certain firms adopt certain management practices as a result of exogenous shocks. A line of research led by Meyer and associates (Meyer, 1982; Meyer et al., 1990; Meyer et al., 2005) posited that environmental jolts such as economic crises or social and political turmoil would prompt firms to introduce new management practices. This line of research, however, does not tell us which firms are more likely to adopt the new practices. To answer the latter question, scholars have used institutional theory to help explain the logic that guides firms to adopt, or not to adopt, as the case may be, certain practices. Institutional theory puts a strong emphasis on homogeneity of practices within a group of organizations (Greenwood and Hinings, 1996). Based on the definition of group of organizations, two leading perspectives have been influential in the institutionalism literature. First, an industry or sector based view which argues that isomorphism pressures within an industry coerce firms within a sector to adopt similar practices. Second, a country level institutional view which suggests that management practices, such as downsizing, are the outcomes of an interaction between firms and country-level institutions. We believe it is critical to combine insights from the two perspectives to achieve an accurate picture of firm behavior towards downsizing during an economic crisis. Therefore, in this study we take the view that the two perspectives complement each other and investigate the adoption of downsizing between different sectors and across countries.

The adoption of downsizing across sectors

According to the neo-institutional theory, organizations in the same sector of activity conform to contextual expectations of appropriate organizational forms through what

institutional theorists call coercive isomorphism, to gain legitimacy and increase their probability of survival (DiMagio and Powell, 1991; 1983). Organizations within a sector adopt certain practices because of institutional pressure that is exerted by institutional bodies upon which organizations are dependent for critical resources, or by cultural expectations in the sector within which the organization operates (Powell and DiMaggio, 1991). In other words, uniform institutional pressure will lead to uniform intra-industry adopting downsizing as "desirable, proper or appropriate" practice (Suchman, 1995: 574). Further, as firms operating in the same sector of activity are exposed to similar challenges during an economic crisis, such as lower demand for their products and or an increase in the cost of inputs, it would be reasonable to expect a large degree of uniformity in intra-industry adoption of downsizing and a large degree of non-uniformity between industries. Furthermore, given that sudden and unexpected crises often do not give managers the required time to develop effective strategies to deal with them, managers may have no option but to resort to mimicking strategies of firms similar to them (D'Aveni, and MacMillan, 1990). Mellahi and Wilkinson (2004) noted that when a crisis of highly ambiguous causes and consequences strikes a single organization, other organizations of the same form may conclude that they will suffer the same faith. Similarly, Cyert and March (1963) noted that organizations mimic each other by observing practices adopted by firms around them to reduce search costs for alternatives. Recent empirical evidence suggests that blind mimicry often takes place when organizations face uncertainty in a given situation, and seek urgent viable solutions (Mellahi and Wilkinson, 2004). By doing what other similar organizations are doing in the field, managers protect themselves from being accused of mishandling the situation (Budros, 1995; Cascio, 1993; McKinley et al., 1995; McKinley et al., 1998; DeMeuse, 1994; Ahmadjian and

Robinson, 2001), and share the blame if things go wrong (Scharfstein and Stein, 1990). Ahmadjian and Robinson's (2001) study of Multinationals in Japan during the 1990s recession found that while downsizing was triggered by economic pressure, "social and institutional pressures shaped the pace and process by which downsizing spread".

The above analysis suggests that during an economic crisis, early adopters of downsizing create a herding behaviour within sectors where "everyone is doing what everyone else is doing, even when their private information suggests doing something quite different" (Banerjee, 1992). One possible explanation is that economic crises create panic, and organizations in panic tend to disregard their private information and follow other organizations thoughtlessly (Mellahi and Wilkinson, 2004). Banerjee (1992) found that people tend to herd more when they face threatening situations such as a crisis and lack the confidence to deal with it. Finally, a major country-wide financial crisis is generally associated with the advent of unexpected supply shocks, such as increased prices of raw material, or demand shocks, such as a fall in product orders, at the sector level.

The above discussion posits that the adoption of downsizing would be relatively similar within sectors. However, not all sectors are subjected to the same, perceived or actual, level of shock (which we call *exposure* henceforth). It is even possible that some sectors escape the stress of such a crisis altogether. Therefore, we expect downsizing to occur in sectors hard hit by the crisis and that the practice does not migrate to sectors not affected by the crisis. Extant research on the Asian economic crisis argues that, among other factors, the decline in domestic is a key measure of a sector's vulnerability to the crisis (Claessens, Djankov, and Xu, 2000). Lee, Beamish, Lee and Park (2009) argue that sectors hard hit were those that experienced a drastic

shortfall in demand in the domestic market and were not able to increase their export activities easily. Colaço, Hallward-Driemeier and Dwor-Frecaut (1999) report that in addition to the collapse of the domestic market, the sectors that relied on inputs from international markets faced a double blow as cost increased significantly as a result of the local currency depreciation (see also Dollar and Hallward-Driemeier, 2000). In the following brief analysis we focus on the impact of Asian economic crisis in three sectors - industry, textile and food. Overall, research shows that the textile sector was dependent, to a large extent, on export markets where the US markets absorbed a significant portion of garments and footwear products (Wie, 2000). Further, most raw material was sourced locally and therefore one would expect the textile sector's market not to decline significantly during the economic crisis. In the food industry, one expects that the domestic market would not collapse because of the need for such basic products. Wei (2000) shows that the agriculture, livestock, and fishing did not decline during the 1995-1999 period which can be used a proxy to indicate that the food sector tend to remain relatively stable during an economic crisis. In contrast, manufacturing was the worst hit during the Asian crisis (Wei, 2000) for a number of reasons. First, most manufacturing firms were serving the local market as manufacturing export from most Asian countries decreased in the mid-1990s. As a result, in 1998, the manufacturing and construction sectors experienced a decline of -12% and -39.7% in respectively. The above analysis indicates that the industrial sector was the most hit by the economic crisis while the textile sector and food sectors were less vulnerable because of reliance on export and stability of domestic market respectively. Therefore, we propose that:

H1. Holding other factors constant, we predict significant differences in the adoption of downsizing across different sectors during the Asian economic crisis. Specifically, we expect the adoption of downsizing in the industry sector to be significantly higher that in the textile and food sectors.

Adoption of downsizing across-countries

In addition to differences between sectors, we posit that the adoption of downsizing was also different between the different countries studied in the paper. Specifically, we ask whether organizations in the three countries hit by the crisis have adopted similar levels of downsizing. Institutional theorists have long argued that scholars must take into account institutional factors to better understand firms' actions. An extensive body of research (Meyer and Peng, 2005; Peng, 2003; Wan & Hoskisson, 2003) provides evidence to suggest that firms, and particularly in emerging economies, are susceptible to institutional influences which include the regulative environment and governments' ability and willingness to interfere in the affairs of business firms. The latter body of research suggests that country-specific factors have a strong effect on the degree to which firms take strategic and operational actions such as reducing the size of employment. Indeed, North (1990:3) note that institutions set the "rules of the game in a society" and have a strong impact on how firms behave. Similarly, Whitley (1992 a,b) argue that that business practices are constituted within distinct national institutional forms and, as a result, countries develop "distinctive managerial rationalities and practices" over time, which results in "particular ways of organising, controlling and directing enterprises" (Whitley, 1992b, p.7). For instance, in the US context, Marks and DeMeuse (2003, p.6) note that the deregulation of markets provides firms with the opportunity to cut costs by eliminating jobs. In contrast, Cappelli (2000) argues that management's ability to downsize is restricted by the presence and power of unions and collective bargaining agreements. This is because, Cappelli (2000) argues, "Union contracts may contain restrictions on layoffs that raise the costs of downsizing".

In this paper we posit that firms' tendency to downsize is influenced, in part, by managers' perceptions of the government ability to control the crisis and country's industrial relations framework. First, the three countries considered in this paper share many features, including geographical proximity and the impressive economic growth over the years preceding the 1997 financial crisis, but differ markedly in the way they handled the crisis. This is because of different legal and institutional frameworks in the three countries (MacIntyre, 1994). Barth et al., (1998) noted that the differences in institutional features across the Asian countries had a significant influence on firms' perceptions of the crisis and their responses to it. MacIntyre (2001) and Ramesh (2000) reported that the three countries considered in this paper had distinct institutional features during the 1997-1998 period. One of the key factors is the regulation framework governing governments' strategies in dealing with crisis. This varies from highly regulated countries where the government's strategy has to be debated and agreed by a number of institutions such as trade union bodies, opposition parties and so forth and least regulated countries where governments have a free hand in dealing with the crisis (Filatotchev et al., 2000). As MacIntyre (2001, p.83) puts it "(there was) a wide dispersal of veto authority in Thailand, an intermediate configuration in the Philippines, …. [and a tight] centralization in Indonesia".

Second, firms' ability to layoff employees during the crisis was influenced to a large extent by the industrial relations framework in each country. Industrial relations within a country are important for firms' ability to downsize because they affect firms' capability to make employee relations decisions which in turn impact on firms' ability to layoff employees. Hamilton (1995) observed that prior-to the crisis, the industrial relations system in Asian Pacific Rim countries shared similar features but the institutional forms and firms' ability to act varied from one country to another.

Similarly, Warner (2000: 172) noted that Asia Pacific countries adopted significantly different industrial relations frameworks and "it was probably naive, in retrospect, to have imagined a homogeneous bloc of countries, institutions and practices" (see also Frenkel 1993).

MacIntyre (2001) found that the institutional framework of national politics in the three countries under studies had a powerful and predictable influence on firms' responses to the crisis. More specifically, during the crisis period, the Indonesian government acted with minimum opposition from other parties. While this may have led to a quick response to the crisis, government response was not properly debated and the government had to make several U-turn policies (MacIntyre, 2001). Thus, one would expect managers in Indonesia to be concerned about the crisis and feel that the government had rushed with its decisions without proper deliberation and sound analysis. In addition to lack of opposition to government actions in Indonesia, the industrial relations system gave firms a free hand to layoff employees as they see fit. In Indonesia, employees' ability to act was tamed by government regulations and the industrial relations framework was bent in favour of firms (Edwards (1996). Similarly, Islam (2001:306) noted that "the analytical construct of labour market flexibility in pre-crisis Indonesia was adapted to the requirements of paternalistic authoritarianism. Thus, the emphasis was on the provision of centrally mandated benefits for workers (especially minimum wages and, later, a formal social security system). This was juxtaposed with a political framework that tightly circumscribed labour rights, while informal systems of social protection through the network of friends and families were seen as playing an adequate and complementary role for workers in the informal economy". This explains the very low level of unionization in

Indonesia in where in 1998 where only 2 percent of the workforce belonged to unions (Warner, 2000: 179).

In contrast to Indonesia, Thailand had a rigid political system that might have prevented the government from responding quickly to the crisis. The government had to make deals and bargain with opposition parties in order to make policies (MacIntyre, 1999). This process forced the government to compromise its reform strategy, which might have led to a half-hearted adoption of reforms, thus diluting their immediate economic impact (Haggard 2002). Furthermore, the deal making process takes time and sends signals to managers that the crisis is not under control. Under such circumstances, managers may take a gloom view of the future and decide to lower their production capacity by laying-off employees. However, the industrial relations system in Thailand was relatively less flexible than that of Indonesia (Warner, 2000) which formed an obstacle that firms had to overcome in order to downsize. In addition, Kamouch (2000:455; see also Lawler and Atmiyanandana, 2003) noted that Thai managers put strong emphasis on "harmonious social relations and consideration for others" which may had an impact on the adoption of downsizing by firms in Thailand.

In the Philippines, however, its institutional feature enabled the government to act in a timely manner with proper deliberation (MacIntyre, 2001). One would therefore expect managers in the Philippines to have relatively more confidence in the handling of the crisis by the government, which would make them less likely to panic or anticipate a worsening of the situation and, hence, less likely to adopt higher levels of downsizing. Further, compared to Indonesia and Thailand, the industrial relations

system in Philippines was less flexible which put constraints on firms' ability to layoff employees during the crisis (Maragtas, 1995; Erickson et al., 2003; Manning, 1999). Based on the above we hypothesise that:

H2: Other things being equal, the level of downsizing is significantly different across countries. Specifically, we expect downsizing to be highest in Indonesia, lowest in Philippines, and medium Thailand.

Data Description and Model Consideration

We use a large firm-level survey conducted in Indonesia, the Philippines and Thailand by their respective governments. The survey was conducted by the World Bank, and took place between November 1998 and February 1999. All firm sizes are represented in the sample. The questions were standardized so that data are comparable across countries.[1]

The initial survey results contain a total of 2287 observations. Due to missing observations, however, these are reduced to 1366 usable observations. A summary of the main characteristics of the sample is provided in Table 1. Table 1(a) shows that the representation of the three countries in the sample is fairly proportionate, with the lowest contributor having 28.55% of the sample's observations. The sectors, however, are slightly disproportionate, with textile and industry forming 42.61% and 38.29% of the sample, leaving the food sector with 19.11% only. Foreign firms represent about a quarter of the sample. In both cases, however, the numbers are large enough to justify statistical estimation and inference. Table 1(b) presents some frequencies on layoff

[1] The data and related information are available from http://wbln0018.worldbank.org .

proportions, average age of laid-off employees, and average tenure of laid-off employees. A rough examination of the table suggests that the majority of firms did experience downsizing of more than 5% (68% of firms), that most laid off employees were between 20 and 30, and that less experienced employees were more likely to be laid off.

INSERT TABLE AROUND HERE

The discussion of the previous sections makes it clear that downsizing is a complex phenomenon. It is the outcome of the interaction of a variety of factors. Thus, a statistical methodology that can account for such an interaction among potential factors should be carefully considered. One way of explaining downsizing is to employ a one way analysis of variance or cross-tabulation techniques to test for the significance of the impact of each of the potential factors. However, these techniques would neglect the possible interaction among the various factors. A more suitable approach would be to consider the factors simultaneously in a single equation model such as a regression model. However, a simple regression model is not suitable in the present context because our dependent variable is measured on a discrete scale (limited dependent variable). We therefore adopt the probability model (probit) technique to estimate a model incorporating the three effects simultaneously and, hence, to test our hypotheses.

Dependent, Independent and Control Variables

Dependent variable. The dependent variable -downsizing- is the level of employee reduction by 5 % or more (Cascio, 1993). Downsizing is measured as three states, no

downsizing (4 % or less reduction of workforce =0), low downsizing (5 % to 25% reduction of workforce =1) and high downsizing (more than 26% reduction of workforce =2).

Independent variables: There are two main independent variables representing the sector and country. The sector effect is proxied by the sector variable. We use a number of dummies to account for the sector effect. Although the original survey provides seven sectors, we group these into three groups since many are very similar. We consider three sectors, namely textile (defined in the survey as: garments, textiles, and garments and textiles), industry (defined in the survey as: electronics, auto-parts, and chemicals), and food (defined in the original survey as: food). Given the focus of the paper, we grouped the sectors according to labour intensity and labour cost. Textile firms tend to be highly labour intensive and low labour cost, whereas industrial manufacturing is relatively less labour intensive but cost of labour is relatively high. Two dummies are therefore used for textiles and industry to contrast with the food sector. The country variable is represented by two country dummies, which are used to represent Indonesia and the Philippines. These would contrast with Thailand.

Control variable: We control for local versus foreign ownership. Previous research on multinationals commitment to host countries during downturns indicates that multinationals are inherently footloose (see McAleese and Counahan, 1979), which suggests that ownership may influence firms' likelihood to exit or reduce its level of employment during downturns (Jackson et al., 2005; Holger and Strobl, 2003: 1; Hood and Young 1997).

The Probit Model.

A probability model takes the following form:

$$Probability(Downsizing) = Function(Independent\ Variables)$$

So, the model attempts to explain the probability that a certain level of downsizing occurs as a function of independent variables. Downsizing is measured as three states, no downsizing (4 % or less reduction of workforce =0), low downsizing (5 % to 25% reduction of workforce =1) and high downsizing (more than 26% reduction of workforce =2). We therefore use an ordered probit model and focus on the dependent variable, *Downsizing*, taking one of three values as follows:

$$Prob(\ Downsizing = 0\ ) = 1-\Phi(Index)$$

$$Prob(\ Downsizing = 1\ ) = \Phi(\mu-Index)-\Phi(-Index)$$

$$Prob(\ Downsizing = 2\ ) = 1-\Phi(\mu-Index)$$

where Φ is the Normal cumulative distribution function, and μ is a threshold parameter. A significant estimate of a threshold parameter indicates significant difference between two adjacent states.

The dependent variable is essentially 'explained' within the Index equation, given by

$$Index = \boldsymbol{\beta}'\boldsymbol{X}$$

where $\boldsymbol{X}$ is a vector of explanatory or independent variables and β is a vector of parameters. The model is estimated by maximum likelihood method.

As noted above, we set three levels of labour reduction: high downsizing (HDS) (more than 26% reduction of workforce), low downsizing (LDS) (5% to 25% reduction of workforce), and no downsizing (NDS) (4% or less reduction of workforce). While we recognize that there is an element of arbitrariness in the selection of "high" and "low" cut off points, a judgement has to be made in the absence of a commonly accepted scale. While we accept that a layoff of more than 26% of workforce is an extreme level of downsizing, we believe that this level is reasonable given the severity of the economic crisis and the extreme measures taken by firms as a response to the crisis.

We adopt a flexible representation of the *Index* function, $\beta'\boldsymbol{X}$, by including cross-products of several dummy variables. These would account for any potential interaction among country and sector effects.

Results

Table 2 shows the results of the probit analysis explaining the association between adoption of downsizing and firms characteristics. The table shows two estimated models. The first model is unrestricted, and includes all independent variables. The dummy for the textile sector is clearly insignificant suggesting similarity between textiles and food sectors. Of the country-sector interaction, Indonesia-textile, Philippines-textile and Philippines-industry are insignificant. However, given that their p-values are relatively low, their apparent lack of significance may simply be

due to the effect of the textiles dummy. Thus, we kept these variables in the re-estimated model. All variables in the selected model are highly significant and of the same sign and magnitude to those of the unrestricted model. The estimates are very similar which suggests the validity of the exclusion of the textiles dummy. The likelihood ratio statistic for exclusion of the textiles variable is 0.006, which is insignificant at the 1% level. The model suggests that compared to firms in Thailand, Indonesian firms are more likely to downsize while Philippines firms are less likely to downsize. In terms of sectors, the textiles sector is similar to the food sector in terms of likelihood to downsize, but the industry sector is significantly more likely to downsize than both food and textiles sectors. In terms of interaction, Indonesia textile is more likely to downsize than Thailand textile, but less likely to downsize than the Philippines textiles. The industry follows a completely different pattern where the Indonesian industry sector is the least likely to downsize, followed by the Philippines industry sector.

INSERT TABLE TWO AROUND HERE

In Table 3, we provide the approximate marginal effects on the probabilities of downsizing. The estimated marginal effects of dummies are based on the change in the probabilities when the variable in question changes from zero to one (see Green, 2000, p.879). The marginal effect of dummy variables cannot be computed on the basis of average values. The reason is that the probabilities drawn by the model are relative to a base model in which all dummies are equal to zero. This base model is the reference point when we wish to derive the marginal impact of combinations of

characteristics. Instead of the usual marginal impact derived on the basis of 'average' values, we derive marginal impacts on the basis of a typical firm. This is done by equating all dummies to zero, giving a 'typical' case from Thailand, non-Industrial and locally owned. The marginal effects on downsizing probabilities are presented in Table 3. A 'typical' firm from Thailand has approximately 38.8% chance of not downsizing, 45% chance of downsizing 25% of the workforce or less, and 16.2% of downsizing more than 25% of the workforce. The last three columns show the marginal effect. The figures in bold script are the country marginal effect. For example, a typical Indonesian firm (non-industrial, non-textile, and local) has 26.5% more chance to downsize more than 25% of its workforce than a typical firm from Thailand. The remaining figures show the marginal effect of the sector and ownership variables compared to a typical firm within a given country. For instance, in the Philippines an industrial firm has 6.5% more chance of downsizing over 25% of its workforce than a typical Philippine firm, and an Indonesian multinational textile firm has 1.6% less chance not to downsize compared with a typical Indonesian firm (locally owned food firm).

INSERT TABLE 3 AROUND HERE

The coefficient of the industry sector is significant and relatively large (Table 2). The sign of the coefficient clearly suggests that industrial firms had on average higher levels of downsizing compared with the textiles and food sectors. The textile and food sectors had similar levels of downsizing in Thailand. However, the cross products reveal that they are significantly different in Indonesia and the Philippines. In

Indonesia, the estimated model suggests that there is little difference between the industry and the food sector. This can be seen from the negative coefficient of the interaction of Indonesia dummy and the Industry dummy (-0.693), which roughly cancels the positive coefficient of the Industry dummy (0.714). The marginal effect of the industry sector in Indonesia (Table 3) shows a very small difference. For example, an Indonesian industrial firm is only about 0.8% more likely to adopt a high downsizing strategy than a typical Indonesian firm. However, the difference between industrial firms and non-industrial firms is striking in Thailand and Philippines. An industrial firm has 22.4% more chance of downsizing more than 25% of its workforce than a typical firm in Thailand, and is 6.5% more likely to adopt a high downsizing strategy than a typical firm in the Philippines. The overall picture is that the Industrial sector has substantially higher levels of downsizing in Thailand and the Philippines and no significant difference in Indonesia. The above results provide support for our first hypothesis (H1).

The coefficients for the country effect suggest that firms in Indonesia were more likely to have high downsizing compared with Thailand and the Philippines, while the Philippines firms were more likely to have lower levels of downsizing than the other two countries. Table 3 gives a more detailed account on the difference between the three countries. A typical Philippines firm is 16.2% more likely not to downsize than a typical firm from Thailand, while a typical Indonesian firm is 24.9 % less likely to hold on to its workforce, and 26.5% more likely to adopt a high downsizing strategy than a typical Thai firm. Thus, these results clearly support our second hypothesis (H2).

For the control variable, the negative coefficient of the multinationals dummy suggests that foreign firms have lower levels of downsizing than local firms. The marginal effects show that a foreign firm is 7% more likely not to downsize compared with a typical firm in both Thailand and the Philippines, and is 4.3% more likely not to downsize than a typical Indonesian firm.

To sum up, the results support the two hypotheses proposed in the paper. Interestingly, our results show that the sector effect interacts with the country effect, giving rise to different sector behaviour in different countries. Foreign ownership is found to matter in explaining differences in the adoption of downsizing. We also find evidence supporting our second hypothesis that the adoption of downsizing is significantly different across the three countries. The results show that, typically, firms based in the Philippines were the least inclined to adopt high levels of downsizing and Indonesian firms were the most inclined to adopt higher levels of downsizing.

Discussion and conclusion

We found significant cross-sector variation in the level of downsizing during the Asian crisis. Our findings support institutional scholars who argue that external jolts such as financial crises can start a snowball of downsizing within sectors as hard-hit firms start downsizing quickly, visibly and in large numbers. Further, our findings show that the pressures to downsize are sector specific and downsizing does not spill over to other sectors. The results show that firms from the industry sector were more likely to downsize than firms from textile or food sectors. This could be due to the fact that the domestic market for industrial collapsed as a result of the crisis and firms

were not able to export their products quickly enough. In contrast, the domestic market for food sector remained comparatively stable and textile sectors relied heavily on the export market which was not effected significantly by the crisis.

The findings show the adoption of downsizing during the Asian crisis varied across countries. Although, because of the nature of our data, it is not clear what explains the cross-country differences in the adoption of downsizing during the Asian crisis, our results show country level institutions matter. We reasoned that cross national differences in the way the crisis is handled as well as the structure of the industrial relations system have an impact on the level of downsizing as a result of an economic crisis. We argued that the industrial relations system determine, to a large extent, firms' ability to layoff employees during an economic crisis. Thus, downsizing is higher in countries where firms have a free hand to layoff employees than firms' located in countries where the industrial relations system restricts firms' ability to downsize. Following this line of thought, we expected downsizing to be highest in Indonesia and lowest in the Philippines. Our results support our proposition. Further, we reasoned that during an economic crisis, managers form perceptions and assumptions about the effect and continuation of the crisis and the impact thereof on their firms. Perceptions of government incompetence in handling the crisis reinforce the perception that the crisis is not under control and may result in high level of downsizing. In contrast, sound government policy helps to contain the perceived impact of the crisis, and as a result, firms in these countries may layoff fewer employees given their relatively positive expectations about the future state of the economy. Thus, given the lack of debate about government response to the crisis in Indonesia, managers did not know how the government would react to the crisis and,

because of lack of deliberations, perhaps, did not trust government actions. Consequently, managers would have formed an assumption that the crisis was not under control and that the government was not able to manage it. In Thailand, however, managers might have felt that government response was slower than expected but, because of the extensive deliberations, they might have felt that the government was doing the right thing (Pasuk and Baker 2000). As a result, they might have formed expectations that the crisis would continue for some time but would eventually be brought under control. In the Philippines, because the government acted in a timely manner and with proper deliberation (MacIntyre, 2001), managers were less pessimistic about the impact of the crisis and formed more positive expectations about the future of the economy. As a result, firms in the Philippines downsized significantly less than firms in Thailand and Indonesia.

As with any empirical study, there are some limitations to our analysis that should be kept in mind in interpreting the results. First, our sample is limited to three countries. Adding other East Asian countries, such as Korea and Malaysia, would increase the variability and information content of the data set, and, hence, offer more reliable statistical results. Second, our dataset does not include non-survivors, which leads to the survivor bias criticism. Thus, our results should be interpreted as relevant only within the population of firms that survived the crisis and those that did not relocate. Finally, although our probit model is statistically significant, it does not fully explain downsizing. Using the Pseudo-Rsquare proposed by Estrella (1998), we find that it is equal to 16.81%. Thus, although a substantial proportion of the variability of downsizing has been explained by our probability model, more than half of the variability of downsizing remains unexplained. We suspect that the inclusion of

unquantifiable firm specific variables, such as management style, firm's strategy, and structure, would improve the fit significantly, but would not necessarily change our conclusions. Finally, the data set does not include firm level characteristics such as size, assets, slack level, and other financial indicators of firms. As a result, we were unable to control for these variables.

It should be kept in mind also that our findings are specific to the Asian crisis, an event that occurred in emerging economies during a fast growth period. Replicating our study in other crises in developed economies or developing economies with slow economic growth, we believe, is the best route to test the generalizeability of our findings. Specifically, more research is needed to determine whether the non-herding effect of the crisis holds in other crises and could advance our understanding of how organizations behave during a crisis. Our finding that foreign owned firms downsize less than local firms during a crisis merits replication. More importantly, research that would take into consideration and control for firms that exit during the crisis would be a valuable contribution. Finally, studying the process through which, and mechanisms by which, organizations respond to national crisis would provide further explanations for our results.

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Table 1. Summary statistics of main characteristics of survey data.

(a)

Country	N	%	Sector	N	%	Nationality	N	%
Indonesia	390	28.55%	Textile	582	42.61%	Foreign	332	24.85%
Philippine	476	34.85%	Industry	523	38.29%	Local	1004	75.15%
Thailand	500	36.60%	Food	261	19.11%			
Total	1366	100%		1366	100%		1366	100%

(b)

Layoff	N	%	Average Age	N	%	Average Tenure	N	%
-5% or less	96	7.03%	Less than 20	375	27.45%	Less than 1 year	366	26.79%
-4% to 4%	340	24.89%	20-30	835	61.13%	1-3 years	631	46.19%
5%-25%	583	42.68%	31-40	108	7.91%	4-5 years	216	15.81%
26% or more	347	25.40%	41or more	48	3.51%	6 years or more	153	11.20%
Total	1366	100%		1366	100%		1366	100%

Table 2. Probit estimation results.

		Unrestricted Model			Selected Model		
		Coefficient	t-stat	p-value	Coefficient	t-stat	p-value
1	Intercept	0.267	1.571	0.116	0.285	4.353	0.000
2	Threshold	1.272	34.574	0.000	1.272	29.927	0.000
3	Indonesia	0.820	4.560	0.000	0.802	8.684	0.000
4	Philippines	-0.393	-1.914	0.056	-0.411	-3.427	0.001
5	Textiles	0.021	0.117	0.907			
6	Industry	0.714	3.612	0.000	0.696	5.945	0.000
7	Multinational	-0.179	-2.956	0.003	-0.179	-2.797	0.005
8	Indonesia × Textiles	0.231	1.140	0.254	0.252	2.513	0.012
9	Indonesia × Industry	-0.693	-3.321	0.001	-0.675	-4.804	0.000
10	Philippines × Textiles	0.274	1.214	0.225	0.295	2.134	0.033
11	Philippines × Industry	-0.369	-1.563	0.118	-0.351	-2.085	0.037
		Log-Likelihood = -1349.353			Log-Likelihood = -1349.359		

N=1366.

Table 3. Marginal Effect of Independent Variables.

Industry	Multi national	Philipp. Textile	Indon. Textile	Prob. (NDS)	Prob. (LDS)	Prob. (HDS)	Marginal Effect (NDS)	Marginal Effect (LDS)	Marginal Effect (HDS)
Thailand									
				0.388	0.450	0.162			
X				0.163	0.451	0.386	-0.225	0.001	0.224
	X			0.458	0.420	0.122	0.070	-0.030	-0.040
X	X			0.211	0.469	0.320	-0.177	0.019	0.158
Philippines									
				0.550	0.369	0.081	**0.162**	**-0.081**	**-0.081**
X				0.413	0.441	0.146	-0.137	0.072	0.065
	X			0.620	0.323	0.057	0.070	-0.046	-0.024
		X		0.433	0.432	0.135	-0.117	0.063	0.054
X	X			0.484	0.407	0.109	-0.066	0.038	0.028
	X	X		0.504	0.396	0.100	-0.046	0.027	0.019
Indonesia									
				0.138	0.435	0.427	**-0.249**	**-0.016**	**0.265**
X				0.134	0.431	0.435	-0.005	-0.004	0.008
	X			0.182	0.460	0.358	0.043	0.025	-0.069
			X	0.090	0.383	0.527	-0.048	-0.052	0.100
X	X			0.176	0.458	0.366	0.038	0.023	-0.061
	X		X	0.123	0.421	0.456	-0.016	-0.013	0.029

The marginal effects are calculated as the difference in probabilities between a given firm and the reference firm. All the dummy variables are equal to zero for the reference firm (a Thailand company, non-industry, non-textile, and locally owned).