

Financial Slack, Financial Slack Reduction and Firm Performance during the Great Recession: The Case of Small-sized Japanese Electronics Companies

Nobuaki Namiki*

ABSTRACT

In this study, I investigated the relationship between financial slack, its reduction, and performance for small-sized Japanese firms in two specific periods of the Great Recession. The first period extended from the summer of 2008 to the middle of 2009, when many companies dramatically lowered their performance. The other period extended from the middle of 2009 to the end of 2010, when many firms gradually improved their performance. I also examined the effects of reduced financial slack at the early stage of a recession on a firm's performance during the later stage of a recession. I consequently found that financial slack does not work as a buffer during the initial shock period of a recession, and that a reduction of financial slack during the initial stage of a recession has a positive impact on performance improvement during the later stage. The presence of financial slack has a significantly negative influence on a firm's performance during the initial stage of a recession, and it has little effect on a firm's performance at the later stage. In fact, the relationship between financial slack reduction and performance during the later stage of a recession is curvilinear, and the findings of this study have implications for managers affected by deep recessions.

INTRODUCTION

Some scholars consider financial slack, including excess cash and borrowing capacity, to be instrumental in enhancing the performance of firms that face environmental turbulence, such as economic recessions (e.g., Chakrabarti, 2015; Cheng & Kesner, 1997; Latham & Braun, 2008; Shephard & Wiklund, 2011; Zona, 2012). Others regard financial slack as a hindrance to a firm's performance because financial slack can insulate managers from such turbulence, slowing down a firm's reaction (e.g., Yasai-Ardekani, 1986). Empirical evidence is consequently mixed (e.g., Daniel, Lohrke, Fornaciari & Turner, 2004; Latham & Braun, 2008). One possible reason for such disagreement is that previous studies focused mainly on the "presence" of slack at the beginning of an environmental disruption. Consequently, those scholars have not taken into account the possibility of slack being reduced (or used) for the duration of that disruption.

Although the presence of slack at the onset of a recession would seem to give firms certain competitive advantages, slack needs to be reduced (or used) to combat recessions. In fact, financial slack resources provide discretionary funding to pursue new projects, improve processes, and develop new products or markets during times of hardship (Boyne &

* College of Business, Graduate School of Business Administration, Rikkyo University

Meier, 2009). Hence, financial slack needs to be converted into cash and other resources, and it must be spent to obtain resources that are critical to performance improvements during a recession. Moreover, deploying competitive resources through slack reduction takes time, so the impact of slack reduction on performance does not materialize at once. Thus, the presence of slack at the onset of a recession and the subsequent implementation of slack reduction will impact a firm's performance during different stages of a recession.

Most recessions last more than a few years, and from the start, they have sudden, damaging effects on many companies. These effects are followed by an eventual improvement. However, many studies assume that the levels of financial slack at the onset of a recession tend to determine a firm's performance during every stage of a recession: i.e., the declining and recovery periods. For example, Latham and Braun (2008) designed their framework in such a way that the levels of financial slack at the onset of the information technology (IT) recession of 2001 determined the performance of firms until the end of the recession in 2003. In other words, they treated financial slack as a time invariant. In reality, though, managers could use or increase their financial slack in order to respond to pressures from a recession. Thus, financial slack should be treated as a time variant.

Slack is usually considered a buffer against environmental turbulence (Palzelt, etc., 2008; Wan & Yiu, 2009; Youngsang & Ployhart, 2014), but its buffering effects do not last forever. Firms that have enough financial slack at the onset of a recession have opportunities to fare well during that initial decline. However, among those same firms, some reduce their slack levels substantially, while others maintain their slack levels. Therefore, the amount of slack at the onset of a recession may be irrelevant to a firm's performance during, for example, the second year of that recession. This is because some

companies would have spent their slack resources to prepare for performance improvements, while others would have kept or increased these slack resources to avoid bankruptcies.

Managers who have enough slack when a recession suddenly hits often take advantage of that slack. However, they do not know if it is advantageous to use financial slack resources to improve their within-recession performance because little research exists on the role of financial slack reductions in the event of a recession. Therefore, it is important to determine if firms that have reduced their slack resources at the beginning of a recession fare better than those that have not reduced their slack levels by the later stage of a recession.

This research study is an attempt to further our understanding of the nature, characteristics, and impact of slack and slack reduction on the performance of firms during the first few years of the Great Recession of 2008. The Great Recession started in the summer of 2008, and the initial shock it had on many companies lasted until the spring/summer of 2009. Thereafter, the performance of these firms gradually improved. Thus, the Great Recession provides relatively clear stages of recession: i.e., the declining and performance improvement stages, and offers an ideal setting for measuring and analyzing the impact of slack and slack reduction.

In this study, I employed a longitudinal design with a hierarchical linear model (HLM) approach. This relatively new tool provides a very flexible research design to measure and analyze the precise impact of slack (at a recession's onset) and slack reduction over a firm's performance "trajectories." I applied this tool to small-sized electronics firms in Japan because the Great Recession severely affected most of those companies. Yet, past studies have typically analyzed slack-performance relationships for large-scale, publicly-held companies (e.g., Ma & Karri, 2009; Tan & Peng, 2004), and those studies have seldom examined small-sized com-

panies. Furthermore, small-sized companies (i.e., employing 20 to 200 individuals) probably present a better sampling frame to test the HLM approach and its associated hypotheses. This is because recessions rapidly affect the performance of small-sized firms. Many large-sized companies, on the other hand, can withstand recessionary impact for long periods of time: i.e., six months to a year, perhaps because of their financial and market strengths. In fact, in their financial statements, many large-sized firms did not show the negative impact of the Great Recession for more than a year. Therefore, measuring the performance trajectories of large-sized companies using the HLM approach would be problematic.

There is also an important practical reason for studying small-sized firms in Japan. These companies are, by far, the most common form of Japanese business organization, generating more than 50% of all the jobs in the country (Japan Small Business Research Institute, 2012). Yet, despite their ubiquity, small-sized companies tend to be overlooked by management scholars, probably because data about small-sized companies are not readily available. Moreover, most prior studies concerning the slack-performance link have focused on larger companies in the U.S. and Europe (e.g., Ma & Karri, 2009; Tan & Peng, 2004).

The purpose of this study is to investigate the nature and impact of financial slack and slack reduction on different stages of a recession. Specifically, I examined if the presence of financial slack at the onset of a recession impacted the performance of small-sized Japanese firms during the initial shock of the Great Recession, and if financial slack reduction conducted during the initial stage of that recession had significant impact on the performance improvements of those firms at the later stage.

PREVIOUS RESEARCH AND THEORETICAL DEVELOPMENT

The Relationship between Financial Slack and Performance

Slack has been defined as “the pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output” (Nohria & Gulati, 1996, p. 1246). Firms with substantial slack have fewer resource allocation problems (due to resource availability) (Cyert & March, 1963) and improved information processing (due to reduced interdependencies between subunits) (Galbraith, 1973). Thus, these firms have more innovation capabilities (Nohria & Gulati, 1996). However, previous studies on the relationship between slack and performance have presented mixed results. Some studies (e.g., Bourgeois, 1981; Latham & Braun, 2008) have found positive relationships between slack and performance, while others (e.g., Simon, 1997; Yasai-Ardekani, 1986) have found no relationship between them or negative relationships. Furthermore, traditional research on slack has assumed that the presence of slack creates an organizational atmosphere that promotes innovation and organizational performance (e.g., Thomson & Miller, 2001). The opposite view is supported by agency theory, which posits that managers with excess cash flow (i.e., one of the slack resources) tend to run their organizations ineffectively (e.g., Mellahi & Wilkinson, 2009).

Neither of the above views usually takes into account the impact of slack reduction on performance. In normal circumstances, managers do not consider reducing slack because slack reduction may lead to infighting for resources between departments, thereby failing to support an organizational atmosphere conducive to creativity and coordination (e.g., Thomson & Millar, 2001). Thus, in normal circumstances,

it may not be prudent to reduce organizational slack.

Financial slack is one type of organizational slack, and it represents the cash and the borrowing capacity of a firm. Financial slack has been considered a buffer for environmental turbulence, such as economic recessions (Bourgeois, 1981; Cheng & Kesner, 1997). Therefore, in times of recession, firms may reduce slack to maintain or improve their performance.

Financial Slack and Performance at the Early Stage of Recession

Recessions represent one of the most damaging exogenous shocks to a company's survival and profitability (Mascarenhas and Asker, 1989). Some recessions affect certain industries, such as the IT recession of 2001, while other severe recessions, like the Great Recession of 2008, distress many economic sectors. Moreover, when a recession hits, it is almost impossible to forecast the recession's end. This uncertainty puts tremendous pressures on managers, and a firm's excess financial resources could offer a critical advantage in the firm's survival.

Financial slack can act as a buffer against recessionary conditions. Financial slack may be a "rainy day" fund, and firms with more financial slack respond differently to recessionary conditions (having greater flexibility in the application and adaption of the slack resources) than those with fewer financial resources (Latham & Braun, 2008). Therefore, we would expect financial slack to mitigate negative recessionary effects on firm performance. However, past studies have found that the presence of financial slack had a significantly negative impact on performance at the initial stage of the IT recession (e.g., Latham & Braun, 2008). Yet, financial slack had a significantly positive influence on performance at the recovery stage (e.g., Latham & Braun, 2008). So, financial slack protects firms from recession and leads to sub-optimal performance at the beginning of a recession.

But, at the later stage, Latham and Braun (2008: 45) argued that financial slack may help managers speed up recovery and secure a post-recessionary head start. For Latham and Braun (2008), financial slack provides companies with opportunities in building long-term competitive advantages.

Still, another argument for the above Latham and Braun's (2008) findings may be that the slack-performance link at the early stage of a recession could be curvilinear. It is well-documented that slack-performance relationship tends to be curvilinear: i.e., an inverted U shape (e.g., Bourgeois, 1981; Nohria & Gulati, 1996; Herold, D. M., Jayaraman, N. & Narayanaswamy, C.R., 2006). This means that firms with too much or too little slack are likely to have less performance than companies with medium levels of slack. Yet, there may be a limit to the incremental performance contribution of slack presence, and departure from the optimal point may lead to reduced performance. Thus, the following hypothesis can be set forth:

Hypothesis 1. The relationship between financial slack and firm performance at the early stage of a recession is curvilinear: i.e., too much or too little financial slack has a negative impact on performance, and a moderate level of financial slack has a positive impact on performance.

Financial Slack Reduction and Performance at the Later Stage of Recession

Prior studies have investigated the impact of slack reduction on a firm's innovation (e.g., Mellahi & Wilkinson, 2010). Most of these studies have examined slack reduction in terms of human resources (e.g., Cheng & Kesner, 1997; Luan, Tien & Chi, 2013; Mellahi & Wilkinson, 2010; Wagan, 1998; Youngsang & Ployhart, 2014). Many firms have gone through downsizing in the past decades, and some researchers have investigated the impact of downsizing on human and organizational capital on companies'

innovative capabilities.

Although no studies exist concerning the effects of financial slack reduction on performance, it would be reasonable to expect a positive relationship between the two. Since financial slack is largely unabsorbed in an organization, financial slack reduction would not trigger an organization resistance. However, since absorbed slack, like excess employees, is already absorbed into an organization, such a slack reduction would cause the organizational atmosphere to worsen (e.g., Cheng & Kesner, 1997; Wagan, 1998).

Arguments against slack reduction during recessions are related to the high risks of reducing liquidity during hard times, which may lead to bankruptcies. To obtain safe levels of liquidity, some managers may become risk averse, even to the point of sacrificing their firm's efficiency (Campello, et al, 2011). This may lead to another argument; too much financial slack reduction could lead to unsafe levels of liquidity and, consequently, to an inefficient use of resources. Moreover, too little financial slack reduction may have a insignificant impact on performance. Thus, a curvilinear relationship is expected to exist between financial slack reduction and performance. In fact, some prior studies on the relationships between the reduction of slack (e.g., excess employees) and performance found curvilinear relationships (e.g., Greenley & Oktemgh, 1998). Therefore, the following hypothesis can be set forth:

Hypothesis 2. The relationship between financial slack reduction at a recession's onset and a firm's performance at the later stage of a recession is curvilinear: i.e., too much or too little financial slack reduction has a negative impact on performance, and a moderate level of financial slack reduction has a positive impact on performance.

RESEARCH METHODOLOGY

Sample

Sample firms included small-sized Japanese manufacturers of electronics. A questionnaire was sent to top executives of those companies during the spring of 2012. The sample companies were randomly selected from the Tokyo Shouko Research (TSR) Corporate Data Directory.

Each respondent was asked to indicate if he/she was familiar with his/her company's experience during the Great Recession, in terms of its operations and strategies conducted from 2008 to 2010. If not, he/she was asked to send the questionnaire to a person who was knowledgeable of the experience. A total of 403 questionnaires were sent to top executives. After one follow-up letter, 140 useable responses were received (about a 35% response rate). Nineteen responses were excluded because these firms had more than 200 employees. A total of 121 responses were used for analysis. Furthermore, to assess nonresponse bias, the characteristics of the responding companies were compared to those of the non-responding companies. The use of chi-square analysis confirmed that survey respondents did not significantly differ ($p = .05$) from non-respondents on any of the three factors for data collection: annual sales, the number of employees, and the number of years since incorporation. Average firms in the sample had about 80 employees and existed for 19 years since incorporation. The number of employees ranged from 20 to 200.

Dependent Variable

I used two measures of performance in this study: profit (ROA) and overall performance, and I used a self-report subjective instrument to measure the profit and overall performance. For each measure of performance, respondents

identified whether their company (compared to similar-sized companies in the same region and industry) was in the top 20% of firms (scale = 5), the upper 20–40% of firms (scale = 4), and so on. They were asked to provide their assessment of each quarterly result, from the third quarter of 2008 to the third quarter of 2010.

Dess and Robinson's (1984) study supports the usefulness of subjective performance measures in the absence of objective performance measures. Past studies (Wall, et al, 2004; Singh, 1986) have used similar subjective performance measures as well. These studies tend to confirm that the perceived performance measures are a reasonably accurate measure for actual performance. I also summed these two performance measures into a composite scale for a firm's performance.

Independent Variables

I used two items for the financial slack of a firm and its financial slack reduction: excess cash and excess borrowing capacity. Using a five-point scale, ranging from one (strongly disagree) to five (strongly agree), top executives were asked to assess the extent to which their firms had plenty of excess cash and excess borrowing capacity at the onset of the Great Recession: i.e., the third quarter of 2008. They were also asked to assess the extent to which their companies reduced their excess cash and borrowing capacity levels during the first year after the Great Recession had begun. These questions were combined to represent the financial slack and financial slack reduction measures.

Control Variables

I controlled two different factors that may lead to changes in a firm's performance during a recession: firm size and the severity of performance decline. Firm size has been found to affect the ability of firms to make necessary changes in the face of environmental turbulence (Tushman & Romanelli, 1985). The log of

employees at the onset of the Great Recession determined the firm size.

Previous research (Bibeault, 1982) suggests that the severity of performance decline may influence the degree of performance turnaround. Specifically, the more severe the performance decline, the more likely it is that subsequent performance improvement will occur. Respondents were asked to assess the extent to which the Great Recession affected their industry and their firm, with answers ranging from one (not affected at all) to five (strongly, negatively affected). I summed the responses to these two questions to represent the perceived severity of the recession

Approach to Data Analysis

I used hierarchical growth modeling to determine factors that affected company performance during the early and later stages of recession. Hierarchical growth modeling has been demonstrated to be an effective statistical tool for examining trends (Raudenbush & Bryk, 1992). I also used HLM because this statistical procedure can unveil how time-invariant predictor (i.e., slack present at the onset of a recession) and time-varying predictor (i.e., slack reduction) are related to performance trajectories over time. Individual growth HLMs are typically conceptualized as two-level modes. The first level of the model includes linear and quadratic components that examine the trends of company performance:

$$ROA_i = \beta_0 + \beta_1 (\text{LINEAR}) + \beta_2 (\text{QUADRATIC}) + \text{error},$$

where the linear trend corresponds with the rate of decline, and the quadratic component corresponds with the rate of recovery.

In the second level of the HLM, I entered independent and control variables to determine which variables affected the firms' performance trends:

$$\bullet \beta_0 (\text{INTERCEPT}) = \gamma_{00} + \gamma_{01} (\text{SLACK}) +$$

- γ_{02} (SEVERITY) + γ_{03} (SIZE) + error;
- β_1 (LINEAR) = γ_{00} + γ_{01} (SLACK) + γ_{02} (SEVERITY) + γ_{03} (SIZE) + error; and
- β_2 (QUADRATIC) = γ_{00} + γ_{01} (SLACK REDUCTION) + γ_{02} (SEVERITY) + γ_{03} (SIZE) + error.

In the intercept and linear models, "SLACK" is the amount of slack that was present at the onset of the Great Recession. Yet, in the quadratic model, the variable is the amount of "SLACK REDUCTION" that occurred during the first year in the Great Recession. To examine the curvilinear relationship between slack and performance, I added slack squared to each model.

RESULTS

The first HLM model was an empty model, allowing examination of variance in performance without reference to any predictor variables. The performance intercept was specified as a random effect. The model was used to calculate the intra-class correlation coefficient (ICC), which indicates the proportion of total variability in the dependent variable. The ICC for performance was .27, indicating that 27% of the variance in performance could be attributed to inter-firm differences, while 73% of variance was at the intra-firm level. A chi-square test of the intercept variance component indicated that a proportion of inter-firm variability in performance was statistically significant, χ^2 (N=121)

=615, $p < .001$. Given this result, I introduced level-2 predictors (Snijders and Bosker, 1999).

The next HLM model included only linear and quadratic trajectory parameters as level-1 predictors. Examination of their variance components indicated that significant variance existed between firms for both the linear, χ^2 (N = 121) = 435.95, $p < .001$, and quadratic, χ^2 (N = 121) = 407.59, $p < .001$, trajectories. This model also indicated that the fixed effect coefficients for the linear and quadratic trajectory parameters were significant, $b = -.70$, $t = -17.39$, $p < .001$, and $b = .07$, $t = 15.15$, $p < .001$, respectively (See Table 1). This suggests that average firms in the sample showed a rapid drop in performance at the onset of the recession, with a modest rate of recovery during the recession's later stage.

Table 2 presents the results of the second level of HLM trend analysis. The analysis examined which firm-specific factors and control variables impacted the performance trajectories. With regard to financial slack, I did not find support for Hypothesis 1 (See Models 1, and 2). When firms had higher levels of financial slack at the onset of the recession, they tended to have a worse decline in performance during the initial declining stage than companies with lower levels of financial slack. In addition, firms reducing their financial slack during the declining stage did not increase their performance at the recession's later stage. Hence, financial slack at the beginning of the recession did not work as a buffer, and its reduction during the early stage did not lead to a higher performance turn-

Table 1 Performance Trend during Recession

	Coefficient	Std. Error	T-Ratio
Intercept	3.89	.082	47.36***
Linear Slope	-.070	.040	-17.39***
Quadratic Slope	.071	.005	15.15***

Deviance = 2964.5

Number of estimated parameters = 7

Level of significance: ***, $p < .01$; **, $p < .05$; *, $p < .10$.

Table 2 Effect of Firm Factors on Performance during Recession

Model Number	1		2		3		4	
Type of Effects	Linear effects		Curvilinear		Linear		Curvilinear	
Slack Type in Recovery	Reduction		Reduction		Presence		Presence	
Fixed effects	Coef- ficient	Std error	Coef- ficient	Std error	Coef- ficient	Std error	Coef- ficient	Std error
Intercept								
Intercept	3.89*	.08	3.89*	.08	3.89*	.08	3.89*	.08
Fin. Slack Presence	.30*	.07	.40	.34	.30*	.08	.42	.37
Fin. Slack Presence Squared			-.02	.05			-.02	.06
Severity	.07	.10	.08	.10	.07	.10	.08	.10
Firm size	-.22+	.10	-.22+	.10	-.22+	.10	-.22+	.10
Rate of Decline								
Intercept	-.70*	.04	-.70*	.04	-.70*	.04	.70*	.04
Fin. Slack Presence	-.04+	.02	-.0001	.07	-.03	.04	-.02	.18
Fin. Slack Presence Squared			-.006	.01			-.001	.03
Severity	-.17*	.05	-.17*	.05	-.17*	.05	-.17*	.05
Firm size	.02	.05	.02	.05	.02	.05	.02	.05
Rate of Recovery								
Intercept	.07*	.005	.07*	.005	.07*	.005	.07*	.005
Fin. Slack Reduction	-.005*	.001	.01&	.006				
Fin. Slack Reduction Squared			-.002+	.0009				
Fin. Slack Presence					-.0004	.004	.006	.02
Fin. Slack Presence Squared							-.001	.003
Severity	.02*	.006	.02+	.006	.02*	.006	.02*	.006
Firm size	.003	.006	.005	.006	.005	.006	.005	.006

Notes: Level of significance: *, $p < .01$; +, $p < .05$; &, $p < .10$.

around. However, when squared terms of financial slack were introduced into the parameters, I identified a curvilinear relationship between financial slack reduction and performance improvements. So, too much or too little excess financial slack reduction may lead to slower performance improvements. Therefore, this finding supported Hypothesis 2.

Instead of financial slack reduction measures, the linear and curvilinear effects of financial slack present at the onset of the recession were entered into the quadratic parameters and were examined for the strength of their effects on performance trajectories at the later stage of the recession (See Models 3, and 4). In both cases, financial slack present at the onset had no

curvilinear relationship with performance at the later stage. Therefore, the presence of financial slack at the onset of the recession was inconsequential to a firm's performance at the later stage.

Control variables (i.e., firm size and the severity of the recession) had a mixed impact on the firms' performance trajectories. The severity had a positive impact on performance recovery. Top executives who perceived the recession's impact on their firm as severe tended to turn around their companies more rapidly than those who did not.

DISCUSSION AND CONCLUSION

Firms with excess financial slack were more likely to invest during the early stage of the recession. However, those investing too much financial slack were likely to have a slower performance turnaround. Furthermore, those investing too little financial slack were getting slower returns. In this study, I found that medium levels of financial slack reduction tended to induce rapid performance improvements. This finding is consistent with most research on the slack–innovation relationship. Future research should investigate the optimal levels of financial slack reduction during the early stage of a recession.

I also found that the presence of financial slack at the onset of the recession had a negative impact on performance trajectories at the early stage. This finding was identical to that of Latham and Braun (2008). The slack–performance relationship was also not curvilinear. Therefore, having high levels of financial slack at the onset of a recession may shield managers from recessionary pressures and might slow down their responses when faced with a severe recession.

In this study, the presence of financial slack at the recession’s onset had insignificant impact on a firm’s performance at the later stage. This finding was contrary to that of Latham and Braun (2008), who found that firms with high levels of financial slack at the onset of the IT recession had higher performance improvements during the recovery stage. The different results may stem from the rather different severities and depths of the IT recession and the Great Recession. The IT recession was rather mild and had a quick recovery in a few years. Furthermore, its impact was mainly on software firms in the U.S. The Great Recession, on the other hand, had severe effects not only

on financial institutions but also on industries throughout the U.S. and the rest of the world. Future research should investigate if the contexts of different recessions tend to affect the slack–performance relationship.

In this study, I examined the performance trends of about two years from the start of the Great Recession. Future research should be conducted on the time after the end of the Great Recession to investigate the impact of slack reduction on performance during recovery periods. Furthermore, I focused on the effect of a firm’s financial slack on performance because financial slack tends to be readily available to managers and immediately affects the firm’s performance. Other slacks, however (such as absorbed slack and recoverable slack), affect performance after a few years.

Future research should also examine the impact of slack reduction on a firm’s performance in other industries. This study focused on one industry, electronics. Thus, more research is needed to further our understanding of the relationships between slack and performance during recessions.

References

- Bibeault, D. G. 1982. *Corporate Turnaround: How Managers Turn Losers into Winners*, McGraw-Hill, New York.
- Bourgeois, I., J.I. 1981. On the measurement of organizational slack. *Academy of Management Review*, 6: 29-39.
- Boyne, G. A. & Meier, K. J. 2009. Environmental change, human resources and organizational turnaround. *Journal of Management Studies*, 46(5): 835-863.
- Campello, M., Giambona, E., Graham, J.R., & Harvey, C.R. 2011. Liquidity management and corporate investment during a financial crisis. *The Review of Financial Studies*, 24(6): 1944-1979.
- Chakrabarti, A. 2015. Organizational adaptation in an economic shock: The role of growth reconfiguration. *Strategic Management Journal*, 36(11): 1717-1738.
- Cheng, J. & Kesner, I. 1997. Organizational slack and

- response to environmental shifts: the impact of resource allocation patterns. *Journal of Management*, 23: 1-18.
- Cyert, R. & March, J. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ; Prentice-Hall.
- Daniel, F., Lohrke, F. T., Fornaciari, C. J. & Turner, J. R. A. 2004. Slack resources and firm performance: a meta-analysis. *Journal of Business Research*, 57: 565-575.
- Dess, G. G. & Robinson, Jr., R. B. 1984. Measuring organizational performance in the absence of objective measures: The case of privately-held firm and conglomerate business unit. *Strategic Management Journal*, 5: 265-273.
- Galbraith, J. 1973. *Designing Complex Organizations*. Reading, MA: Addison Publishing.
- Greenley, G. E. & Oktemgh, M. 1998. A comparison of slack resources in high and low performing British companies. *Journal of Management Studies*, 35: 377-398.
- Herold, D. M., Jayaraman, N. & Narayanaswamy, C. R. 2006. What is the relationship between organizational slack and innovation. *Journal of Managerial Issues*, 18: 373-393.
- Japan Small Business Research Institute & Ministry of Economy, Trade and Industry, *2015 White Paper on Small and Medium Enterprises in Japan*. <http://www.chusho.meti.go.jp>, October 30, 2015.
- Latham, S. & Braun, M. R. 2008. The performance implications of financial slack during economic recession and recovery: Observations from the software industry (2001-2003). *Journal of Managerial Issues*, 20(1): 30-50.
- Luan, C., Tien, C. & Chi, Y. 2013. Downsizing to the wrong size? A study of the impact of downsizing on firm performance during an economic downturn. *International Journal of Human Resource Management*, 24(7): 1519-1535.
- Ma, H. & Karri, R. 2009. Impact of firm performance on changes in strategic resource allocation decisions. *Journal of Business and Management*, 15: 171-185.
- Mascarenhas, B. & Aaker, D., 1989. Strategy over the business cycle. *Strategic Management Journal*, 10: 199-210.
- Mellahi, K. & Wilkinson, A. 2009. A study of the association between downsizing and innovation determinants. *International Journal of Innovation Management*, 12: 677-698.
- Nohria, N. & Gulati, R. 1996. Is slack good or bad for innovation? *Academy of Management Journal*, 39: 1245-1264.
- Patzelt, H., Shepherd, D. Deeds, D. & Bradley, S. 2008. Financial slack and venture managers' decisions to seek a new alliance. *Journal of Business Venturing*, 23(4): 465-481.
- Raudenbush, S. & Bryk, A. S. 2002. *Hierarchical Linear Models*. 2nd Ed. Thousand Oaks, CA: Sage Publications.
- Simon, H. 1997. *Administrative Behavior: A Study of Decision Making Process in Administrative Organizations*, 4th Ed. New York, NY: The Free Press.
- Singh, J. V. 1986. Performance, slack, and risk taking in organizational decision making. *Academy of Management Journal*, 29: 562-585.
- Tan, J. & Peng, M. W. 2003. Organizational slack and firm performance during economic transitions: Two studies from an emerging economy. *Strategic Management Journal*, 24: 1249-1263.
- Thomson, N. & Miller, C. C. J. M. 2001. The role of slack in transforming organizations. *International Studies of Management & Organization*, 31(2): 65-83.
- Tushman, M. & Roanelli, E. 1985. Organizational evolution: A metamorphosis model of convergence and reorientation. *Research in Organizational Behavior*, 7: 171-223.
- Wagan, T. H. 1998. Exploring the consequences of workforce reduction. *Canadian Journal of Administrative Science*, 15(4): 300-3009.
- Wall, T. D., Michie, J., Patterson, M., Wood, S., Sheehan, M., Clegg, C. W. & West, M. 2004. On the validity of subjective measures of company performance. *Personnel Psychology*, 57: 95-118.
- Wan, W. P. & Yiu, D. W. 2009. From crisis to opportunity: Environmental jolt, corporate acquisitions, and firm performance. *Strategic Management Journal*, 30: 791-801.
- Yasai-Ardekani, M. 1986. Structural adaptations to environments. *Academy of Management Review*, 11: 9-21.
- Youngsang K. & Ployhart, R. 2014. The Effects of Staffing and Training on Firm Productivity and Profit Growth Before, During, and After the Great Recession. *Journal of Applied Psychology*, 99(3): 361-389
- Zona, F. 2012. Corporate Investing as a Response to Economic Downturn: Prospect Theory, the Behavioural Agency Model and the Role of Financial Slack. *British Journal of Management*, 23(Supplement): S42-S57.