RETURN TO PROFITABILITY AFTER A FINANCIAL CRISIS

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ABSTRACT

The financial crisis in October 2007 that sent the stock markets in a downward spiral all around the globe started more than six years ago. Many countries are still experiencing the ripple effects despite intervention by several governments, acting singly and collectively, to help stem the crisis and support recovery. Yet, many firms around the globe have not firmly returned to profitability. This study, therefore, addresses the question: "When do firms return to profitability after a financial crisis?" and examines the time taken by industrial firms in three of the hardest hit Asian countries to return to profitability after the 1997 Asian financial crisis. Earlier studies at the 'micro' level has mainly focused on the profitability of financial institutions and generally been limited to the pre-crisis period and/ or a few years of the post-crisis period. This paper takes a longer perspective of the post-crisis period and focuses. The results show that, in each country, there are significant differences in the profitability of industrial firms in the short-term before and after the crisis as well as in the longer-term post-crisis period. Further, the speed of recovery and the extent of the return to profitability vary from country to country.

JEL: G01, G32

KEY WORDS: Financial Crisis, Profitability, Asia, Ratios

INTRODUCTION

More than six years after the advent of the 2007-2009 financial crisis, many countries around the globe continue to face the after-effects and fall-out caused by the same. The crisis emanated from USA as evidenced by rapidly falling stock prices starting in October 2007 and continued rapidly falling housing prices around that time. The crisis spread across the globe like a wildfire in a short span of time. The economies of several countries were adversely affected. Stock markets around the world went tumbling there appeared to be no end to the downward spiral. Governments around the globe, including the USA, were forced to act individually and collectively in an effort to stem the crisis. Because of the crisis, around the globe, several firms filed for bankruptcy and millions of people lost their jobs, and many even their homes. The consequences of this crisis are proving to be very costly economically and socially worldwide. In the USA too, many firms continue to feel the pinch stemming from the crisis despite interest rate cuts, bailing out of various financial institutions and industrial firms, quantitative easing, and other measures to support the economy. In spite of these efforts, current economic reports suggest that many are still hoping and praying for a light at the end of the tunnel when firms all around the globe solidly return to profitability. This study, therefore, addresses the question that remains in the minds of many: "When do firms return to profitability after a financial crisis?"

In order to address this question, this study examines changes in the profitability of firms over time in the three Asian countries of Indonesia, Korea, and Thailand that faced a financial crisis in the same year: Thailand (July 1997), Indonesia (August 1997), and Korea (November 1997). At that time too, the financial crisis had repercussions that were felt around the Globe. The ripple effects spread from Asia to Latin America, Europe and the USA though the speed at which the crisis spread was not as rapid as the current financial crisis. In order to assess the changes in profitability, and the time taken to return to profitability, this study examines changes in the following four financial ratios over time: (i) gross profit margin, (ii) net profit margin, (iii) basic earning power, and (iv) return on assets. The rest of the paper is organized into four sections. In the first section, a brief review of prior studies relating to the 1997 Asian financial crisis as relevant to this study is provided. The second section provides information relating to the data for the study, the variables examined, and the methodology employed for the analysis. The results of the study are discussed in the third section. Finally, the conclusions of the study are summarized. In addition, some ideas for further research are presented.

LITERATURE REVIEW

A review of the literature finds several studies of the Asian financial crisis and subsequent crises in Latin America, Europe and USA. However, most of these studies examine the Asian crisis, and the subsequent crises which followed as well as the current global financial crisis, from a macroeconomic perspective such as cause and effects, government reactions in the forms of stimuli, regulations and monetary policy etc. as well as intervention/ support provided by the IMF. As this study focuses on the firm level (or, microeconomic level) only a few of the 'macro'-oriented studies are cited as examples. Clark (2011) argues that myopia was prevalent in the financial markets prior to the start of the current financial crisis. Failures in governance by both financial institutions and governments allowed excessive risk-taking, which led to implosion in the financial markets and exploded to other sectors. So-called 'innovative financial products' turned into 'weapons of mass destruction.' Hope (2011) argues that short-term tendencies of capitalism disrupted the long-term strategy of capital accumulation. Biles (2010) suggests that lessons for the current financial crisis may be learnt from the FOBAPROA debacle in the so-called 'tequila crisis' of 1994-95 in Mexico. Crotty and Lee (2009) question the justification for the economic policy changes in Korea as imposed by the IMF. However, relatively few studies at the macroeconomic level examine changes at the firm level also.

Intuitively, it can be expected that firms would be impacted by the changes in their macroeconomic environment and would be forced to react accordingly or perish. The studies by Can and Ariff (2009) and Prasad et al (2006) support this intuition. The Can and Ariff (2009) study examines changes in the performance of banks in Indonesia, Korea, Philippines and Thailand following the Asian crisis because of IMF-supported programs. The Prasad et al (2006) study examines changes in the capital structure and profitability of firms in Indonesia, Korea, Philippines and Thailand following the Asian crisis following the IMF mandated reforms. Several studies on variables at the 'micro' level have focused on financial institutions and banks. Park and Weber (2006) examine the profitability of Korean banks, Chantapong (2005) compares the performance of domestic banks against foreign banks, Rahman et al (2004) identify financial distress indicators in Indonesia, Korea and Thailand, and Sufian and Habibullah (2010) study the effect of the Asian crisis on bank performance in Indonesia.

Studies of the non-financial firms also at the 'micro' level have mainly focused on leverage and capital structure issues. A study by Bris et al (2004) examines the changes in firm-level leverage and profitability around currency crises in 17 countries around the globe rather than the Asian crisis per se. Kim et al (2006) examine the capital structure of Korean manufacturing companies. Kuo and Wang (2005) study how the degree of internationalization for listed multinational corporations in Taiwan influenced their capital structure. Coulibaly and Millar (2011) study how the levels of debt and investments changed over the pre-crisis and post-crisis periods. Generally, these studies have been limited to the pre-crisis period or to a few years surrounding the crisis year. Prasad, Puri, and Jain (2009) extended the earlier studies by examining the changes in financing patterns of firms for a longer time period and include both long-term funding (capital structure) and shot-term funding for firms in Indonesia, Korea and Thailand. Earlier, Dollar and Hallward-Driemeier (2000) had observed the ill effects of using short-term funds to finance long-term investments in Thailand firms. As a follow-up study, Prasad, Jain, and Puri (2009) examine how the liquidity of firms changed over the pre-crisis, crisis, and post-crisis periods in the same countries. Song and Lee (2012) also examine long run changes in the liquidity of firms though they focus on the influence of the level of cash holdings for eight East Asian countries. However, none of the earlier studies has examined how the profitability of firms changed in the aftermath of the crisis in the longer run. This study is motivated to fill this gap and expects to contribute to the literature by taking a longer perspective and examining whether the financial crisis in a country led to changes in the profitability patterns of firm located in that country not only in the short-term but also in the intermediate and the longer term. As the immediate after-effects of the financial crisis, including the impact of government intervention, may dominate the short-term reaction of firms, it is important to study the longer run for the post-crisis period where firms have greater internal control for improving their financial profitability and thereby be in a position to return to sustainable profitability. The longer-term perspective would also provide information on the time taken by firms to return to profitability.

DATA AND METHODOLOGY

Three countries are chosen for this study: Indonesia, Korea and Thailand. All of these countries faced a severe financial crisis in 1997: Thailand in July, Indonesia in August, and, Korea in November. The financial data for industrial companies located in these countries, over 1994-2004 period, is drawn from the Compustat (Global) database. This period seems appropriate since the crisis started in 1997, with probable spillover effects in 1998, thus making the 1999-2004 period a six-year period corresponding to the time that has elapsed since the current global crisis started. Four ratios are used to examine the changes in the profitability of firms: (i) gross profit margin, (ii) net profit margin, (iii) basic earning power, and (iv) return on assets. Gross profit margin is defined as gross profit divided by sales, net profit margin is defined as net income divided by sales, basic earning power is defined as operating income (earnings before interest and tax) divided by total assets, and return on assets is defined as net income divided by average total assets.

These four ratios are useful in examining changes in the profitability of firms in the wake of a financial crisis. While the first two ratios capture the profitability of sales, the last two ratios capture the profitability of assets invested in the business. We select gross profit margin because a change in this ratio will capture a change in the cost of goods sold, mostly because of inflationary pressures caused by a decline in currency values of the three sample countries. We select net profit margin to capture the net change in profitability of sample firms. Since total assets figure does not change because of a financial crisis, a change in the basic earning power ratio and return on assets ratio capture the change in profitability of a firm at both operating profit level and net income level.

To examine the impact of the financial crisis on the profitability of firms, the financial data for companies over the 1994-2004 period is examined using five sub-periods: 1994-1996 (the pre-crisis period), 1997 (the crisis year), 1998 (the short term post-crisis period), 1999-2001 (the medium term post-crisis period), and 2002-2004 (the long term post-crisis period). Tables 1 and 2 provide summary statistics related to the data. Table 1 shows the sample distribution of the firms in our sample. Panel A shows the number of firms in the sample for Indonesia, Korea and Thailand for each year from 1994 to 2004. Panel B in this table shows the grouping of these firms into the five sub-periods as described above for each of the three countries. Table 2 presents the overall mean and median values for the four ratios used in the study for each of the three countries. Changes in each of the profitability ratios is examined by comparing the ratio for the short-term crisis period to the ratio for the pre-crisis period, the medium term crisis period to the ratio for the pre-crisis period, and, the long-term crisis period to the ratio for the pre-crisis period.

Table 1: Sample Distribution

Panel A: Distribution by Year				
Year	Indonesia Sample	Korea Sample	Thailand Sample	Total Sample
1994	60	13	141	214
1995	62	17	146	225
1996	95	19	182	296
1997	155	85	247	487
1998	136	111	249	496
1999	159	167	233	559
2000	154	208	240	602
2001	176	220	247	643
2002	199	223	253	675
2003	206	226	280	712
2004	195	225	268	688
Total	1,597	1,514	2,486	5,597
Panel B: Distribution by Crisis-Period				
	Indonesia Sample	Korea Sample	Thailand Sample	Total Sample
Pre-crisis (1994-96)	217	49	469	735
Crisis (1997)	155	85	247	487
ST reaction (1998)	136	111	249	496
MT reaction (1999-01)	489	595	720	1804
LT reaction (2002-04)	600	674	801	2075
Total	1,597	1,514	2,486	5,597

This table describes the sample size used in this study.

Table 2: Summary Statistics 1997-2004 by Country

Year	Indonesia Sample	Korea Sample	Thailand Sample
N	1597	1514	2486
Gross Profit Margin			
Mean	0.32	0.28	0.32
Median	0.29	0.24	0.28
Net Profit Margin			
Mean	0.02	0.03	0.05
Median	0.04	0.04	0.05
Basic Earning Power			
Mean	0.08	0.08	0.06
Median	0.07	0.06	0.06
Return on assets			
Mean	0.03	0.04	0.04
Median	0.03	0.03	0.05

Table shows mean and median values of Gross Profit Margin defined as Gross profit / Sales, Net Profit Margin defined as Net Income / Sales, Basic Earning Power defined as Operating Income/ Total Assets, and Return on Assets defined as Net Income / Average Total Assets for all years for each of the three countries.

Therefore, the null hypothesis related to the profitability of the firms relative to the profitability in the pre-crisis period in the countries studied is:

H_0 (1): The profitability of the firms within a country has the same means (or, in terms of medians, the same distribution) over time as it was in the pre-crisis period.

Acceptance of H_0 (1) implies that the financial crisis did not change the profitability of the firms in the crisis year, the short run, the medium run, or the long run as compared to the profitability of the firms in the pre-crisis period. Failure to accept H_0 (1), in the short run, implies that the financial crisis in the country did change the profitability of the companies within the country in our sample in the time periods immediately following the crisis. Failure to accept H_0 (1), in the medium run and the long run implies that the profitability of the firms in the sample countries did not return to the pre-crisis levels.

Further, each of the profitability ratios is examined by comparing the ratio for the medium term post-crisis period to the ratio for the short-term post-crisis period (the immediate post-crisis period), and, the long-term crisis period to the ratio for the short-term post-crisis period (the immediate post-crisis period). Therefore, the null hypothesis related to the changes in profitability of the firms relative to profitability in the immediate post-crisis period in the countries studied is:

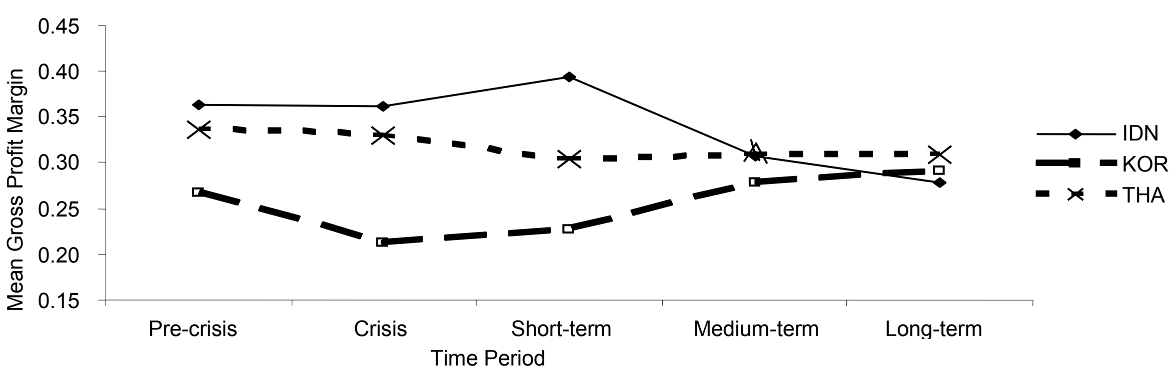
H_0 (2): The profitability of the firms within a country has the same means (or, in terms of medians, the same distribution) over time as compared to the immediate post-crisis period.

Acceptance of H_0 (2) implies that the profitability of the firms did not change in the medium run or the long run as compared to the profitability in the short run post-crisis period. Failure to accept H_0 (2), in the medium run or the long run implies that there were no changes to profitability in the medium term or the long term compared to profitability in the immediate post-crisis period. This would suggest that it takes longer time to return to pre-crisis profitability levels, especially if the profitability had changed in immediate post-crisis period. Significance of difference in the means of ratios is calculated by using the two-tailed t test. Significance of difference in the medians of ratios is calculated using the Wilcoxon Signed Rank Sum test.

RESULTS AND DISCUSSION

Figures 1 to 4 provide a time-series description of the four profitability ratios used in our analysis and Tables 3 to 6 provide results of comparisons of the study ratios in post-crisis periods to those in the pre-crisis period. Each figure shows a graphical presentation of the mean ratio analyzed in the table by country for the five time-periods in the study. Each table presents the number of firms, mean ratio value, and median ratio value for firms in the three sample countries for the five time periods. The tables also provide results of univariate tests of significance for changes in the profitability ratios due to the financial crisis. For each ratio, we compare the pre-crisis values with the values in other four time-periods (crisis, short-term reaction, medium term reaction, and long-term reaction). Figure 1 and Table 3 provides an analysis of the gross profit margin ratio. Figure 1 shows the mean gross profit margin for the five time periods by country.

Figure 1: Mean Gross Profit Margin by Country for the Five Study Time Periods



Results for tests for changes in the gross profit margin are shown in Table 3. These results show that the gross profit margin ratio for Indonesia and Thailand changed significantly in the post-crisis period. The mean and median gross profit margins declined significantly in these countries. In Indonesia, it dropped from 36 percent during the pre-crisis years to 31 percent in the medium term and to 28 percent in the long term. Similarly, in Thailand, the drop was from 34 percent to 31 percent in the medium and the long term. However, gross profit margins in Korea, which was the lowest of the three countries in the pre-crisis periods, did not change significantly in the post-crisis periods.

Table 3: Comparison of Changes in Gross Profit Margin

Country		Pre-Crisis	Crisis	Short-Term Reaction	Medium-Term Reaction	Long-Term Reaction
Indonesia	N	217	155	136	489	600
	Mean	0.36	0.36	0.39*	0.31***	0.28***
	Median	0.34	0.33	0.37**	0.28***	0.22***
Korea	N	49	85	111	595	674
	Mean	0.27	0.21	0.23	0.28	0.29
	Median	0.23	0.19	0.21	0.25	0.25
Thailand	N	469	247	249	720	801
	Mean	0.34	0.33	0.30**	0.31**	0.31**
	Median	0.30	0.30	0.28*	0.28**	0.27***

*Table shows changes in Gross Profit Margin, defined as Gross profit / Sales over time in three countries. Short-term, medium-term, and long-term is 1, 2-4, and 5-7 years following the crisis year, respectively. Significance of difference in means and medians is calculated using the two-tailed t-test and Wilcoxon Signed Rank Sum Test, respectively. Notation ***, **, and * mean significantly different from the pre-crisis value at 1%, 5%, and 10% level respectively.*

Figure 2 shows changes in the net profit ratio over time and results for the tests for changes in the net profit margin ratio are shown in Table 4. The results show that there was a significant drop in the mean and median net profit ratio for the sample firms in Indonesia and Thailand in the short-term and the medium-term following the financial crisis. In the long-term, the ratio reverted to the pre-crisis levels in Thailand but remained significantly below the pre-crisis level in Indonesia. Korea had the lowest mean and median net profit ratio of the three sample countries in the pre-crisis period. Interestingly, the means did not change significantly following the financial crisis but the median ratios increased significantly.

Figure 2: Mean Net Profit Margin by Country for the Five Study Time Periods

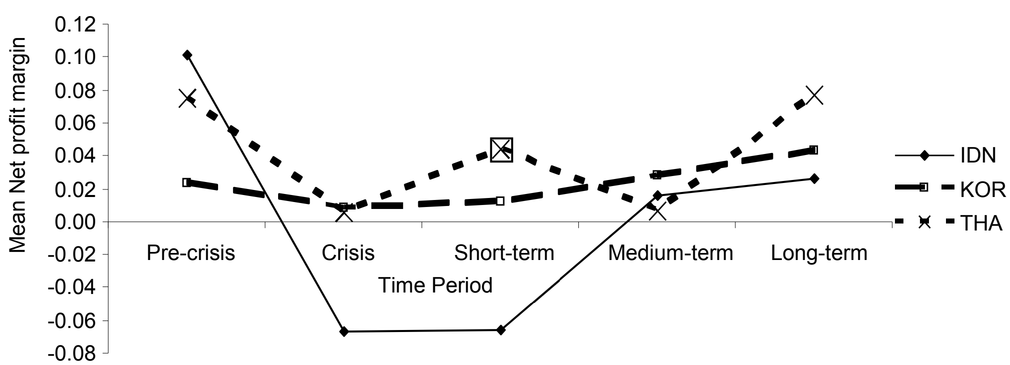


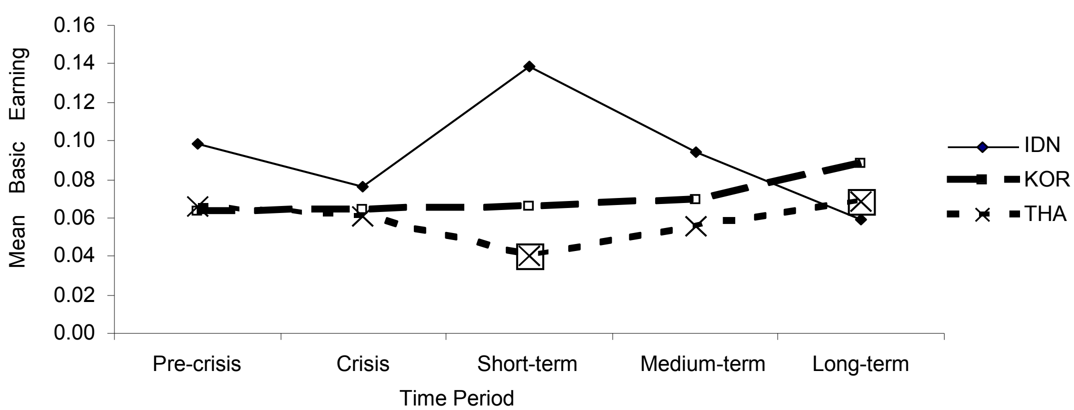
Figure 3 shows changes in the basic earning power over time, and Table 5 provides an analysis of the basic earning power ratio. This table shows the results for the test of significance for changes in the basic earning power ratio. The results for this ratio show some interesting characteristics of firm response.

Table 4: Comparison of Changes in Net Profit Margin

Country		Pre-crisis	Crisis	Short-term Reaction	Medium-term Reaction	Long-term Reaction
Indonesia	N	217	155	136	489	600
	Mean	0.10	-0.07***	-0.07***	0.02***	0.03***
	Median	0.10	0.00***	0.00***	0.04***	0.03***
Korea	N	49	85	111	595	674
	Mean	0.02	0.01	0.01	0.03	0.04
	Median	0.01	0.01	0.02*	0.04***	0.05***
Thailand	N	469	247	249	720	801
	Mean	0.07	0.01***	0.04**	0.01***	0.08
	Median	0.06	0.04***	0.05*	0.04***	0.07

*Table shows changes in Net Profit Margin, defined as Net Income / Sales, over time in three countries. Short-term, medium-term, and long-term is 1, 2-4, and 5-7 years following the crisis year, respectively. Significance of difference in means and medians is calculated using the two-tailed t-test and Wilcoxon Signed Rank Sum Test respectively. Notation ***, **, and * mean significantly different from the pre-crisis value at 1%, 5%, and 10% level respectively.*

Figure 3: Mean Basic Earning Power by Country for the Five Study Time Periods



In Indonesia, the mean and median basic earning power declined during the crisis, rose beyond the pre-crisis level in the short-term, but fell back below the pre-crisis level in the long-term. There were no significant changes in the basic earning power in Korea except in the long-term, when the ratio increased beyond the pre-crisis level. In Thailand, the basic earning power declined in the short- and medium-term, but climbed back to the pre-crisis level in the long-term. We noted above that the gross profit margins in Indonesia and Thailand declined in the short-, medium-, and the long-term. Therefore, decline in the long-term basic earning power in Indonesia versus the return to pre-crisis level in the long-term in Thailand hints about differences in the cost management practices in the two countries and posits an interesting future study.

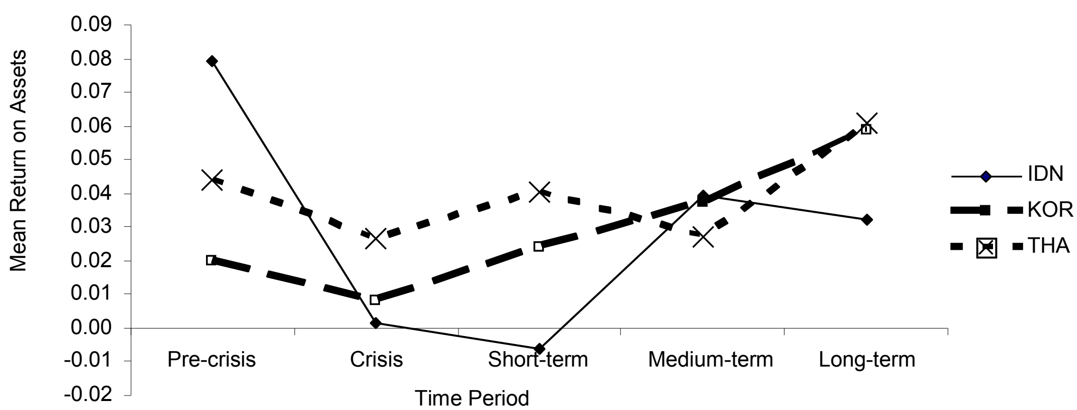
Figure 4 shows changes in return on assets over time, and Table 6 provides an analysis of the return on assets ratio. Table 6 shows the results of tests of significant differences during the selected time intervals in return on assets ratio for the sample countries.

Table 5: Comparison of Changes in Basic Earning Power

Country		Pre-crisis	Crisis	Short-term Reaction	Medium-term Reaction	Long-term Reaction
Indonesia	N	217	155	136	489	600
	Mean	0.10	0.08***	0.14***	0.09	0.06***
	Median	0.08	0.06***	0.11***	0.08	0.04***
Korea	N	49	85	111	595	674
	Mean	0.06	0.06	0.07	0.07	0.09***
	Median	0.05	0.06*	0.06	0.06	0.07***
Thailand	N	469	247	249	720	801
	Mean	0.07	0.06	0.04***	0.06*	0.07
	Median	0.06	0.06	0.04***	0.06**	0.07

*Table shows changes in Basic Earning Power, defined as Operating Income/ Total Assets, over time in three countries. Short-term, medium-term, and long-term is 1, 2-4, and 5-7 years following the crisis year, respectively. Significance of difference in means and medians is calculated using the two-tailed t-test and Wilcoxon Signed Rank Sum Test, respectively. Notation ***, **, and * mean significantly different from the pre-crisis value at 1%, 5%, and 10% level respectively.*

Figure 4: Mean Return on Assets by Country for the Five Study Time Periods



We note that all sample countries show significant changes in return on assets, however, the ratio increased in the long-term in Korea and Thailand but declined in Indonesia where it declined in the crisis year and did not recover even in the long-term. Companies in Thailand, on the other hand, were able to recover from the decline in return on assets experienced during the crisis and the mid-term periods. Thus, assets management practices in these countries seem to differ and may warrant a future study. In addition to studying the changes in the profitability ratios in comparison to pre-crisis values in the sample countries, we also looked at how firms adjusted their short-term reaction to the crisis in the medium- and the long-term. The results of this analysis are presented in Table 7, which compares short-term reaction values with the medium-term reaction values and the long-term reaction values. In this table, Panel A presents comparison for the gross profit margin ratio, Panel B presents comparison of the net profit margin ratio, Panel C presents comparison of the basic earning power ratio, and Panel D presents comparison of the return on assets ratio.

Table 7 results show the results of test of significance for differences in the mean and median values of the profitability ratios in the short-term reaction period to that in the medium-term and the long-term reaction periods. The results show that in almost all cases, the mean and the median ratios included in this study were significantly different in the long-term from the corresponding values after the short-term reaction to the crisis. The only exception to this was the gross profit margin ratio for Thailand, which did not change significantly after a significant change in the short-term period following the crisis (Table 3).

Table 6: Comparison of Changes in Return on Assets

Country		Pre-Crisis	Crisis	Short-Term Reaction	Medium-Term Reaction	Long-Term Reaction
Indonesia	N	217	155	136	489	600
	Mean	0.08	0.00***	-0.01***	0.04***	0.03***
	Median	0.06	0.00***	0.00***	0.03***	0.02***
Korea	N	49	85	111	595	674
	Mean	0.02	0.01	0.02	0.04	0.06***
	Median	0.01	0.01*	0.01	0.02***	0.05***
Thailand	N	469	247	249	720	801
	Mean	0.04	0.03**	0.04	0.03***	0.06***
	Median	0.04	0.02***	0.04	0.04**	0.06***

*Table shows changes in Return on assets, defined as Net Income / Average Total Assets, over time in three countries. Short-term, medium-term, and long-term is 1, 2-4, and 5-7 years following the crisis year, respectively. Significance of difference in means and medians is calculated using the two-tailed t-test and Wilcoxon Signed Rank Sum Test, respectively. Notation ***, **, and * mean significantly different from the pre-crisis value at 1%, 5%, and 10% level respectively.*

In Indonesia return on assets rebounded in the medium- and long-term periods following the crisis, whereas gross profit margin and basic earning power continued to decrease over time. Therefore, the return on assets in Indonesia did not return to the pre-crisis levels even in the long-term. In Korea, all profitability ratios increased over time. In Thailand, compared to the short-term reaction values, there was no change in gross profit margin, net profit margin fell in the medium-term time period but recovered in the long-term, basic earning power continued to improve over time, and return on assets increased in the long-term. Therefore, the return on assets for firms in Korea and Thailand recovered in the long-term and were significantly above the pre-crisis after long-term adjustments of business operations. Thus, the results of this study show that the financial crisis led to immediate drops in the profitability of firms in our sample countries. However, firms in Korea and Thailand were more adept at adjusting and regaining profitability as compared to the firms in Indonesia.

CONCLUDING COMMENTS

The motivation for this study is the observation that many firms continue to feel the pinch stemming from the 2007-2009 financial crisis even though more than six years have passed since the advent of the crisis. In spite of numerous measures taken by governments to stem the crisis and to support the recovery of their economies, many industrial firms are still falling short in returning to profitability. This study, therefore, addresses the question: "When do firms return to profitability after a financial crisis?" In an effort to assess the time taken by industrial firms to return to profitability, this study tries to draw a lesson from history, by examining changes in the profitability of industrial firms over time surrounding the 1997 Asian financial crisis. During 1997, the Asian countries of Indonesia, Korea and Thailand faced a severe financial crisis. Accordingly, these are the three countries chosen for this study. The four ratios used to examine changes in the profitability of industrial firms are: (i) gross profit margin, (ii) net profit margin, (iii) basic earning power, and (iv) return on assets. The first two ratios capture the profitability of sales, whereas the last two ratios capture the profitability of assets invested in the business.

The Compustat (Global) database provides the financial data for industrial companies located in these countries over a 1994-2004 period. The 1994-2004 period is chosen keeping in mind that the crisis started in 1997, had probable spillover effects in 1998, so the 1994-1996 data reflects the pre-crisis period and the 1999-2004 data reflects a post-crisis six-year period which roughly corresponds to the time that has elapsed since the start of the current global crisis. To allow a detailed examination of the changes over time, the following five sub-periods are used: 1994-1996 (the pre-crisis period), 1997 (the crisis year), 1998 (the short-term post-crisis period), 1999-2001 (the medium term post-crisis period), and 2002-2004 (the long-term post-crisis period). The pre-crisis profitability levels are compared with the crisis period levels to see the impact of the financial crisis on firms. In addition, changes in the various post-crisis sub-periods are compared with pre-crisis profitability levels to see if firms return to pre-crisis profitability levels. Further, changes in the various post-crisis sub-periods are compared with the crisis profitability levels to determine the time taken by firms to return to profitability.

Table 7: Comparison with the Short-Term Reaction Value

Country		Short-term Reaction	Medium-term Reaction	Long-term Reaction
Panel A: Gross Profit Margin				
Indonesia	N	136	489	600
	Mean	0.39	0.31***	0.28***
	Median	0.37	0.28***	0.22***
Korea	N	111	595	674
	Mean	0.23	0.28***	0.29***
	Median	0.21	0.25***	0.25***
Thailand	N	249	720	801
	Mean	0.30	0.31	0.31
	Median	0.28	0.28	0.27
Panel B: Net Profit Margin				
Country		Short-term Reaction	Medium-term Reaction	Long-term Reaction
Indonesia	N	136	489	600
	Mean	-0.07	0.02***	0.03***
	Median	0.00	0.04***	0.03***
Korea	N	111	595	674
	Mean	0.01	0.03	0.04**
	Median	0.02	0.04**	0.05***
Thailand	N	249	720	801
	Mean	0.04	0.01**	0.08**
	Median	0.05	0.04**	0.07**
Panel C: Basic Earning Power				
Country		Short-term Reaction	Medium-term Reaction	Long-term Reaction
Indonesia	N	136	489	600
	Mean	0.14	0.09***	0.06***
	Median	0.11	0.08***	0.04***
Korea	N	111	595	674
	Mean	0.07	0.07	0.09***
	Median	0.06	0.06	0.07***
Thailand	N	249	720	801
	Mean	0.04	0.06**	0.07***
	Median	0.04	0.06***	0.07***
Panel D: Return on Assets				
Country		Short-term Reaction	Medium-term Reaction	Long-term Reaction
Indonesia	N	136	489	600
	Mean	-0.01	0.04***	0.03***
	Median	0.00	0.03***	0.02***
Korea	N	111	595	674
	Mean	0.02	0.04	0.06***
	Median	0.01	0.02*	0.05***
Thailand	N	249	720	801
	Mean	0.04	0.03*	0.06***
	Median	0.04	0.04	0.06***

*Table shows comparison of reaction in the short-term to that in the medium- and long-term. Gross Profit Margi is defined as Gross profit / Sales. Net Profit Margi is defined as Net Income / Sales. Basic Earning Power is defined as Operating Income / Total Assets. Return on assets is defined as Net Income / Average Total Assets. Short-term, medium-term, and long-term is 1, 2-4, and 5-7 years following the crisis year, respectively. Significance of difference in means and medians is calculated using the two-tailed t-test and Wilcoxon Signed Rank Sum Test, respectively. Notation ***, **, and * mean significantly different from the short-term reaction value at 1%, 5%, and 10% level respectively.*

Results for tests for changes in the gross profit margin show that the gross profit margin ratio for Indonesia and Thailand changed significantly in the post-crisis period. The mean and median gross profit margins declined significantly in these countries. However, gross profit margins in Korea, which was the lowest of the three countries in the pre-crisis periods, did not change significantly in the post-crisis periods. The results also show that there was a significant drop in the mean and median net profit ratio for the sample firms in Indonesia and Thailand in the short-term and the medium-term following the financial crisis. In the long-term, the ratio reverted to the pre-crisis levels in Thailand but remained significantly below the pre-crisis level in Indonesia. Korea had the lowest mean and median net profit ratio of the three sample countries in the pre-crisis period. Interestingly, the means did not change significantly following the financial crisis but the median ratios increased significantly.

Changes in the mean and median basic earning power varied from country to country and did not tell a clear story. Possibly this may be due to differences in the cost management practices in different countries which could be explored in further research. However, we note that all sample countries show significant changes in return on assets. The ratio increased in the long-term in Korea and Thailand but declined in Indonesia where it declined in the crisis year and did not recover even in the long-term. Companies in Thailand, on the other hand, were able to recover from the decline in return on assets experienced during the crisis and the mid-term periods. Thus, the asset management practices in these countries too seem to differ and may warrant a future study.

The results of this study show that the financial crisis led to immediate drops in the profitability of firms in our sample countries. However, firms in Korea and Thailand were more adept at adjusting and regaining profitability as compared to firms in Indonesia. The results also show that firms in different countries reacted differently to the financial crisis in their countries. Differences occur in terms of the extent of return to profitability as well as the time taken to return to profitability. However, the general conclusion is that profitability levels at the end of 6 years after the crisis were still not at the pre-crisis levels. This is what is observable in the current crisis as well. Thus, the results of the study suggest that still more time and patience may be required before profitability returns in the current crisis to the pre-crisis levels. The scope of this study has been limited to examining the behavior of ‘active’ firms due to the availability of data in the Compustat (Global) database. Further, the advent of the current financial crisis in 2007 limits use of data beyond 2004 as there are likely to be confounding effects in the years immediately preceding the same.

This study also suggests that, in future research, apart from a deeper probe into firm-level management practices, it may be worthwhile to expand our understanding of the causes, impact and implications of a financial crisis on non-financial and financial firms. A comparison of the extent to which governments provided actions to alleviate the impact of the crisis as well as the speed of such actions could be illuminating. Research in the form of industry wise analysis may also lead to a greater understanding.

Maybe a lot of the problems, and associated heartaches, relating to the current global crisis would have been avoidable if early warning signals of financial distress had been put in place and greater advantage had been taken of the lessons that had been learnt from previous crises, such as the Asian crisis, by governments, managers and investors alike. This could be an additional area of research.

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