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국제학석사학위논문

Turnaround Strategies in the Asian Crisis and Global Financial Crisis

**The role of asset and cost retrenchment in South
Korea**

아시아와 글로벌 금융 위기에서의 우회 전략
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ABSTRACT

Turnaround Strategies in the Asian Crisis and Global Financial Crisis

The role of asset and cost retrenchment in South Korea

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One of the most controversial issues in turnaround research is the role of cost and asset *retrenchment*. Several studies focusing on the role of retrenchment in crisis situations in Asia have yielded ambiguous and inconsistent findings. There is value, from a business strategy and economic policy perspective, to investigate the Korean case and either confirm or refute the merits of retrenchment for Korean corporations. Two major crises, the Asian financial crisis and the Global financial crisis, were investigated.

The quantitative analyses performed in this thesis confirmed that retrenching companies yield lower levels of performance than their non-retrenching counterparts, during both crises. These results tend to confirm the findings of Barker and Mone (2004), according to whom retrenchment is the consequence of performance decline and not the component of a successful

turnaround strategy. The findings of this thesis also show that only a minority of Korean firms resorted to cost or asset retrenchment, which contradicts the assumption made by Robbins and Pearce (1992) that the majority of firms engaged in a turnaround should retrench.

Keywords: Turnaround management, retrenchment, South Korea, Asian financial crisis, Global financial crisis

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1. Introduction – The role of asset and cost retrenchment in turnaround strategies

Turnaround strategies and their implementation are a hotly debated topic in both Western and Eastern settings. One of the most controversial issues in turnaround research is the role of *retrenchment* in turnarounds, despite the fair amount of studies that have dealt with this issue. Retrenchment can be defined as “deliberate reductions in costs, assets, products, product lines and overhead” (Pearce and Robbins, 1993). Studies conducted with Western data samples have yielded contradictory results: Robbins and Pearce (1992) concluded that retrenchment played a crucial role in turnaround management, while Barker and More (1994) have highlighted strategic reorientation rather than retrenchment as a decisive factor in turnaround success. The latter have also questioned the causality of retrenchment, arguing that they may well be a consequence of crises rather than a response to them.

Western turnaround concepts obtained unsatisfactory results in (South) East Asia in the wake of the 1997 crisis. Studies revealed ambiguous and inconsistent findings for the role of retrenchment: qualitative research found retrenchment inappropriate or unfeasible for cultural reasons (e.g. Falkenberg, 2003), while quantitative studies found a positive effect of retrenchment on performance in turnaround situations in the case of Chinese-owned businesses, under specific circumstances (Bruton et al., 2003).

There is value, both from a business strategy and from an economic policy perspective, in investigating the Korean case and either confirm or refute, based on a sound statistical approach, the merits of retrenchment for Korean corporations. This thesis will focus on the impact of cost and asset retrenchment and investigate whether retrenching companies in South Korea during major crises have performed better than their non-retrenching counterparts.

This thesis is organized in the following way. The initial literature review will focus on retrenchment research in the past thirty years and its key takeaways, and will provide insights into the turnaround and retrenchment literature that has been published about South East and East Asia. In a second step, this paper's research objective will be systematically defined, the hypotheses derived from the literature review will be explicated, and the methodological proceedings as well as the data source will be discussed. In a third and fourth step, a statistical analysis of the role of asset and cost retrenchment on company performance in South Korea for each major crisis will be performed. A data sample from the Asian Financial Crisis will be analyzed in the third step, while the fourth step will focus on data from for the Global Financial Crisis. In a fifth and final step, the results from both samples will be compared and relevant conclusions will be drawn.

2. Literature review – Asset and cost retrenchment

Many researchers in the field of turnaround management have emphasized the importance of cost and/or asset retrenchment in achieving turnaround success (e.g. Robbins and Pearce, 1992; Hofer, 1980; Bibeault, 1999). Retrenchment, often referred to as “downsizing” or “restructuring”, can be best defined as “a strong emphasis by the firm on cost and asset reductions as means to mitigate the conditions responsible for financial downturn” (Robbins and Pierce, 1992, p. 287). The primary objective of retrenchment is to stabilize the financial situation of the company, which is the only way to operate a successful turnaround in the future (Pearce and Robbins, 2008, p. 122). According to Furrer and al. (2007), investors may value retrenchment strategies highly, due to their presumed immediate effect, in comparison with more long-term turnaround strategies (p. 385). From a principle-agent theory perspective, this could obviously influence management when deciding on the means to achieve a desired turnaround.

Early perspectives on turnaround strategies posited that the decline of a firm could be related to either internal or external sources of decline (e.g. Schendel and Patton, 1976). Correspondingly, practitioners would distinguish between strategic and operational turnaround (Hofer, 1980): the strategic approach tried to solve external problems and implied that the way the firm responds to its environment is the problem, not how it operates as such. Its pricing

strategy may be wrong for example, which has nothing to do with the way it operates internally and how its balance sheet is structured. Operational turnaround on the other hand focused on improving firm efficiency and thus championed the retrenchment of non-performing assets and cost structures (Pearce and Robbins, 2008, p. 112). Both approaches may end in asset- and cost-cutting decision-making however, which are assumed to positively influence performance if based on an either strategic or operational assessment of the firm.

Indeed, according to retrenchment proponents, companies that had successfully overcome strongly declining returns would design their turnaround effort around strict cost reductions, followed by an operational downsizing in order to focus on those segments of the business with the highest probability of yielding high margins in the future. Retrenchment here is not a word that refers exclusively to a negative variation in costs or assets – it describes a specific period during which a strategically planned turnaround is executed. In other terms, retrenchment is a strategy and not only an outcome (Robbins and Pearce, 1992, p. 287).

Retrenchment was seen as an important topic as many studies in the 1980s (Heany, 1985; Finkin, 1985) had found preoccupation with growth to be the number one internal cause of corporate decline. Business expansion had traditionally always been the main driver behind managerial decisions in

America and thus not much thought in business leadership circles had been given to management under duress and the potential merits of retrenching strategies (Robbins and Pearce, 1993, p. 614).

Most research papers published in the 1980s however would not treat retrenchment as a core component of organizational turnaround but rather as a small part of a larger process. Researchers such as Bibeaault (1999) would analyze the performance of a firm between two points in time – typically the worst financial year during a crisis period and the year of recovery. This would make it impossible to distinguish the influence of retrenchment from the impact of “return-to-growth” strategies that eventually followed retrenching. The field of strategic management in general had the favors of academia, as the number of academic papers published on the topics of mergers and acquisitions, strategic alliances or vertical integration outnumbered by a wide margin those focusing on the management and subsequent turnaround of troubled or at least declining ventures (Robbins and Pearce, 1993, p. 614).

Research in the 1990s and 2000s has focused more narrowly on the cause of decline, which would then influence the type of turnaround that would be required. Authors such as Falkenberg (2003), Arogyaswamy et al. (1995) and Barker and Duhaime (1997) divided firm-based and industry-contraction based declines. If the crisis is firm-induced, then turnaround may be achieved

through strategic renewal. If the industry contraction and cyclical declines involves less strategic change but may very well require capacity adjustments.

Barker and Duhaime strongly emphasize the importance of strategic change in any turnaround process and warn of misinterpreting financial ratios. Indeed, change in these ratios that are usually attributed to increased efficiency due to retrenchment may well be the result of management actions that have increased the sales side of the equation (p. 17). The two authors also point to several studies (Ramanujam, 1984; Hambrick and Schechter, 1983; Arogyaswamy, 1992) that have shown the high significance of strategic turnaround and the role of sales increase in the turnaround process. Arogyaswamy's research is quoted by Barker and Duhaime as particularly significant, because it showed that successfully turnaround firms had adopted "efficiency strategies" defined as the ability "to decrease three of five expense or balance sheet items [...] *as a percentage of firm sales*" (p. 17). Yet the successful firms were significantly less likely in *absolute* terms – in other words, although their costs or assets would decrease as a percentage of sales, in absolute terms they would remain the same or even increase.

Poon et al. (2001) argue that incremental cost retrenchment alone is almost never sufficient to achieve a sustainable turnaround, hinting at the need for radical action once management has established the company's cost structure to be the main issue. This view is shared by Byerly et al. (2003), who found

major retrenchment efforts to be more financially rewarding than more “conservative” moves. The authors also contend that retrenchment strategies are most effective when executed in a sequence: at first, aggressive cost retrenchment should be resorted to in order to resume profitability, while in a second move the company should reorganize e.g. retrench its assets to support and grow business units with the highest profit margin potential. In addition, managers should combine retrenchment and strategic thinking, by retrenching costs and/or assets until the decline has been stabilized and *then* turning the business around through the competitive repositioning of the company (Pearce and Robbins, 2008, p. 129).

Morrow et al. (2007) however have found asset retrenchment to be more effective than cost retrenchment in general, while Castrogiovanni and Bruton (2000) suggested that retrenchment may be context specific and thus may yield different results based on industry sector and the type of crisis. Additionally, Michael and Robbins (1998) found in their study of American SMEs that the cost and asset factors most commonly used for retrenchment were those more easily available in factor markets (p. 42). In other words, a company is more likely to retrench an hourly worker for example, than a specialist, or is more likely to cut advertising budgets than funding to its distribution channels. The key is to preserve production factors that are

specific to the firm and thus difficult to replicate, as they amount to strategic investments and remain key to the company's competitive advantage.

According to Falkenberg and Chong (2004a), the need for retrenchment in the first phase of a turnaround process is independent from the source of decline. Rather, retrenchment in the initial phase of a turnaround is dependent upon the severity of the decline of the firm and the availability of slack resources (Arogyaswamy et al., 1995; Falkenberg and Chong, 2004a; Hambrick, 1985; Hofer, 1980). If the decline is severe however and the survival of the firm may be immediately endangered despite its objective viability, short-term oriented retrenchment will be implemented regardless of what the long-term recovery strategy may be. Thus, the degree of retrenchment may be related to the degree of financial pressure the firm is facing in a situation of crisis (see *Hypotheses 1* and *2*). Francis and Pett (2004, p. 39) found indeed that retrenchment is a strategy mainly employed by companies facing severe or rapid decline.

According to Francis and Desai (2005), a firm's ability to turn its business around is a combination of firm retrenchment, the availability of slack resources as mentioned by Falkenberg and Chong (2004a), firm productivity and other contextual factors such as the severity and urgency of the performance decline (p. 1203). Yet they did find asset retrenchment and expense retrenchment to be significant predictors of turnaround (p. 1217),

much more than what the authors call “environmental munificence” – the environment’s capacity to accommodate firms (p. 1218). Analyzing their data in light of the regression results they computed, Francis and Desai found that although retrenchment is a helpful organizational strategy for many companies in decline, it is not absolutely necessary for companies looking to achieve a turnaround yet enjoying already high productivity and optimal resource allocation (p. 1219). This goes against what Pearce and Robbins (1994) had concluded about retrenchment in their study, which they had deemed fundamental to a successful corporate turnaround (p. 407)¹. Additionally, Francis and Desai point out that retrenchment, while arguably the most appropriate tool to improve financial performance for companies suffering from low efficiency, may not necessarily result in a successful turnaround. Their study also found that in terms of performance improvement (which is different “turnaround”), asset retrenchment had an impact on the magnitude of the increase, while expense retrenchment had no effect (p. 1220).

¹ The debate over the significance of retrenchment became quite “heated”. To quote Pearce and Robbins (1994, p. 407): “*The term ‘replication’ denotes the duplication of an experiment, perhaps to verify that the original findings were based on valid and reliable data and that they were accurately observed and interpreted. Although they claim otherwise, Barker and Mone (1994) did not replicate Robbins and Pearce (1992) [...]*.” The header was titled “*A Replication, It Wasn’t*”.

Although they acknowledge the tension between retrenchment and recovery, Schmitt and Raisch² (2013) have arguably made a significant contribution to the debate by developing a dual framework encompassing both elements of corporate turnaround. Indeed the success of a turnaround is a function of the company's "ability to integrate contradictory, yet interrelated, retrenchment and recovery activities" (p. 1236). Previous models conceptualized turnaround as a two-stage process: an initial stage dominated by retrenchment, followed by "advanced" stage fully focused on recovery (p. 1237). The authors show how retrenchment indeed acts as a "resource provider" in the initial stage, yet it must be strategically directed to be efficient (p. 1237). Conversely, strategic change in the second phase cannot be fully effective without keeping the retrenchment effort alive, in order to regain stability and thus provide the organization with the resources to achieve that strategic change.

While both sides of the retrenchment debate provide valuable insights, they did not offer an overarching framework (Lohrke et al., 2012). Schmitt and Raisch also found however that the interaction between retrenchment and recovery was insignificant in the case of a distinctly severe decline. These

² The stimulating study by Schmitt and Raisch (2013) is based on an empirical study of 107 Central European turnaround initiatives. While the theoretical framework they develop is quite interesting as a means to connect all the divergent literature on retrenchment and its effects, the generalization potential of their dataset could be questioned.

results support the viewpoint of Barker and Duhaime (1997), for whom companies facing severe resource scarcity are particularly inept at managing retrenchment and recovery at the same time. Schmitt and Raisch thus recommend further research into the situation of firms experiencing severe decline, to investigate if these companies should focus exclusively on retrenchment to optimize their chances of a successful turnaround (p. 1236).

Another recent study by Lim et al. (2013) distinguishes “resources” (the firm’s fundamental attributes, such as its financial, physical or organizational capital – also called “resource-based view” or Ricardian perspective) from “capabilities” (a company’s “capacity to deploy and exploit resources to implement its strategies” – i.e. “capability-based view” or Schumpeterian perspective), which bring about two different rent creation mechanisms (p. 44). Traditional industries achieve economic rent by exploiting resources or (physical) assets they have either developed internally or acquired. Companies from the knowledge economy (such as information technology firms for example) on the other hand are more likely to develop Schumpeterian rent creation mechanisms.

According to the authors, the type of rent creation the firm relies on is a critical contingency factor when deciding which retrenchment strategies to pursue. Ricardian firms, typically capital-intensive organizations, have less incentive to retrench their assets as this would hinder their prospects for

future rent (p. 45). Given their business model, their assets are also very likely to be highly standardized and efficient – reducing them would lead to a loss of what makes the firm’s competitive advantage. Ricardian firms thus have an incentive to focus instead on cost retrenchment to achieve their turnaround. On the other hand, Schumpeterian firms have much more to lose from a cost-based retrenchment approach, as their competitiveness is more likely to stem from expenses such as R&D (innovation). Even for diversified business groups, the “Schumpeterian side” of their economic rent is playing an increasingly important role. Choo and al. (2006, p. 2) reported that the successful post-crisis turnaround of Korean *chaebols* was strongly related to their technological capabilities, which have become increasingly important in terms of securing rent extraction globally.

Lim et al. analyzed a sample of Japanese firms for the years 1992-2000. Their results were indeed significant for the negative impact of cost retrenchment on Schumpeterian firms, and marginally significant with respect to the negative role of asset retrenchment on Ricardian companies (p. 57).

Norman et al. (2009), who also base their analysis on a resource-based view, show that while retrenchment (which they call “downsizing”) can be beneficial, there is a threshold under which a company is more likely to declare bankruptcy than it was before the downsizing. The idea is that during (and despite) the retrenchment process, firms must develop new internal

resources to remain relevant and competitive. If the downsizing is too radical, they may compromise their ability to do so by shedding the skills and processes required for resource creation. Norman et al. also quote Sirmon et al. (2007), who posited that resource intangibility may help companies to avoid bankruptcy because this type of asset can be more easily recombined and redeployed (p. 2029).

Their findings suggest firms that can mostly rely on intangible resources (such as patents or brand equity) are the most likely to rebound following a retrenchment period. Companies with many such intangible assets may continue to exploit and grow them immediately after downsizing, despite the organizational and human capital disruption caused by the retrenchment (p. 2029). While there are of course many negative effects of retrenchment (such as knowledge loss and “survivor” negativity in the case of layoffs), as described by authors such as Turner et al. (2007), Norman et al. contend that many of these effects can be mitigated depending on the type of resources available to the firm (p. 2030) – and as mentioned, the higher the reliance on intangible assets, the higher the chance of avoiding bankruptcy and/or remaining independent.

Interestingly, the use of the word “retrenchment” has slowly decreased in recent literature and has been steadily replaced by “organizational restructuring”. When a firm’s management announces a restructuring,

stockholders and financial analysts immediately know that the company is in bad shape but has a plan to turn itself around. While these restructuring plans usually revolve around words such as “lean” or “core values”, the end effect is usually to reduce the workforce or focus on core competencies – for example –, which amount to cost and asset retrenching (Pearce and Robbins, 2008, p. 122).

Yet it is clear from this literature review that there are very diverging opinions on the true impact of cost and asset retrenchment on performance (and turnaround). These differences stem from the various research objectives and assumptions, but can probably also be traced from the choice of sample data by the authors; as an example, the Robbins and Pearce study of 1992 relies on a sample of textile mills (p. 293). While there was a rationale for this choice (leading employer in the United States during the period of the study – 1976 to 1985 –; good sample of the greater American manufacturing sector due to typical economic and corporate structures; one of the first traditional manufacturing industries to face fierce competition due to globalization), the underlying assumptions may not be relevant for the economic environment of other industries, countries and of course time periods. As in illustration, Morrow et al. (2004) found that in growth industries, asset retrenchment was positively correlated with performance improvement, while cost retrenchment was insignificant. In declining industries, cost retrenchment had a positive

impact on performance, while asset retrenchment had an adverse effect on it (p. 189).

Thus the two sample studies in this thesis will attempt to shed some light as to the validity of these various studies and their respective results for the Korean business environment. Their general applicability will be tested by means *Hypotheses 3a, 3b, 4a and 4b*, which will oppose two competing assumptions for the impact of cost retrenchment and asset retrenchment on firm performance.

3. Turnaround strategies in the Asian context

As mentioned, a group of researchers have concluded retrenchment to be a critical strategic element in achieving turnaround success (Robbins and Pearce, 1992), while others (i.e. Barker and Mone, 1994; Barker and Duhaime, 1997) deny retrenchment plays a crucial role in facilitating recovery, and have instead posited the important role of strategic turnarounds and strategic reorientation.

The importance of retrenchment in successful turnaround strategies in Southeast Asia is even more ambiguous (see below), while there are not many studies on retrenchment turnaround in Northeast Asia. Chung and Kim (2004) conducted research on the Korean setting, focusing on machinery companies publicly traded on the Korean Stock Exchange, yet based on a balance scorecard perspective, using a survey as primary data, and focused on organizational effects. As referred to earlier, Lim et al. (2013) analyzed a Japanese dataset for the period of the Asian financial crisis, focusing on the role of asset and cost retrenchment relative to the type of firm (resource-based versus capability-based). Their results were significant for the negative role of costs on Schumpeterian firms but less clear-cut with respect to the adverse impact of asset retrenchment on Ricardian firms.

Southeast Asia has been the region of interest for authors such as Bruton et al. (2001), Bruton et al. (2003) and Falkenberg (2003), who have found little emphasis on retrenchment in turnaround strategies for cultural reasons. Many Asian organizations are unable to retrench due to their operating environment and comparatively low human resources costs (Bruton et al., 2001).

Generally speaking, the prevalent theme in the literature is that Western turnaround strategies and their implementation is on average incompatible with an Asian framework, due to significant differences in political, institutional and environmental settings (Ahlstrom and Bruton, 2004, p. 9). Although this term sounds almost “cliché” in 2015, the main cultural dimension at work in Asia is what the famous Dutch social psychologist Geert Hofstede referred to as “Confucian Dynamism” (Hofstede and Bond, 1988). One of its important consequences on the business environment is a rather negative view of failure (and thus less entrepreneurs willing to take risks, especially in less mature markets), but it also has a direct impact on turnaround efforts (Chen, 2001).

Cultural differences in terms of turnaround management was the main topic of interest for Bruton et al. (2001) in their study of turnaround successes among large and midsize Chinese-owned firms in Hong Kong and Thailand³

³ Ethnic Chinese communities have a prominent role in the Thai business landscape.

during the Asian financial crisis⁴. Summarizing the relevant Western literature on turnaround, the authors divided core turnaround decisions taken by Western managers into five action points: (1) recognize the existence of a problem, (2) retrench (stop the “bleeding”), (3) devise a turnaround consistent with the actual issues the firm is facing, (4) replace current top management if required (part of the problem) and (5) recognize the decline as soon as possible so that corrective action can be taken before it’s too late (p. 148). It came quickly obvious that these actions cannot be implemented piecemeal in other cultural environments. Bruton et al. mention the position of the CEO as a striking example: they are difficult to remove in an East Asian setting (p. 151)⁵. Even if they are stripped of their decision power, they will often retain their title – which allows them to save face and make sure the company can still leverage their connections with authorities and the business communities – the so-called *guanxi*, or network of influences (Standifird and Marshall, 2000). Reshuffling top management is particularly difficult in East Asian

⁴ One can appreciate the justification for the study, which very much sums up the question at hand (p. 147): “Such information is important [...] to investors or lenders from outside East Asia that are unfamiliar with the more unique issues present in a turnaround effort in the region. In particular, it is not clear if the same actions that produce firm turnarounds in the U.S., or other Western economies, will be similarly effective in East Asia.”

⁵ Particularly so if the CEO happens to be the majority shareholder, which is often the case in firms with family legacy (p. 160). Bruton et al. (2001) recommended Western investors and lenders to treat the Asian turnaround as if they were dealing with a “closely held family business” (p. 161).

companies, as boards are usually strongly supportive of top management and very reluctant to authorize change (Bruton et al., 2003, p. 534).

Bruton et al. (2001) found that governance and ownership structures in these firms would slow down the recognition of the problem, while their ability to retrench was often limited. As there are often more lenders and creditors involved than immediately recognized by management, the equity and debt structure would first need to be clearly determined before the retrenchment effort can be agreed upon and executed (p. 153). There was also a general consensus that Chinese-owned firms had a strong tendency to resort to strategic turnaround first and thus avoid asset or cost retrenchment as much as possible. Furthermore, all experts interviewed in the Bruton et al. (2001) study agreed that turnaround was usually slower in East Asia than in the West, as it was very difficult to the consensus needed to support more drastic action (p. 158). Despite the fact, as mentioned, that turnaround efforts are more likely to be successful the earlier they start, too many East Asian firms would start studying the problem – let alone consider sweeping changes – once “compelled” by outside stakeholders (for example bondholders and other parties awaiting wary of the firm’s ability to meet its interest payments).

The authors also mention an interesting element which might amplify or even explain the phenomena described in the preceding paragraph: firms with a diversified ownership structure and independent boards of directors were until

after the Asian financial crisis a largely Western occurrence (p. 161). The importance of a market for corporate control and the predominance of principal-agent theory literature were not aspects of the East Asian business environment back then (Peng et al., 1999). In a subsequent paper on turnaround management in companies owned by ethnic overseas Chinese communities, Bruton et al. (2003) caution against applying the result of U.S. turnaround research to the Asian context, where the importance of relationships within the business community and the central role of “owner-managers” constraint its applicability (p. 519). Yet their study did demonstrate that parts of the now standard “Western” turnaround model, as posited by Robbins and Pearce (1992) and other authors (see Section 2), were applicable to firms in ethnic Chinese communities (p. 533). Specific retrenchment activities were implemented by management in response to downturns, sometimes despite strong, public resistance from stakeholders (p. 533). Additionally, “owner-managers” shift the relationship between firm size and performance: studies of U.S. firms found large companies to have access to greater (slack) resources and were more successful in turning their business around, while in the case of firms owned by ethnic Chinese overseas, smaller companies were more likely to achieve a successful turnaround (p. 534). When owner-managers are aware of a problem early and embrace change, they have the freedom to act more aggressively.

A recent study by Berman et al. (2013) examined the effects of work ethic, group belonging and fellowship on the use of performance strategies in South Korea, Mainland China, Taiwan, Malaysia, India and the United States (p. 1065). While their analysis is based on a comparative survey of public managers, and thus can only indirectly be applied to the corporate world, they found that culture had an indirect impact on performance strategy for the most part but had the same significance as an explanatory variable than leadership or human resources management. Their conclusion is that societal aspects should not be ignored when analyzing the implementation in organizations of management practices related to performance. Followership is negatively correlated with the use of performance strategies – and followership cultures are strong in East Asia than in the West (p. 1084)⁶.

In 2011, Chakrabarti et al. analyzed 1256 firms based in eight South East Asian economies from 1990 to 1999 (which included South Korea). They did not pay attention to cultural factors but rather to environmental factors such as the level of market development and the economic heterogeneity of the countries in their sample. They found that the presence of more developed infrastructures enable weak companies to retrench more effectively, while the existence of deeper markets reduce the incentives for asset retrenchment and

⁶ The authors warn not to misinterpret their results – East Asia is home to many innovative policies and bold management strategies, despite higher propensity to followership (p. 1085).

enhance the benefits of expanding the balance sheet (p. 6). These results temperate the “cultural” school of thought that posits that (South) East Asian firm’s unwillingness or inability to retrench could stem from cultural factors that run against retrenchment strategies (such as protecting lifelong employment, or failing to take retrenchment action soon enough for fear or losing “face”).

As a result of the Asian financial crisis however, the influence of creditors (many of them Western financial institutions) and their ability to apply considerable pressure on troubled companies dramatically increased. Yet the decisive action they were waiting to see the debtor firms implement were simply inconsistent with the cultural orientation of these companies and brought about much tension (Bruton et al, 2003, p. 520). This conflict of values added to the overall tension in the Asian Crisis and was echoed in in South Korea as well: foreign lenders wanted firm action to be taken and sought to gain more control in the boardroom to protect their interests, which they saw as a legitimate move. Turnaround specialists – especially private equity firms – entered the market to buy companies at depressed valuations and turn them around by restoring profitability, usually through old-fashioned retrenchment strategies (Kang, 2006, p. 73ff). Target firms and public opinions often interpreted this “activism” as an intolerable, predatory interference by foreigner investors motivated by greed – while they had to

suffer the consequences (Shin and Woo, 2008)⁷. Yet is also clear that since the Asian financial crisis, Western models of corporate governance have been widely diffused in East Asia and implemented as best practices.

The “culture” card has been by played by domestic institutions as well. Domestic private equity funds in Korea were happy to brand themselves as morally virtuous, counter to their “eat and run” foreign competitors (Robertson, 2010, p. 365). The head of MBK Partners in Korea was quoted in 2007 saying that foreign investors should consider themselves “guests” when investing in Asia and, accordingly, “follow cultural imperatives and respect the traditional values of Asia” (p. 367)⁸. While a lot has been written, both in Asia and the West, about “corporate raiders”, it is clear that private equity firms played an important role in overhauling the distressed financial sector in Asia after 1997 – especially in Korea. When Newbridge Capital bought Korea First Bank in 2000, a bankrupt financial creditor, its focus on efficiency gains and organizational restructuring enabled the bank to improve loan approval

⁷ Public opinion and government scrutiny of any acquisition by a foreign entity, stemming from that crisis period, has had a tangible impact on international investors: the KOSPI traded at average 8.5 times next year’s earnings in 2011, which was the lowest out of Asia’s largest equity markets (BusinessWeek, 2011). This phenomenon even has a name: the “Korean discount”. According to Kim & Chen (2012, p. 209), foreign capital has “avoided” Korea in relative terms, which has slowed the maturation of Korean financial markets.

⁸ Although this is an entirely different topic, it should be mentioned that MBK Partners – and many other “domestic” private equity funds in Korea – are majority funded by Western financial institutions and pension funds, and staffed with Korean Americans with past careers in major US banks and investment firms. PE funds labeling themselves “domestic” and understanding of the “local culture” use these arguments as a selling point for Western investors (cf. Robertson, 2010, p. 363).

time by 75% and to become a net job creator on the 2000-2005 period, when the fund sold Korea First Bank to Standard Chartered for a nearly fourfold return on investment (Yi and Park, 2006).

Additionally, Asia differs from the United States and the West in general in terms of one key institution: government. The role of the state in most Asian economies has little equivalent in Western countries⁹ (Ahlstrom and Bruton, 2004, p. 16), where governments seldom resort to direct intervention in the marketplace or steer industries in a specific direction as defined by government strategists. As White (2004) points out, turnaround management in Asia must take the government into consideration as one of the major stakeholders – alongside creditors, stockholders, suppliers, and of course the workforce. This can tip the “balance of power” in favor of those opposing more stringent retrenchment, as it may have an adverse impact on employment, regional economics – and of course politics. Probably one of the best examples of government involvement can be found in Korea during the Asian financial crisis: Korean authorities, in cooperation with major credit banks, released in 1998 a list of 55 “blacklisted” firms that had been deemed nonviable and thus were ordered to exit the market (Min and Sohn, 2008).

For Meyer (2004), the role of stakeholder management is one of the key elements explaining why change in organizations in emerging markets can be

⁹ Even the famed French state interventionism (“Colbertisme”) belongs to the past.

sometime difficult. Research on stakeholder management in Western economies found stakeholder coordination less critical for the success of a turnaround or a change in corporate strategy. Meyer developed a game-theoretical model for executives in Asia to better manage the often numerous stakeholders closely involved in company business, especially when they are trying to push forward radical change. Without adjusting the individual behavior of large numbers of stakeholders, sweeping change cannot be achieved.

The diffusion of Western business practices and standards has arguably picked up steam since the Asian financial crisis, which accelerated the internationalization of best practices, accounting standards and, in effect, the prevalence of Anglo-Saxon business principles. The dominance of Anglo-Saxon business and economics education, a long-term trend that has accelerated with the growth of the Asian middle class and its aspiration for an American or at least American-inspired higher education, also plays a role. Additionally, the economic dynamism of East Asia – Korea is a case in point – has attracted Asian-Western talents with a corresponding ethnic background, who act as agents of change with respect to business norms and values. Fisher et al. (2004) argue with examples taken from Singapore and New Zealand that economic development and maturity lead a convergence on Western and Asian management models and practices. During the Asian crisis in particular,

turnaround consultants and Western financial institutions have been instrumental in designing and executing turnaround efforts (Ahlstrom and Bruton, 2004, p. 17). Fisher et al. (2004) also ask whether there are even such things as “Western” or “Asian” management models – implying that as economies develop and mature, businesses adopt systems and best practices reflecting this advancement. These management systems could very well be universal, the conclusion of a “natural” process of complexification and maturation, and happens to be labeled “Western” because the U.S. and some European economies got there first.

Relating this trend to the topic of this thesis – asset and cost retrenchment in South Korea, one can reasonably assume that business practices have evolved in between the two crises of 1997-98 and 2008-09. If asset and cost retrenchment were not practiced by Korean firms during the Asian financial crisis, the change in management styles and turnaround practices since then could lead to a higher prevalence of “Western” turnaround efforts – e.g. asset and cost retrenchment – during the Global economic crisis. Thus *Hypothesis 5* posits that the role of asset and cost retrenchment in turnaround strategies in Korea during the 2008-09 will be more significant than during the “IMF crisis”.

4. Research question and objectives

4.1. Objective

This thesis will examine the impact of cost and asset retrenchment on all companies in Korea (through the analysis of a defined sample) during the Asian and Global financial crises. The objective of this thesis is to answer the following research question: *Which influence did asset and cost retrenchment have on the performance of Korean companies responding to the Asian financial crisis in 1997 and the Global Financial Crisis in 2008?*

The answer to this question, operationalized through the testing of relevant hypotheses (see 4.2.), will provide insight into the validity of retrenchment theories as defined in the literature review in the Korean context.

The Asian crisis and the Global financial crises constituted two major, pan-industry economic contractions and thus can be assumed to be the cause of economic or firm performance declines during those two periods. Corporate decline at those times can thus be assumed to be based on industry-wide contraction and not linked to the weaknesses of individual firms only.

4.2. Hypotheses to be tested

Hypothesis 1: Cost retrenching firms report lower performance levels overall throughout the crisis situation in Korea than non-cost retrenching firms.

Hypothesis 2: Asset retrenching firms report lower performance levels overall through the crisis in Korea than non-asset retrenching firms.

Hypothesis 3a: The impact of cost-retrenchment on firm performance in a crisis situation in Korea will be positive.

Hypothesis 3b: The impact of cost-retrenchment on firm performance in a crisis situation in Korea will be negative or non-existent.

Hypothesis 4a: The impact of asset-retrenchment on firm performance in a crisis situation in Korea will be positive

Hypothesis 4b: The impact of asset-retrenchment on firm performance in a crisis situation in Korea will be negative or non-existent.

Hypothesis 5: The generalization of “Western” business practices in Korea will lead to higher prevalence of asset and cost retrenchment strategies in South Korea during the Global Financial Crisis than during the Asian Financial Crisis.

4.3. Preliminary operationalization of key variables

This thesis seeks to identify the impact of two continuous independent variables, cost and asset retrenchment, on one dependent continuous variable, firm performance. The findings are triangulated based on a data sample of companies that are publicly listed in South Korea.

4.3.1. Study design

This thesis follows the statistical methodology proposed by Falkenberg et al. (2004), who studied the impact of asset and cost retrenchment on companies listed on the Singaporean stock exchange during the Asian financial crisis. Their proceedings were supported by the Wharton-Singapore Management University Research Center in Singapore, financed through a research grant from the Swiss National Foundation and presented at the 4th Asia Academy of Management Conference¹⁰. While their results were somewhat inconclusive, this previous work provides a natural stepping stone and methodological foundations for any further research on the topic of cost and asset retrenchment in Asia.

The *independent variables* in this analysis are cost and asset retrenchment. Because simple financial measures are not sufficient for creating reliable

¹⁰ *Moving Forward: Leading Asia in a New Era*, Shanghai, People's Republic of China, 2004.

indicators for changes in assets and costs of firms included in the sample, both variables were composed based on various balance sheet items.

Large sample studies performed in the past typically employed financial ratios to examine gains in efficiency, for example receivables on sales, cost of goods sold on sales, research and development expenditures on sales, and many others (see Hambrick and Schecter, 1983; Schendel and Patton, 1976; Falkenberg et al., 2004). Such study design raised criticism because all these ratios include sales in their denominators and thus, while they are dependent on changes in the numerator they are also sensitive to changes in sales (Falkenberg et al., 2004, p. 8). It is therefore difficult to determine with high statistical certainty whether efficiency gains would result from pure sales gains, retrenchment, or both (see Barker and Duhaime, 1997; Arogyaswamy et al., 1995).

In order to prevent ambiguous interpretation of the two independent variables, cost and asset retrenchment, they were constructed without relying on ratios in sales in the denominator; but rather through the use of selected items from firm balance sheets – in absolute numbers.

Large-sample study designs often used to investigate company performance in the past would select firms based on worsening performance and would then attempt to investigate the role of defined variables on their turnaround results (see for example Robbins and Pearce, 1992). The main problem is that

these study designs would not control for the cause of performance decline, which led to analytically heterogeneous samples. As mention, firm decline can result from external (industry-level) or internal (strategy-level) factors. By focusing on two major crises, this thesis reduces the research scope to the role of industry-wide contraction, since both the Asian financial crisis and the Global financial crisis constituted two major economic contractions affecting all industrial sectors – thus avoiding the analytical heterogeneity pitfall.

4.3.2. Operationalization of independent variables

Costs were measured by Falkenberg et al. (2004, p. 8) as the sum of operative expenses and total interest expenses. The cost retrenchment variable is defined as the (negative) delta of the costs measurement.

Cost and cost retrenchment are defined thusly:

COSTS	= <i>Operating Expenses + Interest Expenses Total</i>
COST RETRENCHMENT	= $-\Delta$ (<i>Operating Expenses + Interest Expenses Total</i>) = $Costs_t - Costs_{t-1}$

In similar fashion, assets were measured by Falkenberg et al. (2004, p. 8) as the sum of cash and due from banks, receivables, inventory, and property,

plants, and equipment (PPE). The asset retrenchment variable is defined as the (negative) delta of the assets measurement. COMPUSTAT, from which the dataset used for this thesis was derived from, differentiates between *Cash and Short-Term Investments* and *Cash and Cash Equivalents at End of Year*, the former including all forms of highly liquid assets while the later focuses quasi-cash characteristics. As *due from Banks* are non-interest bearing assets, *Cash and Cash Equivalents at End of Year* will be used here to operationalize the independent variable “ASSETS”. Additionally, while Falkenberg et al. (2004) do not specify whether they chose *net* or *gross* PPE for their computations, this thesis will rely on *net* PPE as a component of the “ASSETS” variable. *Net* PPE is a balance sheet item that takes the year’s PPE amortization and impairment costs into account and thus provides a truer view of the assets at the firm’s disposal.

Assets and asset retrenchment are defined thusly:

ASSETS	= <i>Cash and Cash Equivalent at End of Year + Receivables + Inventories + Property, Plants, and Equipment (PPE)</i>
ASSET RETRENCHMENT	= $-\Delta$ (<i>Cash and Cash Equivalent at End of Year + Receivables + Inventory + Property, Plants, and Equipment (PPE)</i>)

	$= Assets_t - Assets_{t-1}$
--	-----------------------------

4.3.3. Operationalization of dependent variables

The dependent variable is relatively straightforward: firm *performance*. Past studies (e.g. Robbins and Pearce, 1992) have preferred return on investment (ROI) or similar indicators to measure performance. Emulating Falkenberg et al. (2004), this thesis will utilize *return on assets* (ROA) as a measure of performance. Financial measures such as ROA, return on investment (ROI) or return on sales (ROS) are widespread, generally accepted indicators that deliver information on actual performance and can be considered reliable.

Performance and performance variation year-on-year will be measured in the following way:

PERFORMANCE	$= ROA * 100$ $= Performance_t - Performance_{t-1}$
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4.4. Dataset

This thesis is based on a dataset extracted from S&P Capital IQ's *Compustat Global*, which is managed by the Wharton School's WRDS service (Wharton Research Data Services) and accessible by subscription from Seoul National University. To quote the WRDS website, *Compustat Global* "is a database of non-U.S. and non-Canadian fundamental and market information on more than 33,900 active and inactive publicly held companies with annual data history from 1987 [...] The strength of *Compustat Global* is that it is normalized to provide comparability across a wide variety of global accounting standards and practices." This allows for more meaningful comparisons among industries and within territories.

The dataset was constructed by selecting key performance indicators (KPI) in order to best operationalize the variables derived from the thesis hypotheses. They include all publicly listed Korean corporations between 1995 and 2013, on the basis of completed fiscal years. The dataset was divided into two main samples for each crisis situation.

The first sample covers the 1996-1999 timeframe, which amounts to 548 observations for 137 companies, while the second sample focusing on the years 2006-2011 is composed of 2436 observations for 406 companies. While the initial dataset covered more firms for both samples, missing data and some inconsistencies had to be taken into account and thus resulted in the

deletion of a large number of entries. Additionally, firms that went public after a sample's starting year had to be eliminated to prevent them from influencing the statistical results.

To ensure optimal data quality, the decision was made to restrict investigations pertaining to the Asian crisis to 1996-1999 and not 1996-2000. The advent of a global economic slowdown in 2000, due to the burst of the dotcom bubble in the United States, would have added additional noise to the data and blurred the effects of the Asian financial crisis on the sample. It was also decided to start the sample in 1996 and not 1995 to provide a form of symmetry to the data: one year before the crisis, two years during the crisis and one year after.

This thesis also investigates the Global financial crisis, assuming that the magnitude of the crisis had an impact at the industry-level and not specifically at the firm-level, and thus can also be analyzed from the perspective of efficiency rather than strategy. Similarities and discrepancies with retrenchment patterns from the time of the Asian financial crisis may provide an interesting insight into the evolution of corporate and industrial policies in South Korea with respect to turnaround management over that ten year period. The impact of the Global financial crisis was also not as severe on Korea in comparison with the situation in 1997; retrenchment strategies may also be linked to how severe a crisis is.

The data sample constructed for the Global financial crisis (GFC) starts in 2006 and ends in 2011, based on the following pattern: two pre-crisis years, two crisis years and two post-crisis years. It was decided to select 2008 and 2009 as crisis years as the effects of the Global financial crisis had repercussions over Korea with approximately a one-year lag. Although the crisis arguably started in 2007 in the United States, South Korea's GDP annual growth rate turned negative in the last quarter of 2008 and for half of 2009 (Exhibit 1). Authors such as Jeon (2010) also consider 2008 and 2009 to constitute the GFC crisis period for Korea.

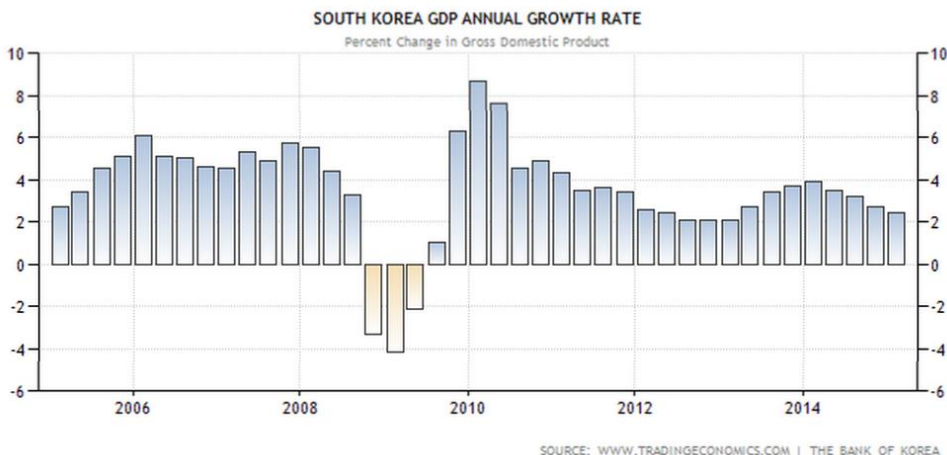


Exhibit 1: GDP Quarterly Growth Rate for South Korea, 2005Q1-2015Q1.

Source: TradingEconomics.com

4.5. Statistical methodology

The core of this thesis' research methodology is based on mean comparison (T-Test) and regression analyses. Hypotheses 1 and 2 will be analyzed with *T-Tests*, while a *linear regression model* will be estimated to analyze hypotheses 3 and 4, in order to provide a detailed examination of the relationship between the *performance* variable (return on assets – ROA), assets and costs at any particular point in time.

In a third step, should the linear regressions yield a strong correlation between assets and costs, this would imply that asset and cost retrenchment are likely to appear either together or not at all. In this case, a *random effects model* (panel data analysis) will be investigate the relationship between cost and asset retrenchment under the assumption of strict exogeneity.

Because the return on assets indicator is correlated over time for the same company (future sales are a function of past performance), all regressions were performed with the use of the heteroscedasticity and autocorrelation covariance estimator developed by Newey and West (1987), which is robust to both autocorrelation and heteroscedasticity of unknown form. Following Falkenberg et al. (2004), the OLS method (Ordinary Least Squares) was preferred to produce linear estimates that were the least unbiased. Regression models were executed using Eviews 7.2 for both data samples.

5. The Asian Financial Crisis

5.1. Sample description

As mentioned, the sample covers 137 firms with 548 observation over the years 1996-1999. To avoid the potential effects of the bursting of the American dotcom bubble, the sample does not cover the year 2000. One pre-crisis year, two crisis years and one year of potential recovery were deemed a suitable observation period.

To establish a first rough estimate of the prevalence of cost and asset retrenchment among publicly listed South Korean firms between 1996 and 1999 were classified as either cost or asset retrenching firms, if their costs or respectively their assets had decreased by more than 5% from 1996 to 1999. Conversely, if a company's costs or assets had diminished by less than 5% or had even increased between 1996 and 1999, it was classified as non-cost retrenching or non-asset retrenching firm. Arguably, a decrease of more than 5% over four years should be considered significant enough so as to represent an occurrence of retrenchment. Table 1 provides the breakdown between firms that retrenched in costs but in assets, firms that retrenched in assets but not in costs, firms that retrenched in both aspects, and finally those firms that did not retrench in any way.

	Asset retrenching	Non-asset retrenching	Σ
Cost retrenching	16	13	29
Non-cost retrenching	16	92	108
Σ	32	105	137

Table 1: Classification of cost and asset retrenching firms, 1996-1999

Out of 137 firms in the sample, two thirds (67.15%) did not retrench in any way, while only 29 proceeding to retrenching their costs and 32 to retrenching their assets. Although almost the same amount of firms resorted to asset or cost retrenchment, less than half of both groups were found to retrench both assets and costs simultaneously. This is quite remote from the findings of Falkenberg et al. (2004) with respect to listed Singaporean companies during the same time period: only 33 out of the 134 firms in their sample did *not* retrench either assets or costs, and the majority of retrenching firms resorted to both asset and cost retrenchment over the sample period. This hints that South Korean companies probably turn to asset retrenchment measures in last resort and that retrenching is not a common strategy for companies in Korea.

In terms of industry structure, the data sample was analyzed using the Global Industry Classification Standard (GICS), which has been jointly developed by Standard & Poor's and MSCI Barra since 1999. The GCSI is a globally recognized standard for categorizing companies in sectors and industries

(S&P Indices, 2008, p. 3ff). As shown in Exhibit 2, the industries encompassing the most firms in the sample are food products (19), textiles, apparel and luxury goods (12), construction & engineering (11), chemicals (11) and metals & mining (10).

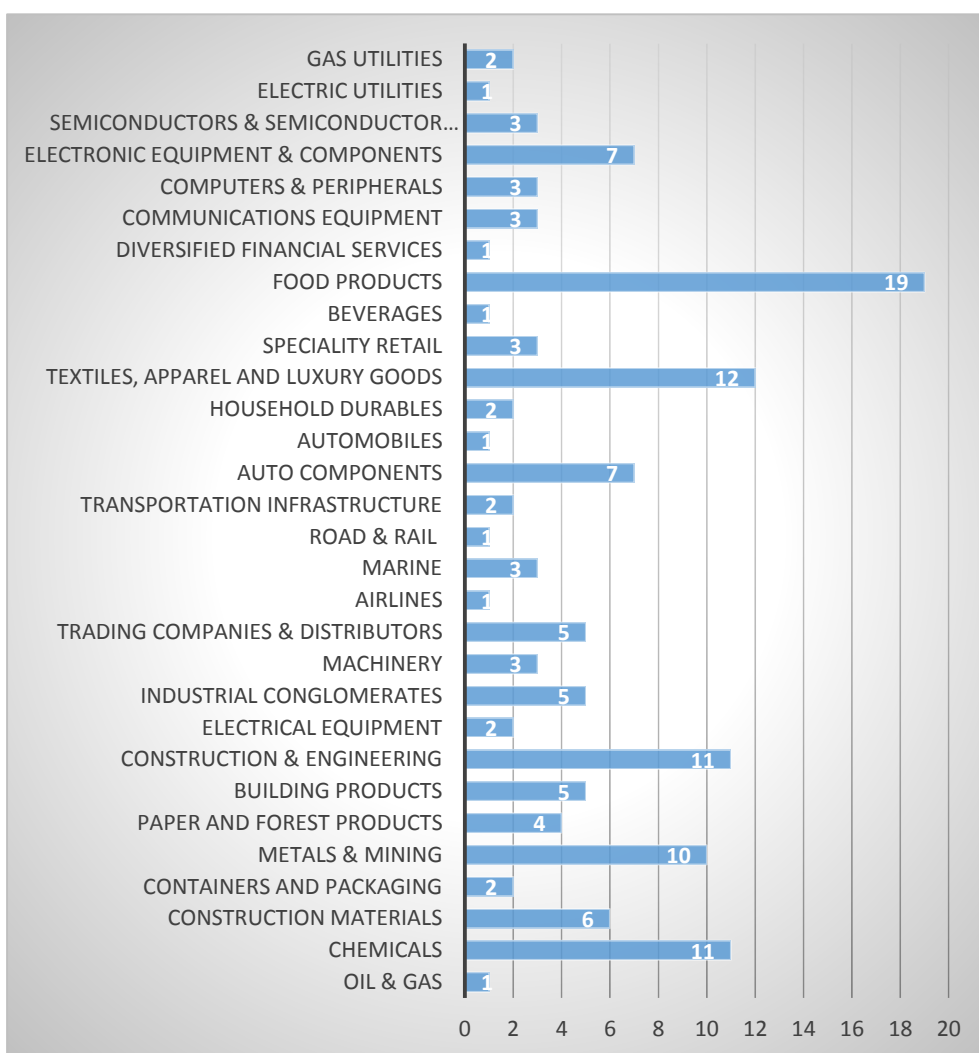


Exhibit 2: Data sample by industry, 1996-1999

Combining firms into industry groups (Exhibit 3) reveals that Materials (24%) and Capital Goods (23%) are the two main drivers of the sample, while Foods, Beverage and Tobacco (15%), Consumer, Durables and Apparel (10%), and Technology, Hardware and Equipment (9%) also represent significant portions of the sample data.

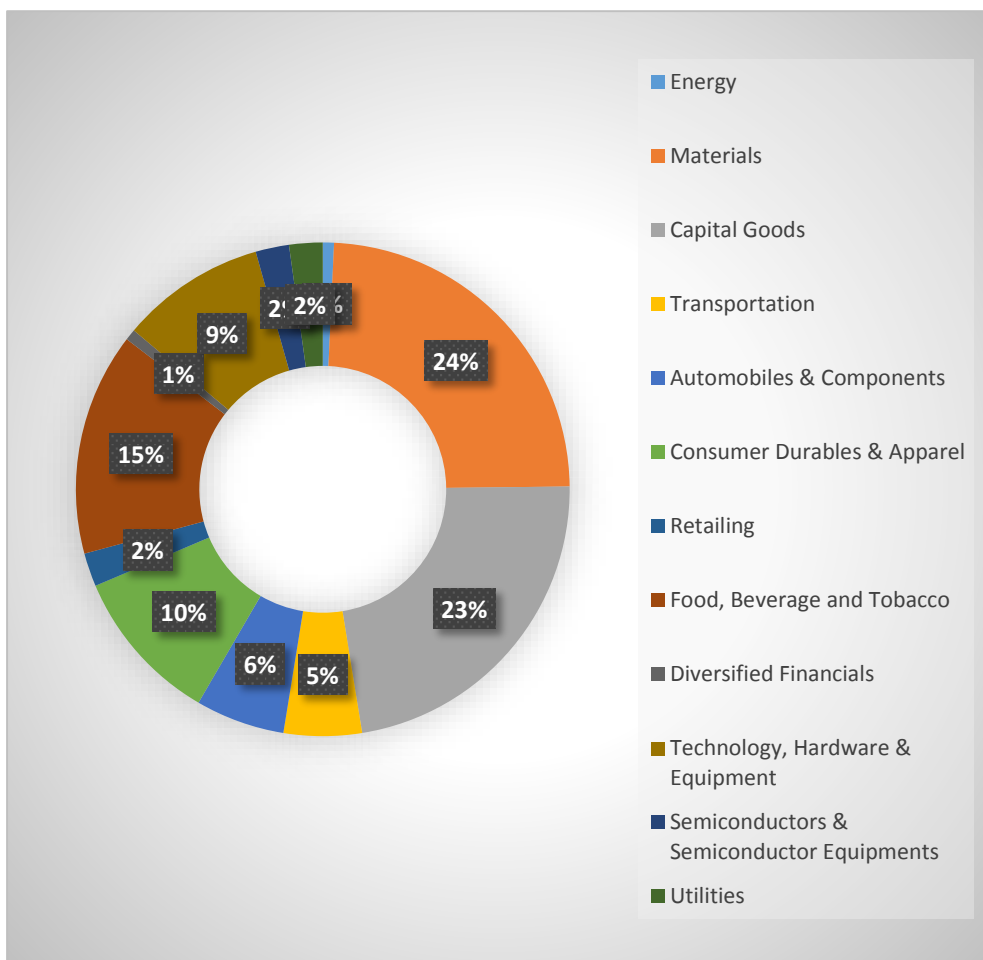


Exhibit 3: Data sample by industry group, 1996-1999

The financial sector in general – and banks in particular – are entirely absent from this sample for various reasons. First, the metrics used in this thesis apply to service and industrial firms – financial companies do not have the same balance sheet structure as “brick and mortar” businesses, which would make their integration into the set questionable. For example, banks do not report inventories or receivables, as well as “operating” expenses (in the traditional sense). A second reason for their non-inclusion is that the Asian financial crisis took such a toll on Korean financial institutions that overall data quality is difficult to maintain. Many banks and investment firms did not report their net income (loss) for some years. Another sector that is absent from this sample is the nascent software and internet services industry, of which only a few were publicly traded at the time and not over the entire observation period.

5.2. Findings

5.2.1. Analyses of Hypotheses 1 and 2: T-Tests

As mentioned, Hypothesis 1 states that cost retrenching firms have faced lower performance levels throughout the Asian financial crisis in South Korea, compared to firms that did not retrench their costs. Similarly, Hypothesis 2 posits that asset retrenching firms reported lower performance levels than non-asset retrenching companies. Following these assumptions, the average return on assets (ROA) of cost retrenching respectively asset retrenching

companies should be significantly lower than the average ROA reported by non-cost retrenching and non-asset retrenching companies. Table 2 and 3 provide an overview of the *T-Test* results. Are considered cost respectively asset retrenching companies that decreased their costs respectively their assets by more than 5% between 1996 and 1999.

Mean performance	Sample	Cost Retrenching Firms	Non Cost Retrenching Firms	t-value	p-value
1996	0,825640149	0,327805304	0,959318024	-1,69040092642935*	0,095973513
1997	0,299786579	-1,264437138	0,719809614	-2,60430418890822**	0,013294993
1998	-1,290293234	-7,509071906	0,379564002	-1,67156142	0,105368881
1999	0,923451859	-3,683982034	2,160633182	-1,75566788963714*	0,089704077
avg ROA 96-99	0,189646338	-3,032421443	1,054831205		
Σ	137	29	108		

** significant at the 5% level, * significant at the 10% level

Table 2: Mean performance analysis – Cost and Non-Cost Retrenching Firms, 1996-1999

Mean performance	Sample	Asset Retrenching Firms	Non Asset Retrenching Firms	t-value	p-value
1996	0,825640149	0,515925747	0,9200293	-0,883631012	0,381210473
1997	0,299786579	-0,503156981	0,544493188	-1,495249762	0,141987602
1998	-1,290293234	-8,319662343	0,851990685	-2,03328574498525**	0,050387609
1999	0,923451859	-2,237659691	1,886838236	-1,326326625	0,194120451
avg ROA 96-99	0,189646338	-2,636138317	1,050837852		
Σ	137	32	105		

** significant at the 5% level

Table 3: Mean performance analysis – Asset and Non-Asset Retrenching Firms, 1996-1999

Both the minimum and maximum mean performances seem plausible, yet the extreme plunge in 1998 for cost retrenching respectively asset retrenching companies suggests that only companies facing major losses opted for

retrenchment. There is clearly a pattern however: non-retrenching companies performed better than their retrenching counterparts over the four years and were more likely to withstand the depth of the crisis with more limited performance losses (Exhibit 4). Performance is at the highest in the pre-crisis year, 1996, with a minimum in 1998 for non-cost retrenching firms and in 1997 for non-asset retrenching firms. 1999 is a year of recovery and even upswing for non-retrenching firms, surpassing their ROA of 1996. Retrenching firms however continue to report negative performance, albeit in less dramatic fashion than in 1998.

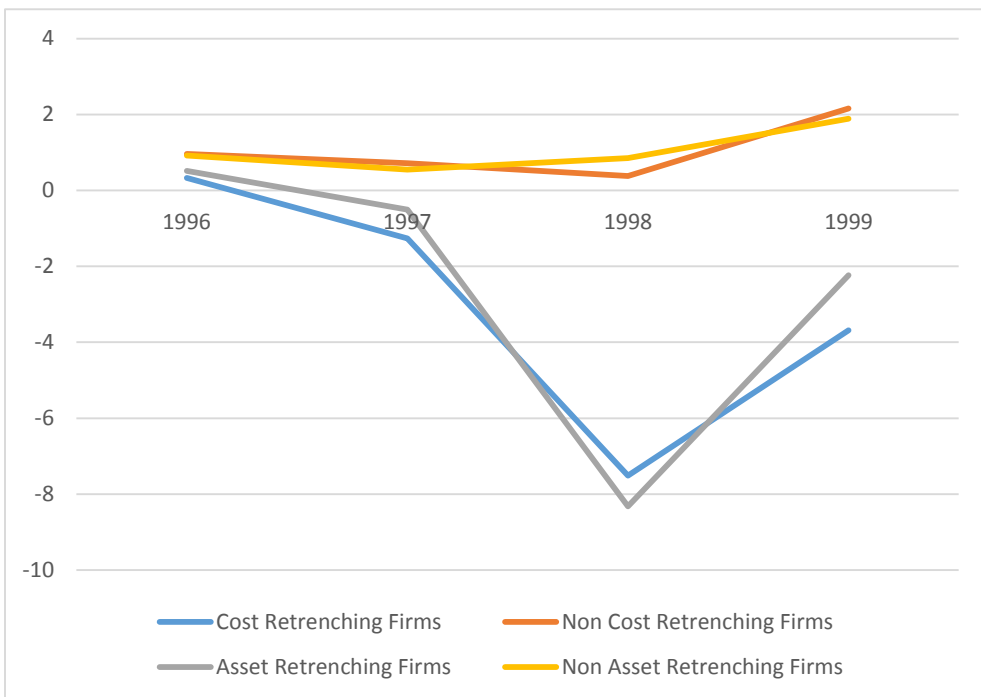


Exhibit 4: Mean performance analysis, 1996-1999.

While not as strongly significant as one could have hoped, the results of the *T-Tests* for cost and non-cost retrenching firms are rather clear: the differences in average return on assets between cost and non-cost retrenching companies are relatively significant for the entire period, and highly significant for 1997 (95% significance level). The t-value for 1998, while low, is only marginally below the 10% significance level. These findings do represent support for Hypothesis 1.

Results for Hypothesis 2 are rather weak however. Despite statistical significance for 1998, the *T-Tests* yielded low t-values and accordingly high p-values for the other three years. While the small subsample of asset (and cost) retrenching companies could be the reason for these non-significant results, one reason could be a bias in the subset due to the presence of massively retrenching companies extremely close to bankruptcy, which were responsible for the extreme downswing recorded for 1998 and did not retrench their assets in a significant way beforehand – thus yielding insignificant t-tests for years other than 1998. In this situation and despite the obvious difference in firm performances as displayed in Exhibit 4, Hypothesis 2 cannot be formally rejected.

5.2.2. Analyses of Hypotheses 3 and 4: Regression model

While the *T-Tests* qualified the differences in average performance between retrenching and non-retrenching companies, they did not provide information

as to the relationship between performance, assets and costs at a particular point in time. This is examined by means of the following linear regression model:

$$ROA_{i,t} = \alpha + \beta_1 * asset_{i,t} + \beta_2 * cost_{i,t} + \varepsilon_{i,t}$$

Where I is an indicator of a firm and t signifies time.

The corresponding estimation in first differences yields the following regression equation, which eliminates a time-invariant error term:

$$\Delta ROA_{i,t} = \alpha + \beta_1 * \Delta asset_{i,t} + \beta_2 * \Delta cost_{i,t} + \Delta \varepsilon_{i,t}$$

As a first step, the equation of the linear regression model is estimated by ordinary least-square (OLS) and with the use of the Newey and West (1987) heteroscedasticity and autocorrelation estimator (HAC). Second, the first differences equation is estimated; and third, the linear regression model is estimated a second time as a random effects specification (panel analysis), where $\varepsilon_{i,t}$ represents a firm-specific time-invariant error term and a time-varying error term.

Dependent Variable: DELTA_ROA				
Method: Least Squares				
Sample (adjusted): 138 548				
Included observations: 411 after adjustments				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 2.8152, NW automatic lag length = 5)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.23E-05	0.462100	-0.000135	0.9999
DELTA_ASSET	3.00E-08	1.57E-07	0.190981	0.8486
DELTA_COST	1.20E-07	9.82E-08	1.225728	0.2210
R-squared	0.000306	Mean dependent var		0.032604
Adjusted R-squ	-0.004594	S.D. dependent var		8.743295
S.E. of regressio	8.763357	Akaike info criterion		7.186308
Sum squared re	31332.94	Schwarz criterion		7.215641
Log likelihood	-1473.786	Hannan-Quinn criter.		7.197911
F-statistic	0.062440	Durbin-Watson stat		2.052370
Prob(F-statistic)	0.939479			

Table 4: Regression of Δ Performance on Δ Assets and Δ Costs, 1996-1999

The model for the second regression equation was performed first. As depicted in Table 4, the model yields a very low R-square of 0.000306, which is a sign of an extremely weak fit between the model and the data. The F-value for the model is as low as 0.062440 (also very low) with a significance level of 0.939479. Despite a stronger t-significance for Δ Costs (1.225728 for a p-value of 0.2210) than Δ Assets (with a t-statistic of 0.190981 for a p-value of 0.8486), both independent variables were insignificant. The regression was

performed again twice with only one independent variable for certainty, and did not yield different results in terms of significance.

The high insignificance level of the findings may result from taking first differences for the regression analysis, which can cause a large loss of information (Falkenberg et al., 2004, p. 15). The next step is to generate estimates of the initial regression equation. The results are provided in Table 5:

Dependent Variable: PERFORMANCE				
Method: Least Squares				
Sample: 1 548				
Included observations: 548				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 10.0735, NW automatic lag length = 5)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015066	0.419778	0.035890	0.9714
ASSETS	6.85E-08	2.72E-08	2.522899	0.0119
COSTS	2.42E-08	2.03E-08	1.187998	0.2354
R-squared	0.002317	Mean dependent var		0.189646
Adjusted R-squared	-0.001344	S.D. dependent var		8.386186
S.E. of regression	8.391818	Akaike info criterion		7.097851
Sum squared residuals	38380.33	Schwarz criterion		7.121425
Log likelihood	-1941.811	Hannan-Quinn criter.		7.107065
F-statistic	0.632970	Durbin-Watson stat		2.029471
Prob(F-statistic)	0.531402			

Table 5: Regression of Performance on Assets and Costs, 1996-1999

The model again indicated that only a very limited portion of firm performance can be explained by the two independent variables, costs and assets, as Eviews returned an R^2 of 0.002317. The F-value is not significant either (0.633), while the p-value clocked in at 0.53. Although the value of R^2 can be considered less critical to the validity of the model if there is strong statistical significance, it is not the case in this model and thus the null hypothesis that both the “assets” and “costs” regressors do not significantly impact performance cannot be rejected. Yet at the single regressor level, there is a strong discrepancy between the individual impact of assets and costs over ROA: the t-statistic for assets is almost significant at the 1% level (p-value 0.0119), while the t-statistics for costs remain strongly insignificant (1.188 for a p-value of 0.2354). The variable “assets” is a significant regressor that would tend to positively influence ROA, which would be contrary to what Hypothesis 4b posits and would support Hypothesis 4a. This positive influence of assets on performance is marginal at best however, given the coefficient of $6.85e^{-8}$ for the “assets” variable.

The 32 asset retrenching firms in the 1996-1999 sample retrenched an average of 222112.45, which – using the coefficient for “assets” from the model ($6.85e^{-8}$) – yields an improvement of 0.0152 percentage points in average performance (i.e. ROA). Non-asset retrenching companies (105) have

increased their assets by 863976.98 on average, which would be equivalent to an average performance decrease of 0.05918 percentage points.

Regarding costs, the variable in the model is insignificant and the regression coefficient even lower than for assets. Arguably, the influence of cost retrenchment on performance is extremely small, if non-existent. These findings provide some support for Hypothesis 3b. As a next step, the regression is performed again twice – this time using only one independent variable as regressor. The results are compiled in Tables 6 and 7.

Dependent Variable: PERFORMANCE				
Method: Least Squares				
Sample: 1 548				
Included observations: 548				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 15.0390, NW automatic lag length = 5)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.078707	0.403109	0.195250	0.8453
COSTS	5.33E-08	2.84E-08	1.876877	0.0611
R-squared	0.001080	Mean dependent var		0.189646
Adjusted R-squared	-0.000749	S.D. dependent var		8.386186
S.E. of regression	8.389328	Akaike info criterion		7.095441
Sum squared residuals	38427.93	Schwarz criterion		7.111157
Log likelihood	-1942.151	Hannan-Quinn criter.		7.101583
F-statistic	0.590380	Durbin-Watson stat		2.021989
Prob(F-statistic)	0.442604			

Table 6: Regression of Performance on Costs, 1996-1999

Dependent Variable: PERFORMANCE				
Method: Least Squares				
Sample: 1 548				
Included observations: 548				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 6.6981, NW automatic lag length = 5)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043991	0.398577	0.110370	0.9122
ASSETS	8.03E-08	3.43E-08	2.342375	0.0195
R-squared	0.002142	Mean dependent var		0.189646
Adjusted R-squ	0.000314	S.D. dependent var		8.386186
S.E. of regressio	8.384868	Akaike info criterion		7.094377
Sum squared re	38387.08	Schwarz criterion		7.110094
Log likelihood	-1941.859	Hannan-Quinn criter.		7.100520
F-statistic	1.171912	Durbin-Watson stat		2.029741
Prob(F-statistic)	0.279487			

Table 7: Regression of Performance on Assets, 1996-1999

The first regression, performance on costs, yields marginal significance (<10% confidence interval) for the independent variable “costs” (t-statistic: 1.8769 for a p-value of 0.0611). The F value for the regression model is 1.1719 with a p-value of 0.2795. In the second regression, performance on assets, the “assets” variable is significant at the 5% level, with a t-statistic of 0.0195 for a p-value of 0.0195. The F value of the model however remains low (1.1719), which is equivalent to a significance level of 0.28. The null hypothesis cannot be formally rejected within this model.

In order to investigate a potential correlation between cost and asset retrenchment, a regression of assets on costs was computed (Table 8). The result is unequivocal: Costs as an independent variable are highly – even strictly – significant with a t-value of 7.1212 for a p-value of 0.00. The F-statistic is also high significant, yielding 142.6475 for a p-value of 0.00. Clearly, the null hypothesis in this regression analysis that the regressor – costs – has no impact whatsoever on the dependent variable – assets – is rejected.

Dependent Variable: ASSETS				
Method: Least Squares				
Sample: 1 548				
Included observations: 548				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 17.7757, NW automatic lag length = 5)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	928497.4	133079.2	6.977028	0.0000
COSTS	0.425760	0.059788	7.121203	0.0000
R-squared	0.207141	Mean dependent var		1813957.
Adjusted R-squ	0.205689	S.D. dependent var		4833371.
S.E. of regressio	4307698.	Akaike info criterion		33.39335
Sum squared re	1.01E+16	Schwarz criterion		33.40906
Log likelihood	-9147.778	Hannan-Quinn criter.		33.39949
F-statistic	142.6475	Durbin-Watson stat		2.044943
Prob(F-statistic)	0.000000			

Table 8: Regression of Assets on Costs, 1996-1999

Following Falkenberg et al. (2004, p. 17ff), it can be inferred from this regression analysis that the estimated coefficient of costs is to be interpreted as the following equation – the covariance between assets and costs divided by the variance of costs:

$$\beta = \frac{cov(assets, costs)}{var(costs)}$$

From this equation, the correlation coefficient between asset retrenchment and cost retrenchment, ρ , can be computed as seen below. It is defined as the covariance of assets and costs divided by the square root of the product of variances of assets and costs (p. 18). Consequently, computing the ρ -value using the covariance and two variances yields 0.455128.

$$\rho = \frac{cov(assets, costs)}{\sqrt{var(assets) * var(costs)}}$$

Accordingly, it is often difficult to interpret the significance of a correlation coefficient in econometrics – yet a ρ -coefficient of 0.455 can be considered as a somewhat robust correlation. In other words, cost retrenchment and asset retrenchment are relatively likely to appear in pairwise fashion: either together or not at all. As Falkenberg et al. (2004) have shown in their study of the Singaporean data, performing regressions is thus misleading because the two independent variables, asset retrenchment and cost retrenchment, are correlated. In the Singapore case, the authors' data yielded a correlation

coefficient of 0.69809, which can be considered strongly significant in comparison with the less significant ρ -coefficient of 0.455 that the Korean sample returned. Yet the assumptions are the same for both situations. The relationship between asset retrenchment and cost retrenchment is depicted in the following correlogram (Exhibit 5, in absolute values).

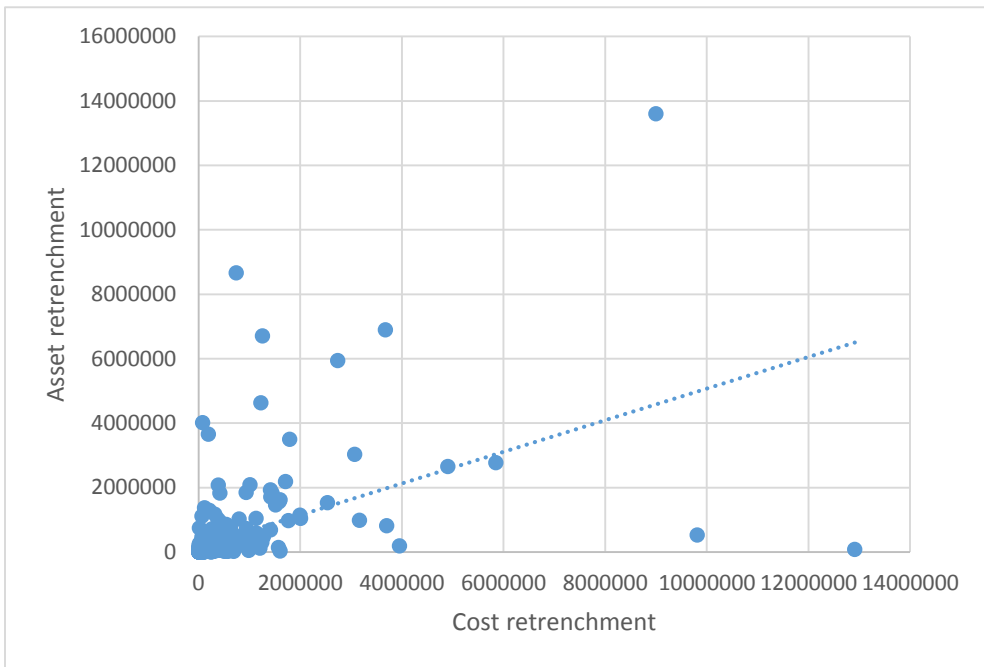


Exhibit 5: Correlogram, asset retrenchment and cost retrenchment, 1996-1999

The last step of this statistical analysis is to estimate a random effects model (REM), which provides a more efficient estimation under the assumption of strict exogeneity. To quote Falkenberg et al. (2004, p. 19), a REM “assumes that the intercept β_{1i} is the sum of a common constant β_1 and a time-invariant firm-specific random variable ϵ_i ” that is “uncorrelated with the residual u_{it} .”

Strict exogeneity does not require any feedback between regressors and error terms, as the error term does not influence future values of costs and assets. While Falkenberg et al. computed their random effects variable using the GLS method, the REM for this Korean dataset will be performed using the Pooled EGLS method, which takes advantage of additional bias adjustments described in Baltagi (2005). The result is provided in Table 9:

Dependent Variable: PERFORMANCE				
Method: Panel EGLS (Cross-section random effects)				
Sample: 1996 1999				
Periods included: 4				
Cross-sections included: 137				
Total panel (balanced) observations: 548				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000780	0.553150	-0.001410	0.9989
ASSETS	6.71E-08	1.13E-07	0.596233	0.5513
COSTS	3.30E-08	1.05E-07	0.312928	0.7545
Effects Specification				
			S.D.	Rho
Cross-section random			4.812229	0.3263
Idiosyncratic random			6.914384	0.6737
Weighted Statistics				
R-squared	0.001427	Mean dependent var		0.110651
Adjusted R-squ	-0.002237	S.D. dependent var		6.894929
S.E. of regressio	6.902637	Sum squared resid		25967.29
F-statistic	0.389520	Durbin-Watson stat		1.605112
Prob(F-statistic)	0.677570			
Unweighted Statistics				
R-squared	0.002291	Mean dependent var		0.189646
Sum squared re	38381.34	Durbin-Watson stat		1.085955

Table 9: Random Effects Model, 1996-1999

The random effects model yields an R^2 of 0.001427, which is one of the lowest compared with the regression analyses above. While the positive signs of the coefficients oppose Hypotheses 3b and 4b, and support Hypotheses 3a and 4a, both independent variables “assets” and “costs” are highly insignificant with t-values of 0.596233 and 0.312928, respectively (which are equivalent to p-values of 0.5513 and 0.7545). The magnitudes of the coefficients remain in the same ballpark as those computed in the second regression.

It is clear from the results of the random effect model that costs and assets, and their retrenchment, did not have much influence on company performance in Korea during the years 1996-1999. It is self-explanatory that Hypotheses 3a and 4a are rejected, while Hypotheses 3b and 4b receive some support. While the initial regressions showed some significance for the “assets” variable relative to firm performance, correlation is indeed no causation. These results may hint that assets are not used as an adjustment variable by management in order to increase efficiency in times of crisis, but rather that the crisis has taken such a toll on the company that the actual amount of assets on the balance sheet must be decreased. In other words, asset decreases are a direct result of net losses and are not actively managed – a consequence, not a cause of performance decline.

Regarding the impact of costs, it is quite plausible that this variable cannot yield any significant result due to the very particular situation in the corporate debt market in South Korea during the Asian financial crisis. The sudden and massive exodus of foreign capital, the need for immediate repayment of short-term debt and the near-impossibility to roll-over maturing debt meant that interest-related costs exploded (+85% in 1998 compared with 1996). Most listed companies in Korea at the time were not able to keep rising operational costs under control as well (+27.6% between 1996 and 1998). Exhibit 6 provides an overview of the growth of both cost items over the years 1996 to 1999. Assets also grew during the crisis (+33% between over the 1996-1998 period), despite low and – for many firms – negative ROAs, which may result from internal movements within conglomerates, as the least performing or even bankrupt companies were integrated into other business groups. This could have led to their survival in the data sample and their adding to total assets and costs.

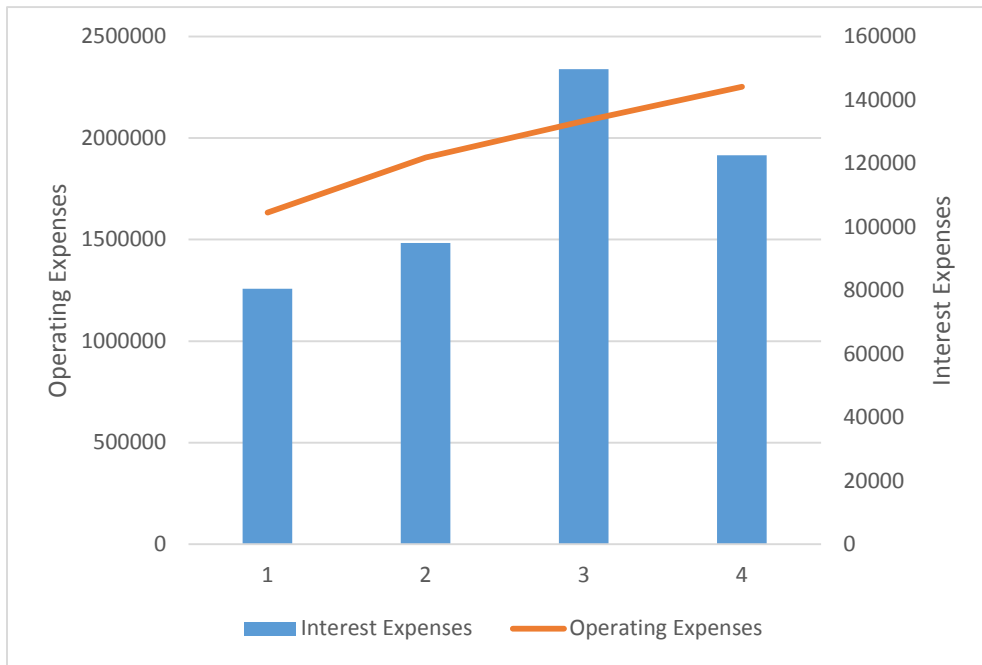


Exhibit 6: Interest-related expenses and operative expenses, 1996-1999

One other explanation for the growth of assets and costs could be the impact on the data of the Korean government’s “Big Deals” program, which was in essence an industrial consolidation plan. The Ministry of Trade, Industry, and Energy (MITE) identified ten industries that required imminent restructuring and proceeding to regroup and consolidate the major players in each category (Sohn, 2002, p. 14). The impact on the dataset could be that divested or consolidated firms (merged into another company) violate the going concern assumption and thus are excluded of the sample, while conglomerates on the receiving end (ordered to incorporate failed businesses as decided by the MITE) saw their balance sheet and cost structure massively expand.

6. The Global Financial Crisis

6.1. Sample description

The sample taken into consideration to analyze the performance of Korean publicly listed firms with respect to asset and cost retrenchment during the Global Financial Crisis is composed of 2436 observations for 406 companies. Two pre-crisis years, two crisis years and two years of potential recovery were deemed a suitable observation period and thus the sample covers the years 2006 to 2011.

To estimate the prevalence of cost and asset retrenchment among Korean firms, companies were divided into two groups based on retrenchment magnitude. Firms that reported costs or assets to have diminished by more than 5% between 2006 and 2011 were classified as cost respectively asset retrenching companies, while those that reported costs or assets increasing or diminishing by less than 5% between 2006 and 2011 were deemed to be non-cost respectively non-asset retrenching firms.

Table 10 categorizes sample companies into four groups: companies that retrenched both costs and assets, those that retrenchment their costs only, those that retrenched their assets only, and those that did not proceeding to any form of cost or asset retrenchment at all.

	Asset retrenching	Non-asset retrenching	Σ
Cost retrenching	47	24	71
Non-cost retrenching	18	317	335
Σ	65	341	406

Table 10: Classification of cost and asset retrenching firms, 2006-2011

Similarly to the Asian financial crisis (AFC) sample, only a minority of firms resorted to cost or asset retrenchment. 71 companies (17.5% of the total sample) proceeded to retrench their costs, while 65 of them (16%) did so with their assets. A mere 18 companies retrenched both items. Again, this may hint that South Korean companies probably turn to asset retrenchment measures in last resort and that retrenching is not a common strategy for companies in Korea. This is a pattern that was quite clear in the Asian financial crisis (approximately one-fifth of the companies in the first sample retrenched either costs or assets) and seems to repeat itself in the Global financial crisis (GFC). It should be taken into consideration however that the GFC did not have as dramatic an effect on the Korean economy as the AFC, which may explain the lower extent of cost and asset retrenchment in the second sample.

In terms of industry and sector distribution, the 2006-2011 sample was also analyzed using the Global Industry Classification Standard (GCIS). Exhibit 7 displays the industry breakdown of the sample dataset; the main industries are

Automobile Components and Chemicals (39 companies each), followed by Electronic Equipment and Components (29), Construction & Engineering (24), Semiconductors & Semiconductor Equipment (23), Food Products (23) and Metals and Mining (21). Textiles, Apparel & Luxury Goods (20), Machinery (19) and Electrical Equipment (18) also hold an important weight in the sample. Compared with the 1996-1999 breakdown, clearly the Korean economy has transitioned towards higher added value electronics and of course services: the media appear in the 2006-2008 sample for the first time (8), along with various high-end services such as healthcare (10).

In terms of industry sectors (Exhibit 8), Materials (21%) and Capital Goods (20%) amount to over two-fifth of the data sample, followed by Technology, Hardware and Equipment (10%), Automobiles & Components (10%) and Consumer Durables & Apparel (9%). Food, Beverages & Tobacco (7%) and Semiconductor and Semiconductor Equipment (6%) also hold significant shares.

Again, the financial sector and banks in particular are not represented in this dataset due to the choice of variable operationalization. Financial institutions do not report the same balance sheets items in terms of what constitutes “assets” and also rely on different cost structures. Only two firms considered as “diversified financial services” were included in the sample of the basis of balance sheet compatibility.

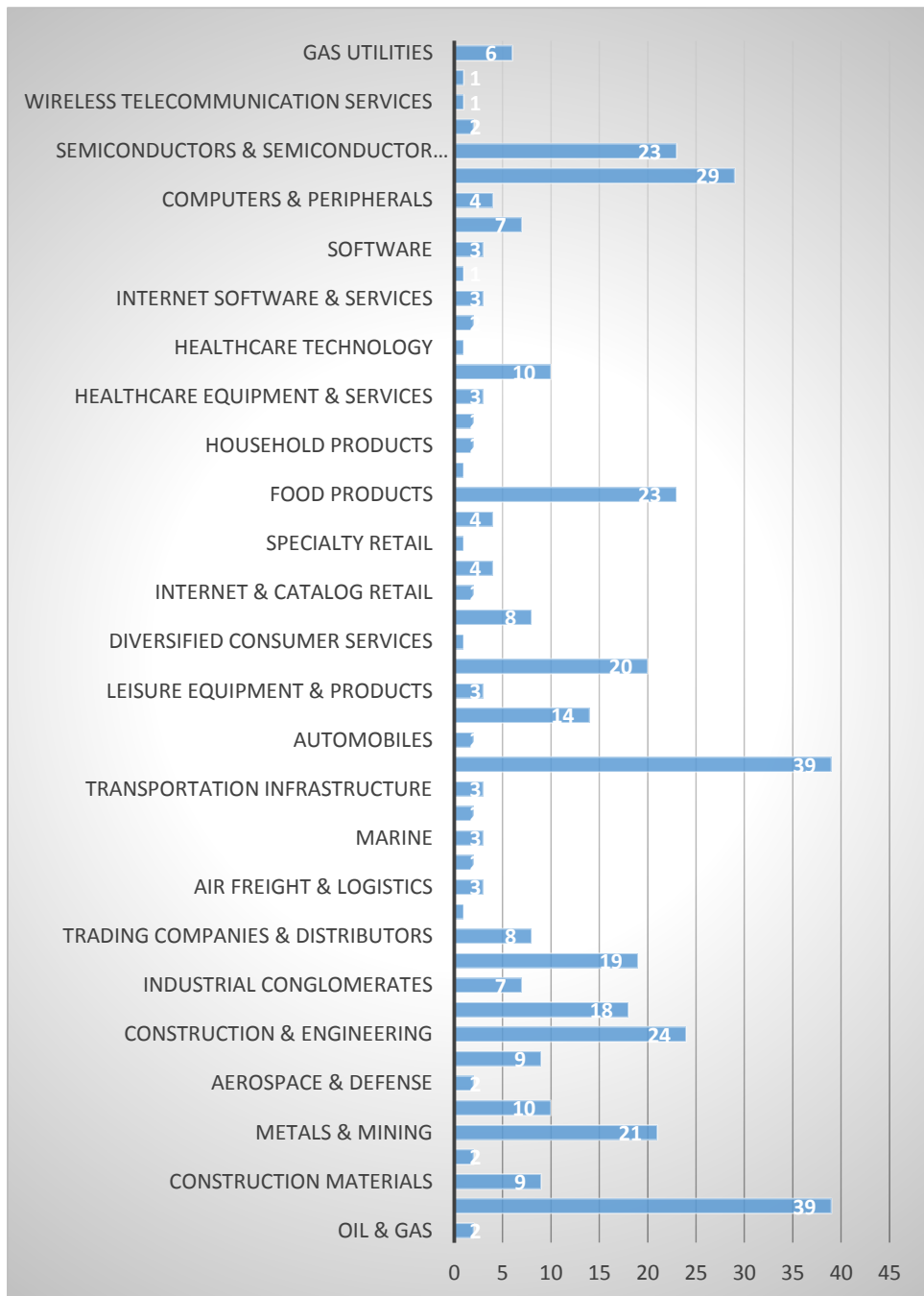


Exhibit 7: Data sample by Industry, 2006-2011

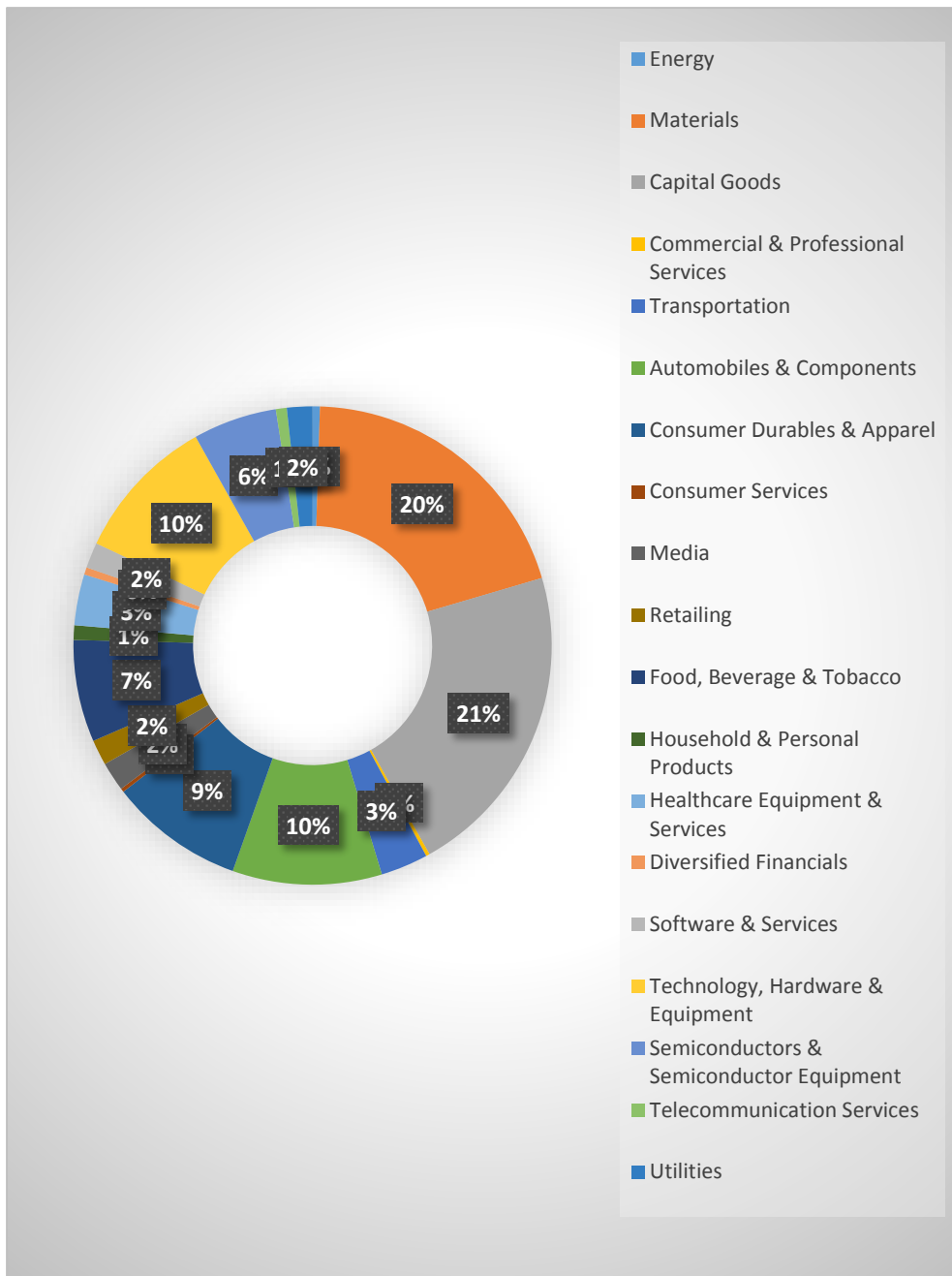


Exhibit 8: Data sample by industry group, 2006-2011

6.2. Findings

6.2.1. Analyses of Hypotheses 1 and 2: T-Tests

The first two hypotheses tested in this thesis state that cost retrenching firms and asset retrenching firms in South Korea report lower performance levels during the defined crisis period than their non-cost retrenching respectively non-asset retrenching counterparts. Based on operationalization of these assumptions, the average performance (e.g. *mean return on assets* – ROA) of cost and/or asset retrenching companies should be significantly lower than the average performance of non-cost respectively non-asset retrenching firms. Hypotheses 1 and 2 were verified with two *t*-tests, the results of which are summarized in Tables 11 and 12.

Mean performance	Sample	Cost Retrenching Firms	Non Cost Retrenching Firms	t-value	p-value
2006	1,890644557	-1,858665554	2,685274461	-2,19755135166733**	0,030801577
2007	2,207677934	-1,401582571	2,972625683	-2,27204139154807**	0,025950921
2008	-0,520639063	-3,108349309	0,027801019	-1,514093291	0,132392974
2009	2,355992357	-3,060084529	3,59384892	-4,68253555448213*****	0,0000101
2010	2,951308848	-0,18509211	3,616038603	-3,38011044439086****	0,001096177
2011	-0,48383687	-10,45901534	1,630305432	-2,37378238114802**	0,020315224
avg ROTA 06-11	1,400191294	-3,345464902	2,420982353		
Σ	406	71	335		

***** significant at the 0.01% level; ***** significant at the 0.05% level;

***** significant at the 0.1% level; **** significant at the 0.5% level; *** significant at the 1% level;

** significant at the 5% level; * significant at the 10% level

Table 11: Mean performance analysis – Cost and Non-Cost Retrenching Firms, 2006-2011

Mean performance	Sample	Asset Retrenching Firms	Non Asset Retrenching Firms	t-value	p-value
2006	1,890644557	-1,505837811	2,538067882	-1,77843546939586*	0,079553977
2007	2,207677934	-1,496137392	2,913683788	-2,15735384206109**	0,034514815
2008	-0,520639063	-3,232992263	-0,003621591	-1,480115982	0,14170074
2009	2,355992357	-2,752527737	3,329757185	-3,95102675265951*****	0,000166742
2010	2,951308848	0,108610481	3,493172173	-2,86009969797588***	0,005465261
2011	-0,48383687	-9,735121217	1,279604428	-2,00175691874029**	0,049487847
avg ROTA 06-11	1,400191294	-3,102334323	2,258443977		
Σ	406	65	341		

***** significant at the 0.01% level; ***** significant at the 0.05% level;
 ***** significant at the 0.1% level; **** significant at the 0.5% level, *** significant at the 1% level; ** significant at the 5% level; * significant at the 10% level

Table 12: Mean performance analysis – Asset and Non-Asset Retrenching
 Firms, 2006-2011

The result magnitude in terms of performance across the sample and within the four categories seems credible. The maximum and minimum average performances are plausible, although it seems that Korean companies have been through a “double-dip” pattern: return on assets was at its lowest in 2008 before rebounding in 2009 and 2010, and then decreased again significantly in 2011¹¹. Yet a pattern in the way performance develops over time could be identified, which is, as for 1996-1999, compatible with the chronological unfolding of the crisis – although the up- and downswings are not as dramatic as ten years before (excluding the 2011 “crash” for cost and asset-retrenching firms, most likely resulting from a few extreme data points in the sample). This is probably due to the fact that Korea was able to better resist the Global

¹¹ All of the following regression analyses were also computed for the 2006-2010 period. No difference in direction or significance was observed.

financial crisis. The chronological sequence resulting from the mean performance analysis is recorded in Exhibit 9:

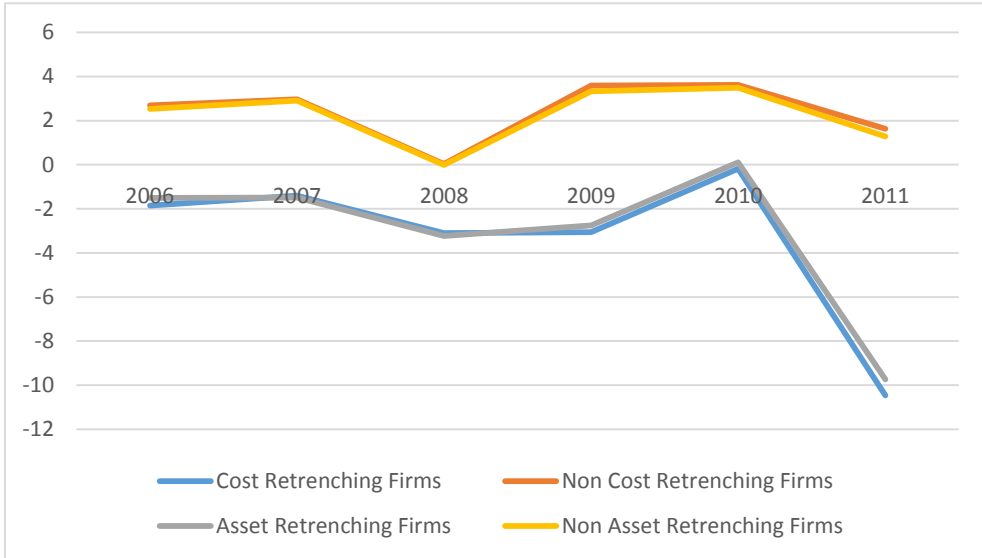


Exhibit 9: Mean performance analysis, 2006-2011.

The *t*-test for the group of cost-retrenching and non-cost retrenching firms is almost unequivocal, with five out of six years yielding results significant beyond the 5% level. 2009 and 2010 yielded particularly significant *t*-values, -4.6825 (significant at the 0.01% level) and -3.6160 (significant at the 0.5% level) respectively. Only the results for the year 2008 were insignificant, with a *t*-value of -1.5141 (p-value 0.13239). The mean performance of cost-retrenching firms was a negative -3.3455 for the 2006-2011 period, against 2.421 for the non-cost retrenching group. Despite the insignificant result for

2008, the trend line and the *t*-tests for the other five years support Hypothesis 1.

Regarding asset-retrenching firms, the results from the *t*-statistics are clear cut for five out of the six years of the sample: the differences in average ROA between asset retrenching and non-asset retrenching companies are highly significant for the years 2007, 2009, 2010 and 2011, and marginally significant for 2006. The *t*-test for 2008 is more ambiguous, with a *t*-value of -1.48 for a significance level (*p*-value) of 0.1417. Interestingly, the 2008 *t*-test for cost and non-cost retrenching companies also yielded an insignificant result, which may hint that the crisis affected all sample companies in a similar fashion in terms of performance, regardless of retrenchment strategies.

The mean performance of non-asset retrenching firms is consistently superior to asset retrenching companies for all years, with a negative average ROA of -3.102 for asset retrenching firms and a positive performance of 2.2584 for those not retrenching assets. Removing the year 2011 due to its extreme values for the asset-retrenching group does not yield any different result in terms of magnitude. Thus despite the insignificant *t*-value for 2008, these findings translate into support for Hypothesis 2.

6.2.2. Analyses of Hypotheses 3 and 4: Regression Model

The *t-test* results have clearly shown significant differences in performance between retrenching respectively non-retrenching companies over the course of the 2006-2011 period. As for the AFC sample, the relationship between performance e.g. ROA, costs and assets at a particular point in time will now be analyzed based on the following regression model:

$$ROA_{i,t} = \alpha + \beta_1 * asset_{i,t} + \beta_2 * cost_{i,t} + \varepsilon_{i,t}$$

Where *i* is an indicator of a firm and *t* signifies time.

The corresponding estimation in first differences yields the following regression equation, which eliminates a time-invariant error term:

$$\Delta ROA_{i,t} = \alpha + \beta_1 * \Delta asset_{i,t} + \beta_2 * \Delta cost_{i,t} + \Delta \varepsilon_{i,t}$$

As a first step, following the same methodology as before, the equation of the linear regression model is estimated by ordinary least-square (OLS) and with the use of the Newey and West (1987) heteroscedasticity and autocorrelation estimator (HAC). Second, the first differences equation is estimated; and third, the linear regression model is estimated a second time as a random effects specification (panel analysis), where $\varepsilon_{i,t}$ represents a firm-specific time-invariant error term and a time-varying error term. The model for the second regression equation was performed first. As depicted in Table 13, the model

yields a very low R-square of 0.000112, indicative of a very weak fit between the model and the data. The F-value was understandably low as well, with a value of 0.222 with a significance level of 0.801. Cost retrenchment and asset retrenchment, the independent variables in the regression, yielded two different results in terms of significance: the regression of the “asset retrenchment” variable yielded a t-statistic of -1.921757 (marginally significant with a p-value of 0.0548), while the t-statistic for cost retrenchment was insignificant at 0.924989 (p-value: 0.3551).

Dependent Variable: DELTA_ROA				
Method: Least Squares				
Sample (adjusted): 407 2436				
Included observations: 2030 after adjustments				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 9.9900, NW automatic lag length = 7)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.426937	0.282077	-1.513546	0.1303
DELTA_ASSET	-1.09E-07	5.65E-08	-1.921757	0.0548
DELTA_COST	5.93E-08	6.41E-08	0.924989	0.3551
R-squared	0.000112	Mean dependent var		-0.432824
Adjusted R-squared	-0.000875	S.D. dependent var		11.66573
S.E. of regression	11.67083	Akaike info criterion		7.753539
Sum squared res	276094.2	Schwarz criterion		7.761838
Log likelihood	-7866.842	Hannan-Quinn criter.		7.756584
F-statistic	0.113282	Durbin-Watson stat		1.979077
Prob(F-statistic)	0.892904			

Table 13: Regression of Δ Performance on Δ Assets and Δ Costs, 2006-

2011

While the impact of asset retrenchment on performance seems marginally significant at the 10% level, the model is ineffective given its very low F-value and R^2 score. As for the corresponding regression for the 1996-1999 data sample, insignificant results may be attributable to a large loss of information resulting from taking first differences. The results of the regression equation in *levels* (first equation) are therefore computed in Table 14:

Dependent Variable: PERFORMANCE				
Method: Least Squares				
Sample: 1 2436				
Included observations: 2436				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 29.3866, NW automatic lag length = 8)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.251592	0.319059	3.922759	0.0001
ASSETS	-2.19E-08	2.00E-08	-1.094658	0.2738
COSTS	6.91E-08	1.57E-08	4.400096	0.0000113
R-squared	0.001451	Mean dependent var		1.400191
Adjusted R-squared	0.000630	S.D. dependent var		13.64036
S.E. of regression	13.63607	Akaike info criterion		8.064545
Sum squared res	452397.8	Schwarz criterion		8.071685
Log likelihood	-9819.615	Hannan-Quinn criter.		8.067140
F-statistic	1.767337	Durbin-Watson stat		1.969896
Prob(F-statistic)	0.171006			

Table 14: Regression of Performance on Assets and Costs, 2006-2011

The model again yielded a low R^2 , 0.001451, signifying that movements in company performance can be explained only for a small part by the

independent variables “assets” and “costs”. The F-statistic for the model clocked in at 1.767337, which is equivalent to a p-value of 0.171006 and is thus insignificant. The null hypothesis that the regressors “costs” and “assets” have no impact cannot be rejected given the weakness of the F-value – if the very low R^2 is disregarded. At the individual variable level, the independent variable “assets” was insignificant with a t-statistic of -1.094658 (p-value: 0.2738). The assets regression coefficient returned $-2.19e^{-08}$, which has a negative sign and thus would oppose Hypothesis 4a. Additionally, the lack of significance and the very small coefficient hint at a very limited, if at all existent, impact of assets on performance, which would support Hypothesis 4b.

Costs however have a significant impact as an individual regressor – yielding a t-statistic of 4.4001, which is highly significant at the 0.5% level (p-value of 0.0000113) –, which would oppose Hypothesis 3b and support Hypothesis 3a.

The positive influence of costs on performance could thus be computed in the following way: the 71 cost-retrenching companies retrenched an average -1643023.46 between 2006 and 2011, which, relying on the costs coefficient from the model (0.0000000691), results in an average ROA improvement of 0,114 percentage points. Conversely, the 335 companies that did not retrench their costs recorded an average increase in costs of 1778048,418 over the 2006-2011 period, which according to the regression results would have

amounted to an average ROA i.e. performance decrease of 0.1229 percentage points.

Again, the next phase in this statistical analysis is to repeat the regression twice, each time with only one of the two independent variables, costs and assets, as regressor. The results are shown in Tables 15 and 16.

The performance on costs regression (Table 15) yields an interesting result: the independent variable “costs” is significant with a t-statistic of 5.828569 and a p-value of 0.00000000633 (significant at the 0.01% level). The F-statistic of the model clocked in at 3.445290, which is equivalent to a p-value of 0.063553 – marginally significant at the 10% level and close to the 5% level. This means that the null hypothesis – that costs do not significantly impact ROA – is relatively clearly rejected.

Dependent Variable: PERFORMANCE				
Method: Least Squares				
Sample: 1 2436				
Included observations: 2436				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 34.3772, NW automatic lag length = 8)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.246475	0.322409	3.866132	0.0001
COSTS	5.28E-08	9.06E-09	5.828569	0.00000000633
R-squared	0.001413	Mean dependent var		1.400191
Adjusted R-squared	0.001003	S.D. dependent var		13.64036
S.E. of regression	13.63352	Akaike info criterion		8.063761
Sum squared res	452414.6	Schwarz criterion		8.068521
Log likelihood	-9819.661	Hannan-Quinn criter.		8.065491
F-statistic	3.445290	Durbin-Watson stat		1.970059
Prob(F-statistic)	0.063553			

Table 15: Regression of Performance on Costs, 2006-2011

With respect to the performance on assets regression (Table 16), the independent variable “assets” is significant at the 5% level with a t-statistic of 3.523805 (p-value: 0.0004). The F-statistic is quite low however (2.259083), which is equivalent to an insignificant p-value of 0.132962. Of note however is the change in sign of the assets coefficient, which was negative in the previous regression and has now turned positive. This could indicate a certain degree of *correlation* between cost retrenchment and asset retrenchment.

Dependent Variable: PERFORMANCE				
Method: Least Squares				
Sample: 1 2436				
Included observations: 2436				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 11.8398, NW automatic lag length = 8)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.278085	0.302924	4.219160	0.0000
ASSETS	5.07E-08	1.44E-08	3.523805	0.0004
R-squared	0.000927	Mean dependent var		1.400191
Adjusted R-squared	0.000517	S.D. dependent var		13.64036
S.E. of regression	13.63684	Akaike info criterion		8.064248
Sum squared res	452634.9	Schwarz criterion		8.069008
Log likelihood	-9820.254	Hannan-Quinn criter.		8.065978
F-statistic	2.259083	Durbin-Watson stat		1.969217
Prob(F-statistic)	0.132962			

Table 16: Regression of Performance on Assets, 2006-2011

As it was the case for the 1996-1999 sample data, a regression of assets on costs was performed as a next step to analyze the degree of correlation between cost retrenchment and asset retrenchment –the results are summarized in Table 17. Costs are indeed a highly significant independent variable, yielding a t-statistic of 26.57744 with a p-value of 0. The model is likewise extremely robust, with an F-statistic of 8829.119 (p-value: 0). As a result, the null hypothesis that costs, the regressor, have no impact on assets, the dependent variable, must be rejected.

Dependent Variable: ASSETS				
Method: Least Squares				
Sample: 1 2436				
Included observations: 2436				
HAC standard errors & covariance (Bartlett kernel, Newey-West automatic bandwidth = 5.1785, NW automatic lag length = 8)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	234076.5	44524.46	5.257257	0.0000
COSTS	0.746198	0.028076	26.57744	0.0000
R-squared	0.783896	Mean dependent var		2407068.
Adjusted R-squared	0.783808	S.D. dependent var		8188056.
S.E. of regression	3807158.	Akaike info criterion		33.14349
Sum squared res	3.53E+16	Schwarz criterion		33.14825
Log likelihood	-40366.76	Hannan-Quinn criter.		33.14522
F-statistic	8829.119	Durbin-Watson stat		2.097483
Prob(F-statistic)	0.000000			

Table 17: Regression of Assets on Costs, 2006-2011

Consequently, the costs coefficient that was estimated can be formally written as follows:

$$\beta = \frac{cov(assets, costs)}{var(costs)}$$

From this equation, the correlation coefficient between asset retrenchment and cost retrenchment, ρ , can be computed as seen below. It is defined as the covariance of assets and costs divided by the square root of the product of variances of assets and costs (Falkenberg et al., 2004, p. 18). Consequently, computing the ρ -value using the covariance and two variances yields 0.88538.

$$\rho = \frac{cov(assets, costs)}{\sqrt{var(assets) * var(costs)}}$$

While it is often difficult to interpret the significance of a correlation coefficient in econometrics, a ρ -coefficient of 0.88538 can be considered as a very robust correlation. Accordingly, given this result, asset retrenchment and cost retrenchment are very likely to appear either together or not at all. This leads to the conclusion that performing a regression of performance on assets cannot yield a significant result because of the strong correlation between the two independent variables. The variable “assets”, given the very correlation coefficient that was computed, reflects the impact of the variable costs, which is in effect the variable impacting performance. A correlogram for asset and cost retrenchment is displayed in Exhibit 10.

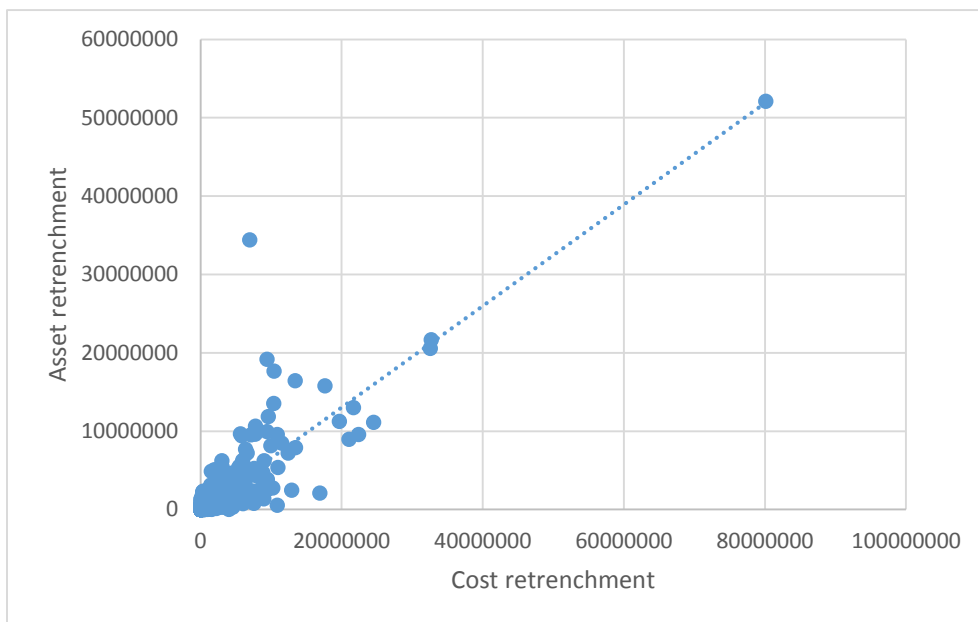


Exhibit 10: Correlogram, asset retrenchment and cost retrenchment, 2006-2011¹²

The last step in this statistical analysis is to compute a random effects model (REM), which can deliver a more efficient estimation of the impact of cost retrenchment and asset retrenchment on performance, under the assumption of strict exogeneity. To quote Falkenberg et al. (2004, p. 19), a REM “assumes that the intercept β_{1i} is the sum of a common constant β_1 and a time-invariant firm-specific random variable ε_i ” that is “uncorrelated with the

¹² This correlogram was performed with Excel 2013, which does not display more than 1000 data points in a single graph. The number of points in this correlogram is thus incorrect and is added here for illustration purposes only. The trend line however is correct.

residual u_{it} .” Strict exogeneity does not require any feedback between regressors and error terms, as the error term does not influence future values of costs and assets.

While Falkenberg et al. computed their random effects variable using the GLS method, the REM for this Korean dataset will be performed using the Pooled EGLS method, which takes advantage of additional bias adjustments described in Baltagi (2005). The result is provided in Table 18:

Dependent Variable: PERFORMANCE				
Method: Panel EGLS (Cross-section random effects)				
Sample: 2006 2011				
Periods included: 6				
Cross-sections included: 406				
Total panel (balanced) observations: 2436				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.278517	0.394301	3.242493	0.0012
ASSETS	-2.72E-08	9.49E-08	-0.286428	0.7746
COSTS	6.43E-08	7.96E-08	0.807454	0.4195
	Effects Specification			
			S.D.	Rho
Cross-section random			5.706933	0.1749
Idiosyncratic random			12.39433	0.8251
	Weighted Statistics			
R-squared	0.000615	Mean dependent var		0.928916
Adjusted R-squared	-0.000206	S.D. dependent var		12.39093
S.E. of regression	12.39221	Sum squared resid		373628.0
F-statistic	0.748929	Durbin-Watson stat		1.937265
Prob(F-statistic)	0.472982			
	Unweighted Statistics			
R-squared	0.001409	Mean dependent var		1.400191
Sum squared res	452416.6	Durbin-Watson stat		1.599889

Table 18: Random Effects Model, 2006-2011

The REM yielded again a very low R^2 of 0.000615. Compared with the second regression, the coefficients of the independent variables “assets” and “costs” are of the same magnitude: the “assets” coefficient was $-2.72e^{-08}$ in the random effects model and $-2.19e^{-08}$ in the second regression, while the “costs” coefficient yielded $6.43e^{-08}$ in the REM and $6.91e^{-08}$ in the second regression model (Table 14). They have also retained the same signs (negative for assets and positive for costs), which would support Hypotheses 3a and 4b, and oppose Hypotheses 3b and 4a. Since the magnitude of the coefficients has remained similar, the respective influences of cost and asset retrenchment should also remain similar.

That being said, both independent variables are statistically insignificant in this REM model (t-value of 0.7746 and 0.4195 for assets and costs, respectively), which itself yields a limited F-value of 0.748929 (p-value: 0.472982). As a result, neither costs nor assets seem to be reliable explanatory variables for performance variations; both Hypotheses 3a and 4a and thus rejected, while Hypotheses 3b and 4b are supported. Again, even if these independent variables had had a significant impact on ROA in any way, the very weak fit of the model embodied by the low R^2 value would have greatly limited any actual influence of either of these variables.

7. Discussion

7.1. Findings - Summary

7.1.1. T-Tests

For the Asian financial crisis sample data, *Hypothesis 1* holds: cost-retrenching firms report lower performance than non-cost retrenching companies. The significance of the findings for *Hypothesis 2* – which posits that asset-retrenching firms yield lower performance than non-asset retrenching companies – is quite low however, as only the year 1998 was found to be statistically significant. While the significant performance discrepancy between asset and non-asset retrenching firms does not allow us to fully reject *Hypothesis 2*, it is clear that asset retrenchment is not a significant indicator for performance variances.

The significance level of the t-tests for both cost and asset retrenchment during the Global financial crisis is particularly high, with the exception of 2008, which could be explained by the general downswing in the economy that year and thus a lower explanatory power of the t-test results for 2008. Yet from highly significant t-values for the other years, both cost retrenching and asset retrenching firms reported lower performance than non-cost respectively non-asset retrenching companies. *Hypothesis 1* and *2* are thus considered valid for the period of the Global financial crisis. It is important to mention

that this result would still be valid without the year 2011, which saw a particularly significant drop in performance for asset/cost retrenching firms.

7.1.2. Regression models and random effects models

The objective of these hypotheses was to test the relationship between assets, costs and performance (operationalized through return on asset – ROA – a common performance indicator) over the whole periods of the two data samples, namely 1996-1999 and 2006-2011. Hypotheses 3a and 4a posited that costs respectively assets had a significant impact on performance, while Hypotheses 3b and 4b postulated the non-significance or non-existence of such an influence.

While asset retrenchment and cost retrenchment did not yield any statistically significance as to firm performance, assets as an independent variable had a significant impact on ROA in both subsequent regressions, while costs had a significant impact as well when tested as an individual regressor of the performance variable. Yet the fit and significance of the regression model was extremely low, and both independent variables were subsequently found to be relatively correlated (p -value: 0.455). Furthermore, it became quite clear from the outcome of the random effect model that assets and costs did not have any

statistically significant impact on performance. Hypotheses 3a and 4a are rejected, while Hypotheses 3b and 4b receive support.

For 2006-2011, the regression of the annual performance variation (Δ Performance) on asset retrenchment (Δ Assets) and cost retrenchment (Δ Costs) yielded significance for asset retrenchment at the individual variable level, but again the fit and the significance of the overall model, as respectively measured by the R^2 score and the F-value, didn't allow for any general significance. The regression of ROA on assets and costs showed statistical significance for the "costs" variable, yet again with a low F-value for the overall model (despite much improvement). The regression of performance on assets yielded a similar result – significant regressor, weak fit – but the regression of performance on costs however returned the first marginally significant result for the overall model (F-statistic: 3.445290, p-value 0.063553). Yet the coefficient for the "assets" variable changed sign between the regressions, hinting at a potential correlation between assets and costs, which was verified in a subsequent regression (assets on costs). The ρ was estimated to be above 0.88, which indicates that the two variables are strongly correlated. The subsequent random effect model, which was estimated to detect an impact of either assets or costs on performance under the assumption of exogeneity, did not yield any significant result or even a

marginal fit. Consequently, Hypotheses 3a and 4a are also rejected for the 2006-2011 period, while Hypotheses 3b and 4b are confirmed.

7.1.3. Comparison between the two crises – Hypothesis 5

This thesis focused on the fundamental impact of asset retrenchment and cost retrenchment on firm performance, regardless of specific industries or other types of firm groupings (such as Ricardian or Schumpeterian, to take the study by Lim et al. [2013] as an example). While a more refined selection of the data samples along additional variables or concepts might have revealed clear difference between the two time periods – with respect to technology and services for example, given the transition of Korea towards a knowledge economy), at the fundamental level the findings in this study do not highlight any difference between listed South Korean companies in 1996-1999 and 2006-2011 with respect to cost and asset retrenchment.

While *Hypothesis 5* is formulated in a way that assumes that an increased reliance on asset or cost retrenchment would be the consequence of a “Westernization” of Korean turnaround practices – based on authors such as Fisher et al. (2004) – the underlying assumption is that management practices in Korea will converge towards practices that are more likely to include higher cost and asset retrenchment in their turnaround toolkit. On the basis of the findings in this thesis however, *Hypothesis 5* is rejected.

7.2. Discussion

The findings in this thesis seem to contradict Robbins and Pearce (1992) as to the universal applicability of cost and asset retrenchment in crisis situations. The significance of the t-statistics, which confirmed that retrenching companies achieved lower performance, combined with the disappointing results from the regression analyses of individual variables, could provide support for Barker and Mone (1994), who questioned the findings of Robbins and Pearce (1992) and argued that retrenchment was the consequence of performance decline rather than the cause of a (successful) turnaround. In other words, the statistical analysis of the 1996-1999 and 2006-2011 samples found a correlation between low performing firms and retrenching firms, but strictly no significant relationship between assets and performance, and costs and performance, as individual variables. Indeed, in accordance with Barker and Mone (1994), the weakest firms in the sample have probably retrenched significantly due to large losses and sometimes near-bankruptcy, and not because of strategic considerations. Retrenchment was a consequence and not a proactive turnaround policy.

Indeed, literature suggests that the degree of retrenchment is dictated by the urgency of the situation and the environmental pressure to take corrective actions. While the severity of the two crises created ample pressure (especially in the case of the Asian financial crisis), cultural resistance to

retrenchment, as mentioned earlier, could play a role. Societal factors such as commitment to life-long employment delay retrenchment and thus firms that do retrench face more severe turnaround situations than other companies, and Western firms in general (Falkenberg and Chong, 2004b). The rejection of *Hypothesis 5* could also signal that the cultural dimensions working against a wider recourse to retrenchment strategies are still prevalent in South Korea.

Additionally, Robbins and Pearce (1992) rely on the assumption that retrenchment is the standard corporate response to a crisis situation. The two samples constructed for this thesis clearly show that retrenchment is by far a minority choice for Korean companies. Only 32.85% of the firms included in the 1996-1999 sample retrenched in any way (cost, asset, or both), a ratio that drops to approximately 22% for the period between 2006 and 2011 (317 out of the 407 sampled firms did not retrench in any way). While these numbers can be “tweaked” by shifting the period of observation by one year in either direction, all other reasonable timeframes (for example 2006-2010, 2005-2010, or 1995-1999) yield the same overall result: the vast majority of listed Korean companies do not retrench their costs or their assets in crisis situations. The general assumption of Robbins and Pearce (1992) can thus be called into question.

The findings of this thesis might also be explained (and potentially biased) by the role of large conglomerates (*chaebols*) in the South Korea economy – and

thus in the dataset. First, for the years 1996-1999, government policies aimed at restructuring entire industry sectors were enacted, which led to the market exit of several major companies, which were “dissolved” into larger, more robust conglomerates. Most of these “Big Deals” were completed in the years 1998-1999. Interestingly, many of these attempts to consolidate key industries failed, which led remaining companies to book severe losses over many years after the crisis itself (Lee, 2002, p. 36). The impact of these deals on the sample should be investigated, as they may have inflated the balance sheets and cost structures of several companies, removed from the sample companies deemed failures by the government (as they ceased to exist), and may have created an adjustment lag, as the necessary retrenchment that should have occurred after these “Big Deals” took place for the most part after 1999.

Finally, another explanation that should be further explored is the role of internal capital markets within *chaebols*. Immediately following the crisis (1998-99), companies with the highest growth potential within *chaebol* networks would sell equity to other, less promising members for cash – effectively transferring resources to the most attractive businesses belonging to the conglomerate. Almeida et al. (2014) calculated that these equity deals amounted to 1% of total *chaebol* assets in 1996-1997, and 2.5% in the post crisis period of 1998-1999 (p. 2). This discrepancy, according to the authors,

highlights the importance of the Asian crisis in boosting such capital allocation arrangements. Due to the crisis, many *chaebols* business groups found themselves with financing capacities that were in excess of their investment requirements; they naturally reallocated this excess capital to other business units in need of liquidity (p. 3). Gopalan and Xie (2011) found that in times of industrial distress, the internal capital markets of U.S. conglomerates step in and allow their most promising business entities to spend more on key investments for their future return to profitability – R&D for example.

Another paper by Matvos and Seru (2011) argues that U.S. conglomerates allocate their resources more efficiently when (external) financial markets are in turmoil. The implication for Korean *chaebols* could be that they shift productive assets and spending efforts with greater efficiency in times of economic distress, and thus are less pressured to slash costs and retrench assets at the conglomerate level (on aggregate). As a result, companies within the *chaebol* cross-subsidize each other to wither adverse conditions and only need to resort to retrenchment strategies if all else fails. This could also explain why – cultural and societal factors notwithstanding – Korean companies have a tendency to retrench only in extremely severe situations.

8. Conclusions and Further Research

This thesis investigated the impact of cost and asset retrenchment on the performance of listed Korean companies during two separate events: the Asian financial crisis (1997-1998) and the Global financial crisis (2008-2009). Based on an extensive literature review of the merits of retrenchment as part of a successful turnaround, and following the methodology developed by Falkenberg et al. (2004), which builds upon the works of Robbins and Pearce (1992) and other scholars, this thesis posited that retrenching firms faced lower performance levels than their non-retrenching competitors, and formulated competing hypotheses with regard to the impact of cost retrenchment and asset retrenchment on improving performance in a period of industry-wide crisis.

The quantitative analyses performed in this thesis confirmed that retrenching companies yield lower levels of performance than their non-retrenching counterparts, during both crises. The impact of assets, costs, and their retrenchment, on the performance of Korean firms (defined as return on assets) was found to be insignificant or non-existent however, again for both periods.

These results tend to confirm the findings of Barker and Mone (2004), according to whom retrenchment is the consequence of performance decline and not the component of a successful turnaround strategy. The findings of

this thesis also show that only a minority of Korean firms resorted to cost or asset retrenchment, which contradicts the assumption made by Robbins and Pearce (1992) that the majority of firms engaged in a turnaround should retrench.

An additional hypothesis presented in this thesis posited that Korean companies would be more likely to retrench during the Global financial crisis than during the Asian crisis, due to the global diffusion of “Western” managerial practices.

Further research should be undertaken to understand the role of government policies and chaebol internal markets and their influence on retrenchment, as well as the role of cultural differences that shape managerial practices in Asia and particularly in Korea. Additionally, there is potential to conduct more in-depth studies of retrenchment in the case of specific industries or types of companies – in the spirit of some of the studies included in this thesis’ literature review. Indeed, the construction of more homogeneous samples could help better understand the role of cost and asset retrenchment under particular conditions, which the two general samples used in this thesis failed to deliver.

To quote Cascio (2002, p. 81), it is “not possible for firms to ‘save’ or ‘shrink’ their way to prosperity”. While retrenchment is an important item in the

toolkit of turnaround management, only companies able to use their resources to create *value* are the ones that ultimately survive.

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국문초록

비용과 자산 긴축의 역할은 전환 전략 연구에 있어서 가장 논란이 되는 부분 중 하나다. 아시아 경제 위기 당시 긴축 정책을 다룬 여러 연구들은 모호하고 일관성 없는 결과들을 도출했다. 그렇기 때문에 경영 전략과 경제 정책의 관점에서 한국의 사례 통해 한국 기업들의 긴축이 효과적이었는지 여부를 확인하는 것은 의미가 있다. 해당 논문에서는 아시아 경제 위기와 글로벌 경제 위기 두 가지 사례를 다룬다.

논문에서 다루는 정량적인 분석에 따르면 긴축 정책을 폈던 회사들은 그렇지 않았던 회사들에 비해 두 위기 모두에서 더 저조한 실적을 냈다. 이 결과는 Barker and Mone (2004)의 조사 결과인 긴축 정책은 실적의 감소에 따른 결과이며, 성공적인 전환 전략의 일부가 아니라는 사실을 확증해준다. 해당 논문은 또한 한국 회사 중 일부만이 비용 혹은 자산 긴축 정책을 택한 것을 보여주며, Robbins and Pearce (1992)의 대다수 회사들이 전환 전략을 펼 경우 긴축이 동반되어야 한다는 전제를 반박한다.

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주요어: 전환경영, 긴축, 한국, 아시아 경제 위기, 글로벌 경제 위기

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