DISTRESS RESOLUTION STRATEGIES IN THE BANKING SECTOR: IMPLICATIONS FOR GLOBAL FINANCIAL CRISES*

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ABSTRACT

This chapter investigates the effectiveness and the motivation behind the choice of different types of distress resolution strategies in the banking sector. This is a global study that analyzes key financial characteristics of distressed banks that were either acquired by other banks, divested assets, or were subject to government intervention, as well as the change in the financial profile of those distressed institutions from one year pre-deal to three years post-deal. The results show that governments intervene in the (relatively) best performers that only underperform in liquidity ratios, an indication of critical short-term flow problems. Distressed sellers, the underperformers of the three groups, enjoy much improved performance, in particular in cross-border deals. There is some evidence of foreign acquirers 'cherry picking' the least distressed banks, though no significant differences in target performance remain post-deal between cross-border and domestic deals. These findings provide some useful guidance for policy makers globally and for future financial crises that impact the banking sector.

Key words: Banking sector; Distressed acquisitions; Distressed divestitures; Government intervention.

JEL classification: G21, G28

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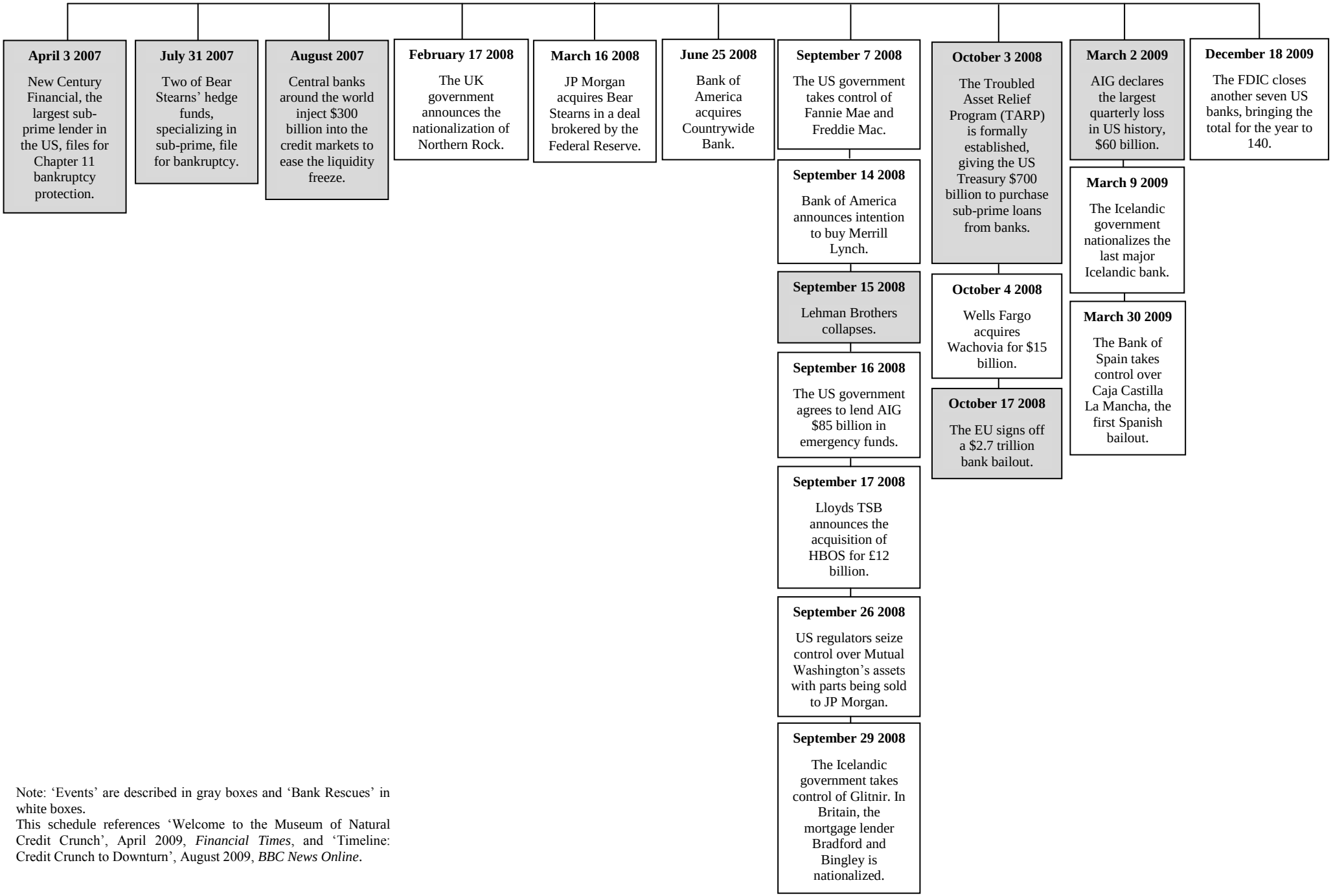
INTRODUCTION

The 2007 – 2009 global financial crisis has had a major impact in the banking sector leading to the need to identify the most effective strategies that can be adopted by banks and government agencies to resolve corporate distress in the industry. Worldwide, governments have been forced to step in and orchestrate massive bailouts in order to prevent the financial world from collapsing (e.g., Northern Rock, Fannie Mae, and Freddie Mac) as shown in the timeline of events illustrated in Figure 1.

Figure 1: 2007 - 2009 Global Financial Crisis – Chronology of Events and Bank Rescues



Note: 'Events' are described in gray boxes and 'Bank Rescues' in white boxes.
This schedule references 'Welcome to the Museum of Natural Credit Crunch', April 2009, *Financial Times*, and 'Timeline: Credit Crunch to Downturn', August 2009, *BBC News Online*.

In just the US, it has been estimated that the asset relief program, which was implemented to prevent a collapse of the entire banking system in 2008, amounted to $700 billion (Guerrera and Guha, 2010). In the context of the high costs associated with government bailout programs and the need to recover the funds provided to financial institutions by the government, many academics and practitioners have questioned the effectiveness of government intervention as a distress resolution strategy. Consequently, the ability to identify viable alternatives to government intervention in the banking sector such as acquisitions (e.g., Wells Fargo's acquisition of Wachovia) and divestitures (e.g., Barclays' announced sale of iShares and Banco Popolare's divestiture of 33 branches to Credit Emiliano), including cross-border deals (e.g., Banco Santander's acquisition of Sovereign Bancorp), is an issue of particular interest and importance for academics and practitioners alike. In fact, Tschoegl (2004) argues that "foreign banks can act as rehabilitators of weak or failed banks" with their most obvious role being that of recapitalizing and restructuring the distressed banks. However, they are more likely to take over banks in relatively better shape. Note as well that this phenomenon is not new, as healthy banks have been involved in the purchase of weak or failing banks for many decades, often with the support or encouragement of governments. Deutsche Bank's cross-border acquisition of Bankers Trust in 1999 is just one such example. This chapter will, however, focus on the implications of these deals in today's market, although building on a database of such deals going back to 1994, and utilize a global database covering targets from 20 different countries. Approximately 60% of the deals are cross-border (excluding government deals).

There are different restructuring methods that a financial institution at risk of default can use for the purpose of resolving distress: i) the distressed bank may be acquired by another bank and thereby rescued through an injection of fresh capital; ii) the distressed bank may be the acquirer in a merger and acquisition (M&A) deal as a survival strategy via the acquisition of assets or even an entire financial institution; this deal type can be structured as a merger of equals or a reverse takeover, where the payment structure is such that the target transforms into the acquirer; iii) the distressed bank may divest assets in order to increase cash levels and improve capital adequacy; often, the assets that are divested are profitable and represent the 'crown jewels' of the business of the distressed seller; iv) survival M&A deals may be orchestrated by the government when banks that are of great significance to a national banking system (due to reputation, size, or interbank connections) are at risk of default; in these cases it is not unusual for the government to step in and 'encourage' a deal; and v) the government may act as the lender of last resort, rescuing the bank by using taxpayers' money

or nationalizing the bank. The first three of these methods are most often structured as domestic deals, but can also be cross-border.

So far, there has been no methodical and comprehensive analysis of the different restructuring types that can be employed as distress resolution methods in the banking sector and the way these deals may be a function of or impact on the financial characteristics of banks involved in such deals, as noted by Elsas (2007). Studies of deals involving distressed banks are very few and limited in scope, focusing on the probability of bank failure through liquidation or acquisition by another bank (Wheelock and Wilson, 2000), or the comparison of M&A deals involving distressed and non-distressed banks (Elsas, 2007; Koetter et al, 2007). In what concerns cross-border deals, only the following three papers focus on the target banks, and their findings are somehow mixed: while there is generally some consensus that target banks are poor performers prior to the acquisition, the first study finds increases in profit efficiency but not in cost efficiency or profitability (Vander and Vennet, 2002), another shows no performance improvements (Correa, 2008), and the most recent study finds subsequent improvements in profitability and efficiency (Fraser, 2009). The aim of this chapter is thus to bring these different research papers together by analyzing distressed banks involved in M&A deals whether through acquisitions, divestitures, or government intervention.

The ability to resolve distress in banks in an efficient manner is of crucial importance to the sound functioning of national and global financial systems. In fact, the financial system of any particular country plays a pivotal role owing to three key characteristics of banks and the banking system which render them different from the rest of the economy. Firstly, banks transfer financial capital from economic agents with surplus funds to those with a deficit. Secondly, the sound functioning of any banking system is founded on the basis of confidence in the financial stability of the banking institutions themselves. Thirdly, due to the nature of the banking system, the bankruptcy of one bank may trigger contagion effects within the financial sector and result in the collapse of the entire system. These three characteristics of the financial system imply that the inability to resolve effectively distress in the sector could lead to severe loss of welfare for society and significant value erosion for the economy as a whole.

In order to analyze the different methods of eliminating distress that have been adopted by financial institutions at risk of default, this chapter examines a unique dataset of 59 representative deals that involved distressed banks over the period 1994 – 2005. Since information about banks that are at risk of default is most often confidential, this study uses

the ratio of non-performing loans to total loans (based on a three-year industry moving average) in order to identify the banks that were distressed within the examined sample (see Carapeto et al., 2010). In addition, it is assumed that those banks which were the subject of government intervention (i.e., majority acquisition) were distressed. Following Tschoegl's (2004) observation of the rehabilitation role that foreign banks can play as acquirers of distressed banks, the analysis considers a cross-section of domestic and cross-border deals. Specifically, the sample comprises 14 cases of government intervention, 18 divestitures of major assets (including six cross-border deals), and 20 cases where the distressed bank was acquired (including 14 cross-border acquisitions); note that there were no cases of distressed banks acquiring other banks, although in theory this option would exist as mentioned above. It should be noted as well that, in order to analyze the effectiveness and efficiency of different types of restructuring deals as distress resolution techniques, it is necessary to take into account all the different costs that are foregone by avoiding the bankruptcy of financial institutions. This type of analysis requires, however, the ability to measure the foregone social costs associated with the bankruptcy of financial institutions, as well as the indirect financial and economic costs that could result from the contagion effects associated with the bankruptcy of banks. Since it is very difficult to capture these types of foregone costs associated with bank bankruptcy, this study instead considers the perspective of the investors in financial institutions when analyzing the effectiveness of different distress resolution techniques, and therefore their interest in the financial performance of the banks in which they own shares as that financial performance will have a direct impact on shareholder value. As a result, the analysis performed in this chapter is focused entirely on the financial profile of banks and how this financial profile is impacted by the different distress resolution methods. Although this study analyzes a period of one year prior to three years post-deal, results of distress resolution strategies may require longer to take full effect, yet it is clear that the first three years post-deal will certainly provide a strong indication of the likely direction of that long-term performance

Using financial ratios one year prior to the deals, the results show that distressed banks with government intervention are the best performers to start with. This finding is true for all of the financial performance factors except for the issue of liquidity, where these deals underperform the other methods of intervention. This result is because critical short-term liquidity problems constitute the main reason for the government intervention. Strategies involving the sale of divisions in distressed banks especially to foreign banks are associated with much improved performance post-deal, in particular because, prior to the deal, distressed sellers are the underperformers of the three groups. Distressed targets are

somewhere in the middle when it comes to performance, with some evidence of 'cherry picking' by foreign acquirers of the least distressed banks. Three years later no differences persist in performance between targets of cross-border and domestic acquisitions, as the distressed targets involved in domestic deals catch up with those acquired in cross-border transactions.

As the study uses three-year performance post-deal to determine success, it has not been possible to include the more recent distressed banking deals, e.g., Bank of America's acquisition in late 2008 of Merrill Lynch or Lloyds TSB's purchase of HBOS in the same period. Nevertheless, the analysis of a recent global sample of distressed banks over 2007 – 2009 reveals that the motivation behind their choice of resolution strategies in terms of one-year performance prior to deal announcement is consistent for most factors with the results outlined here for deals from the earlier years. As such, the findings of this research may therefore be extended to the recent financial crisis.

The remainder of the chapter is organized as follows: Section 2 provides a review of the literature on distressed and non-distressed M&A deals within the financial services sector as well as the role and consequences of government intervention in the sector. Section 3 describes the sample and methodology used in the study. Section 4 discusses the empirical results and Section 5 concludes.

LITERATURE REVIEW

The existing literature on mergers and acquisitions within the financial services sector is vast and the majority of empirical studies are based on US data. The results on post-M&A performance are typically quite mixed. Findings range from improvements in cost efficiency (Becalli and Frantz, 2009) and profitability (Cornett and Tehranian, 1992) to no improvements in operating efficiency (Chamberlain, 1998), profit efficiency, or profitability (Linder and Crane, 1992; Beccalli and Frantz, 2009). On the international side, Correa (2008) finds that, compared to domestic deals, target banks involved in cross-border deals are typically larger, poor performers, and fail to enjoy improvements in performance post-deal, with routine decreases in net interest margin to gain market share in developed markets or increased overhead costs in emerging markets. Fraser and Zhang (2009) corroborate the poor operating performance of targets involved in cross-border acquisitions in the years leading up to the deals, but finds subsequent improvements in profitability and efficiency. However, Vander and Vennet (2002) show that target banks enjoy increases in profit efficiency but not

in cost efficiency or profitability in cross-border deals. Beccalli and Frantz (2009) find improvements in cost efficiency but a slight deterioration in profitability and profit efficiency for the combined entity following cross-border deals.

Since the objective of this chapter is to analyze the choice of deal as a distress resolution technique, this literature review is focused on those studies that examine the performance characteristics of targets and acquirers before and after the completion of distressed M&A deals. The review starts with the key studies on distressed deals and is followed by those studies that analyze the effects of government intervention within the financial services sector.

Distressed Deals

Wheelock and Wilson (2000) relate the probability of bank failure (including acquisition by another bank) in the USA to various bank characteristics, with a special emphasis on managerial quality as reflected in alternative measures of productive efficiency. The sample of banks included in the study comprises 231 failed banks and 2,380 banks that were acquired over a period from1984 to1993. The results of the study suggest that small banks with low leverage and high asset quality, profitability, liquidity, and efficiency are more likely to be acquired.

Elsas (2007) examines the consequences of the use of M&A deals to resolve financial distress of 266 distressed banks from a total of 2,480 banks in Germany over the period 1993 – 2001. The results of the study show that if a bank is distressed, then there is an increased probability that it will participate in an M&A deal. In addition, the asset quality of the combined entity increases substantially for several years after a distressed deal. The findings also indicate that there is a temporary decrease in profitability and no significant change in the degree of default risk or cost efficiency. Altogether, there is evidence of diversification gains for the combined entity relative to non-distressed M&A deals.

Koetter et al. (2007) use undisclosed information to compare the characteristics of acquirers and targets that participated in about 1,000 M&A deals in Germany over the period 1995 – 2001, including 141 distressed targets. According to the results of the study, distressed participants in M&A deals have in general bad financial profiles, defined by lower capital reserve ratios, lower exposure to securities business, higher net loan loss provisions, and below average efficiency, relative to banks that do not participate in M&A deals.

Government Intervention

Since the financial sector is prone to periods of instability and is also highly regulated, it is important to analyze the role of the regulatory environment and regulatory intervention when examining financial institutions. The major role of regulators and, more specifically, government agencies as the principal actors in the regulatory framework is to monitor the financial soundness of banks and the financial stability of the entire banking system. This role is particularly important when a bank is at risk of default. In the majority of cases, government bodies have to step in and act as intermediaries in order to prevent individual bank failures and systemic banking crises. According to Laeven and Valencia (2008), there are three methods that government agencies can adopt in order to prevent firm-specific and systemic failures: i) the government can encourage a healthy bank to acquire the distressed one; ii) the distressed bank can be recapitalized via the injection of fresh capital by the government; and iii) the government can establish an asset management company in order to buy all the non-performing bank assets (the so-called 'bad bank' solution). The review of the literature on government intervention within the financial services sector shows that there is little agreement on what constitutes best practice or even good practice when considering the possible policies to prevent the bankruptcy of financial institutions and avoid or resolve systemic financial crises.

Laeven and Valencia (2008) compare the above-mentioned methods of government intervention in order to determine which type of policy works most effectively under different economic circumstances. According to the results of the study, the fiscal costs and output losses associated with policies to resolve systemic financial crises can be considerable. The study also indicates that emergency liquidity support and the provision of government guarantees have been the most frequently used policy tools for managing financial crises by governments in the past. Bank recapitalization programs can be successful if they are selective with regard to the institutions which they entitle to assistance, if they specify quantifiable rules that determine access to preferred stock assistance and if they implement capital regulation requirements which establish meaningful standards for risk-based capital. The formation of government-owned asset management firms appears least effective in terms of resolving distress, owing to legal and political constraints. In order to resolve the financial distress of companies and households, intervention via the implementation of targeted debt relief programs to distressed borrowers and corporate restructuring programs appear most successful.

The issue of the effectiveness of government intervention in resolving distress is of particular importance in the context of the US government rescue plan developed in 2009 in order to acquire the non-performing assets of a large number of distressed financial institutions. The so-called 'Geithner-Summers Plan' involved a public-private investment program (PPIP) that was set up to absorb the impaired assets of distressed banks which was intended to enable those distressed institutions to resume lending. This government rescue strategy has certainly been criticized by many academics and economists for creating an overbid of assets at the expense of taxpayers. Wilson (2009) argues that shareholders of banks that face insolvency will sell impaired assets at a price equal to their expected future value plus the value of the put option that shareholders hold, owing to their limited liability. Consequently, according to that author, the government is not able to acquire the non-performing assets of distressed banks without simultaneously providing the banks that voluntarily participate in the asset sell-off with substantial taxpayers' subsidy.

In addition, Sachs (2009) argues that the rescue plan devised by the US Treasury is inefficient due to the fact that the PPIPs will be purchasing the non-performing assets of distressed banks at a premium. Using an analysis of the capital structure of the purchase deal, the author shows how the price that will be paid in order to acquire the impaired assets includes a subsidy to the shareholders of the distressed bank. The Federal Deposit Insurance Corporation finances 85.7% of the asset purchase via a non-recourse loan and the US Treasury and private investors each commit 7.15% respectively. As a result of this capital structure of the deal, it is expected that private investors will be willing to offer a higher price than the expected future value of the non-performing assets which should equal the maximum price under which they can still break even.

Ayotte and Skeel (2009) analyze the effectiveness of government bailouts as a method to resolve bank distress and avoid systemic banking crises. The authors suggest that government rescue loans could increase uncertainty and the costs of moral hazard, and dampen the incentive of financial institutions to attempt and prevent or resolve distress without the provision of government aid. Consequently, the study concludes that government rescue schemes are likely to create costs over and above the direct costs to the taxpayer of the rescue funding. While there are considerable costs associated with resolving distress via filing for bankruptcy using Chapter 11 of the United States Bankruptcy Code, the authors argue that the firm-specific costs related to bankruptcy tend to be overstated and may not be sufficient to justify government intervention.

In summary, the review of the literature on distressed M&A within the banking sector shows that there is no systematic and comprehensive analysis of the motivation behind the use of the different distressed M&A deal structures that banks participate in and their post-merger performance. More specifically, no studies compare the motivation behind using government intervention, outright M&A, or divestitures as strategies to resolve financial distress. In addition, there are no empirical studies that examine the effectiveness of the different strategies to deal with financial distress in terms of the changes in the key financial characteristics of the financial institutions that adopt and/or become the subject of these distress resolution techniques. Consequently, the primary objective of this chapter is to eliminate this existing deficiency within the literature on M&A deals within the banking sector.

DATA AND METHODOLOGY

This study analyzes the characteristics of distressed banks with respect to their size, asset quality, capital adequacy, efficiency, profitability, and liquidity one year prior to the announcement of restructuring deals, and how these characteristics change afterwards. Table 1 presents the specific accounting ratios that have been used to proxy for these financial characteristics.

Table 1: Definitions of Financial Ratios

TYPE	RATIO	DEFINITION
Size	Total Assets	The value of a bank's total assets is used as a proxy for size.
Asset Quality	Loan Loss Provision to Net Interest Revenue	This ratio represents the relationship between provisions of expected future losses in a bank's income statement and the interest income generated over the same period. In a well run bank, if the lending policy is higher risk, then the approach should be compensated by higher interest margins. Therefore, this ratio should be as low as possible.
Capital Adequacy	Total Equity to Total Assets	This ratio represents bank equity capital functions as a cushion against unexpected losses in asset value. Consequently, this ratio measures the degree to which a bank is protected against a sudden fall in asset value and the higher the ratio, the less vulnerable a bank is.
Efficiency	Cost to Income Ratio	This ratio equals total overhead costs of a bank divided by the income generated before accounting for any provisions. The lower the ratio, the more efficient a bank is.
Profitability	Return on Average Assets	This ratio equals the net income generated by the bank before any interest and dividend payments divided by the average of the total assets of the bank of the year before and the year in which the income was earned. This ratio is used to compare the efficiency and operational performance between different banks. The higher the ratio the better.
	Net Interest Margin	This ratio equals the net interest income a bank generates as a percentage of its operating assets. A higher ratio indicates that a bank is charging a high interest margin or that it can acquire cheap funding. Higher profitability and interest margins are desirable as long as they do not result in a deterioration of the quality of bank assets.
Liquidity	Interbank Ratio	This ratio is equal to the funds lent to other banks divided by the funds borrowed from other banks. A ratio higher than 100% indicates that a bank is a net lender and vice versa. A higher ratio indicates a better liquidity position.
	Net Loans to Total Assets	This ratio equals net loans divided by total assets and indicates what proportion of a bank's assets are tied up in loans. A lower ratio indicates a better liquidity position.

In order to perform the above-mentioned type of analysis, it is necessary to have a reliable, accurate, and simple measure of distress to be able to distinguish between the distressed and non-distressed deals. Following Carapeto et al. (2010), this study uses the ratio of non-performing loans to total loans based on a three-year industry moving average to distinguish between distressed and healthy financial institutions. In addition, those banks in the sample which are targets of government agencies are assumed to be distressed since the only feasible motivation behind government agencies acquiring banks is to resolve distress. This study investigates the direct financial effects of different distress resolution techniques and, as a result, takes the perspective of the investors of the financial institutions that participate in distressed deals. This approach is adopted due to the fact that the indirect costs that are foregone by avoiding the bankruptcy of financial institutions (e.g., social costs and the economic and financial costs that could result from the contagion effects of the failure of banks) are difficult to capture with the use of financial ratios or other company-specific data. As noted above, this study analyzes performance over a period of one year before to three years after the announcement of the deals, despite the recognition of the fact that the results of the implemented strategies to resolve distress may require much longer to materialize.

This study uses data on mergers, acquisitions, and divestiture deals in the banking sector acquired from the Bloomberg database. The sample is global and comprises all 1,930 announced and completed banking deals over the period 1987 – 2005, including 1,216 acquisitions, 695 divestitures, and 19 government interventions (majority purchases). As three-year performance is then analyzed for each deal, the sample period extends to 2008. The search criteria for relevant deals did not include any specific constraints, apart from limiting the observations of targets and sellers to public companies within the banking industry and the need to analyze the performance of the distressed banks one year prior to the deal and three years afterwards. In this initial sample, there are 25 distressed targets and 28 distressed sellers using the definition of distress from Carapeto et al. (2010). Issues of data availability restrict the final sample to 59 deals (down from 72, hence still quite representative) which comprises 14 cases of government intervention, 25 divestitures, and 20 acquisitions, within the period from 1994 to 2005. Of these, almost half (27) are cross-border deals (14 acquisitions and 13 divestitures). Table 2 shows the time-series distribution of the sample of distressed banks as well as type of deals and country of target in the final sample.

Table 2: Sample Description

Panel A: Time-series distribution

Year	Acquisition	Divestiture	Government	Total
1994			1	1
1996			1	1
1997		1		1
1998		1	2	3
1999	4	1		5
2000	5	5	4	14
2001	3	1	3	7
2002	1	3	1	5
2003	3	7	1	11
2004	4	1		5
2005		5	1	6
Total	20	25	14	59

Panel B: Cross-border/domestic distribution

Restructuring Type	Cross-Border	Domestic	Total
Acquisition	14	6	20
Divestiture	13	12	25
Government			14
Total	27	18	59

Panel C: Country distribution

Country	Acquisition	Divestiture	Government	Total
Canada		1		1
China	1		1	2
Croatia	3			3
Denmark			1	1
Germany		2	1	3
India			1	1
Indonesia	1		1	2
Israel		1		1
Italy	7	8	2	17
Japan	1	1	1	3
Lithuania			1	1
Malaysia		1		1
Norway			1	1
Philippines	1	3		4
Poland	6	3	2	11
Portugal		1		1
Romania			1	1
United Kingdom		1		1
United States		3		3
Venezuela			1	1
Total	20	25	14	59

Financial ratios are collected for each bank over a period of one year prior to three years after the announcement of the deal from the Bureau van Dijk's BankScope database. Information from the BankScope database has also been used to estimate industry medians. In order to ensure consistency when calculating the industry medians, certain categories of banks ('clearing institutions' and 'other non-banking credit institutions') were excluded from the dataset due to the fact that these groupings were not represented in the sample of deals that is examined in this study. Each accounting ratio is adjusted for industry effects by subtracting the industry median for the corresponding year. This procedure ensures that financial institutions are analyzed relative to their peers and thereby strengthens the validity of the findings of the study, consistent with e.g., Fraser and Zhang (2009). The analysis of the characteristics of participants in distressed M&A deals involves tests of equality of medians between different groups of targets and sellers, and the performance analysis comprises tests of the changes in the accounting measures examined in this study from the aforementioned one year prior to the deal to three years post-deal outcomes.

RESULTS

Motivation behind the Choice of Distress Resolution Methods

Table 3 shows the analysis of the different financial characteristics of distressed targets and sellers one year prior to the announcement of M&A, divestiture, or government intervention, in order to identify motivational differences with regard to the resolution strategy that the distressed banks adopt and/or to which they become subject.

Table 3: Bank Performance Pre-Restructuring

Ratios	Acquisitions		Test[a]	Divestitures		Test[b]	Government		Test[c]	Total	
Size	20			25			14			59	
Median	8,358.25		***	41,036.10		**	10,336.40			18,884.50	
Loan Loss Provision to Net Interest Revenue	20			25			12			57	
Median	27.49			35.58		***	11.82			27.38	
Industry-Median Adjusted	26.14	***		34.17	***	***	10.21	**		26.03	***
Total Equity to Total Assets	20			25			13			58	
Median	7.51		*	5.48		***	16.61		***	7.31	
Industry-Median Adjusted	-1.00		*	-2.91	**	***	15.74	***	***	-0.62	
Cost to Income Ratio	20			25			14			59	
Median	65.67			70.72		***	1.48		***	64.28	
Industry-Median Adjusted	0.28			5.18		**	0.84			0.87	
Return on Average Assets	20			25			14			59	
Median	0.35			0.21		***	8.10		***	0.57	
Industry-Median Adjusted	-0.34	**		-0.61	***	***	7.41	***	***	-0.20	*
Net Interest Margin	20			25			14			59	
Median	3.37		**	2.33			3.15			3.03	
Industry-Median Adjusted	-0.27		**	-1.30	***	***	1.91	**	**	-0.35	
Interbank Ratio	15			20			14			49	
Median	69.80			70.34		***	44.61		***	58.61	
Industry-Median Adjusted	-7.18		*	-19.84	***		37.09			-14.95	
Net Loans to Total Assets	20			24			14			58	
Median	56.26			59.10			53.64			57.34	
Industry-Median Adjusted	-4.08	***		-0.07		***	46.49	*	***	-0.85	

Notes: ***, **, and * mean significant at the 1%, 5%, and 10% level, respectively, and refer to the sign test on the significance of Industry Median-adjusted indicators. a, b, and c refer to the sign test on comparison of medians between ‘acquisition’ and ‘divestiture,’ ‘divestiture’ and ‘government,’ and ‘acquisition’ and ‘government,’ respectively.

According to the results of the tests, distressed banks involved in the three types of restructuring deals are typically less profitable and display lower asset quality than their peers, as expected. In general, distressed targets and sellers have significantly unfavorable median-adjusted indicators. Distressed sellers are much larger than those banks in the other two categories and are the worst in terms of all indicators except for efficiency, where they are not significantly different from targets of distressed acquisitions. Distressed targets are in the middle, though their performance is not good using median-adjusted ratios as they underperform their peers in terms of asset quality and profitability, but their liquidity levels are better. Distressed banks in which the government intervened enjoy better asset quality, capital adequacy, efficiency, and profitability when compared to banks involved in the other deals. The problem of government-intervened banks lies in their poor liquidity, which emphasizes the flow-based insolvency of these banks as opposed to stock-based insolvency (see Wruck, 1990). Thus, these banks are 'fair performers' with short-term cash-flow issues. The fact that these banks are not relatively larger does not support the argument that they are 'too big to fail.'

Effectiveness of the Different Distress Resolution Methods

In order to identify the most efficient distress resolution methods, it is necessary to examine the changes in the financial characteristics of the distressed banks that adopt these different techniques. The results of this analysis are presented in Table 4.

Table 4: Bank Performance Post-Restructuring

Ratios	Acquisitions		Test[a]	Divestitures		Test[b]	Government		Test[c]	Total	
Size	20			25			14			59	
Median	13,627.40		***	67,703.70			15,437.90			24,913.00	
Year -1 to Year +3	UP	***		UP	**		UP	***		UP	***
Loan Loss Provision to Net Interest Revenue	20			25			12			57	
Median	17.93			16.95			11.52			16.01	
Year -1 to Year +3											
Industry-Median Adjusted	16.58	***		15.61	***		10.13	**		15.61	***
Year -1 to Year +3											
Total Equity to Total Assets	20			25			13			58	
Median	8.15			7.87		***	12.60		***	8.68	
Year -1 to Year +3				UP	***					UP	***
Industry-Median Adjusted	-1.17	***		-1.77		***	11.13	***	***	-0.58	
Year -1 to Year +3				UP	***						
Cost to Income Ratio	20			25			14			59	
Median	66.45			62.70		***	1.68		***	60.87	
Year -1 to Year +3											
Industry-Median Adjusted	1.42			-3.43		***	-63.19		***	-1.67	
Year -1 to Year +3											
Return on Average Assets	20			25			14			59	
Median	0.98			0.92		***	12.60		***	1.05	
Year -1 to Year +3				UP	**					UP	***
Industry-Median Adjusted	0.10			-0.02		***	12.16	***	***	0.21	
Year -1 to Year +3				UP	*					UP	**
Net Interest Margin	20			25			14			59	
Median	3.18		**	2.42			3.00			2.73	
Year -1 to Year +3											
Industry-Median Adjusted	-0.49		**	-1.18	***	***	0.46			-0.62	***
Year -1 to Year +3											
Interbank Ratio	15			20			14			49	
Median	99.18			110.79		***	58.12		***	75.58	
Year -1 to Year +3				UP	***					UP	***
Industry-Median Adjusted	0.42			17.08		*	-22.99			5.10	
Year -1 to Year +3											
Net Loans to Total Assets	20			24			14			58	
Median	57.22			61.33		***	75.28		**	60.54	
Year -1 to Year +3							UP	*		UP	**
Industry-Median Adjusted	-3.78	**		-3.06		***	29.76	*	***	-0.68	
Year -1 to Year +3											

Notes: ***, **, and * mean significant at the 1%, 5%, and 10% level, respectively, and refer to the sign test on the significance of Industry Median-adjusted indicators. a, b, and c refer to the sign test on comparison of medians between ‘acquisition’ and ‘divestiture,’ ‘divestiture’ and ‘government,’ and ‘acquisition’ and ‘government,’ respectively.

For the restructuring deals, all banks have significantly increased in size over the four-year span. The banks with government intervention are still the best performers but there are now no significant changes between distressed targets and distressed sellers except for profitability, with evidence of distressed targets enjoying a larger net interest margin. The winners are the distressed sellers, showing significant improvements in capital adequacy, profitability, and liquidity. While the performance indicators for distressed targets have not significantly changed, there is evidence of liquidity deterioration for those banks in which the government intervened.

These findings should however be interpreted with caution since the sample size is not very large and the focus is on the performance one year prior to the M&A deal or divestiture announcement to three years afterwards. As noted earlier, some of the effects associated with the implemented distress resolution strategies may take longer to manifest.

Cross-Border Deals

Table 5 provides a comparison of the financial characteristics of cross-border and domestic deals in the different types of restructuring methods one year prior to the announcement of M&A deal or divestiture. As before, the aim is to identify motivational differences regarding the resolution strategy that the distressed banks adopt or to which they become subject.

Table 5: Bank Performance Pre-Restructuring – Cross-Border vs. Domestic Deals

	Acquisitions						Divestitures						Total					
Ratios	Cross-Border		Test[a]	Domestic			Cross-Border		Test[b]	Domestic			Cross-Border		Test[c]	Domestic		
Size	14			6			13			12			27			18		
Median	13,184.00		***	1,491.95			41,036.10			77,678.80			24,691.00			10,525.00		
Loan Loss Provision to Net Interest Revenue	14			6			13			12			27			18		
Median	27.10			30.19			37.01			29.37			31.18			29.37		
Industry-Median Adjusted	25.74	***		28.82	**		35.60	***		27.99	***		29.81	***		27.99	***	
Total Equity to Total Assets	14			6			13			12			27			18		
Median	7.08			7.64			5.48			5.26			6.35			7.14		
Industry-Median Adjusted	-1.08			-1.00			-2.91	**		-2.54			-2.56	**		-1.49		
Cost to Income Ratio	14			6			13			12			27			18		
Median	63.81		**	87.79			66.28			70.72			65.98		**	71.38		
Industry-Median Adjusted	-3.34		**	22.60			2.27			5.37			0.36		**	6.21		
Return on Average Assets	14			6			13			12			27			18		
Median	0.59		**	0.10			0.21			0.22			0.53			0.20		
Industry-Median Adjusted	-0.16		*	-0.66	**		-0.38	***		-0.62			-0.30	***		-0.62	***	
Net Interest Margin	14			6			13			12			27			18		
Median	3.42			3.31			2.37			2.33			3.03			2.96		
Industry-Median Adjusted	0.10			-0.41			-1.24	***		-1.39			-0.64	**		-0.72	*	
Interbank Ratio	12			3			11			9			23			12		
Median	64.46			192.96			70.34			70.34			69.80			70.34		
Industry-Median Adjusted	-11.07			112.80			-19.84	**		-19.84			-16.04	*		-19.84		
Net Loans to Total Assets	14			6			13			11			27			17		
Median	52.40		***	60.10			57.92			60.28			56.65		*	60.28		
Industry-Median Adjusted	-9.22	***	***	-0.06			-0.07			-0.07			-3.82	***	*	-0.07		

Notes: ***, **, and * mean significant at the 1%, 5%, and 10% level, respectively, and refer to the sign test on the significance of Industry Median-adjusted indicators. a, b, and c, refer to the sign test on comparison of medians between ‘cross-border’ and ‘domestic’ for ‘acquisition,’ ‘divestiture,’ and ‘total,’ respectively.

According to the results of the tests, distressed banks involved in cross-border deals are typically more liquid and efficient than those engaged in domestic deals. Distressed sellers in cross-border deals are underperformers compared to their peers except for the efficiency ratio, where there is no significant difference. Still, there are no significant differences between distressed sellers involved in domestic and cross-border deals. The situation is, however, the reverse when it comes to acquisitions as foreign acquirers seem to 'cherry pick' the relatively largest and least distressed banks; that is, these targets are more profitable, efficient, and liquid compared to distressed targets in domestic deals. This evidence thus supports Tschoegl's (2004) argument that foreign banks are more likely to take over banks in relatively better shape yet still they underperform their peers, in line with Correa (2008) and Fraser and Zhang (2009).

Regarding the analysis of the changes in the financial characteristics of the distressed banks following the restructuring, Table 6 presents the results classified by type of deal.

Table 6: Bank Performance Post-Restructuring – Cross-Border vs. Domestic Deals

	Acquisitions				Divestitures				Total			
Ratios	Cross-Border		Test[a]	Domestic	Cross-Border		Test[b]	Domestic	Cross-Border		Test[c]	Domestic
Size	14			6	13			12	27			18
Median	20,179.30		***	1,399.50	67,703.70			52,665.40	39,061.20		*	14,717.50
Year -1 to Year +3	UP	**			UP	*			UP	***		
Loan Loss Provision to Net Interest Revenue	14			6	13			12	27			18
Median	16.65			21.99	16.95			15.47	16.95			20.22
Year -1 to Year +3												
Industry-Median Adjusted	15.27	**		20.67	15.61	**		14.14	15.61	***		18.96
Year -1 to Year +3												***
Total Equity to Total Assets	14			6	13			12	27			18
Median	8.15			8.33	7.28			8.67	7.87		*	8.57
Year -1 to Year +3				UP	** UP	**		UP	***			UP ***
Industry-Median Adjusted	-1.17	**		-1.15	-2.06	*		-0.62	-1.77	***	*	-0.87
Year -1 to Year +3					UP	**						UP *
Cost to Income Ratio	14			6	13			12	27			18
Median	66.34			66.87	65.89			60.87	65.89			61.79
Year -1 to Year +3												DOWN *
Industry-Median Adjusted	1.42			1.71	-0.67			-3.43	0.62			-3.00
Year -1 to Year +3												DOWN *
Return on Average Assets	14			6	13			12	27			18
Median	1.03			0.60	0.92			0.92	0.94			0.90
Year -1 to Year +3				UP	** UP	*						UP **
Industry-Median Adjusted	0.12			-0.30	-0.02			0.01	0.05			-0.02
Year -1 to Year +3					UP	*						
Net Interest Margin	14			6	13			12	27			18
Median	3.18			2.85	2.32			2.58	2.73			2.59
Year -1 to Year +3					DOWN	*						
Industry-Median Adjusted	-0.49			-0.76	-1.21	**		-1.05	-0.97	**		-1.04
Year -1 to Year +3												**
Interbank Ratio	12			3	11			9	23			12
Median	94.61			229.73	120.74			96.15	100.84			108.45
Year -1 to Year +3					UP	*						
Industry-Median Adjusted	0.14			143.97	38.62			5.98	5.10			17.08
Year -1 to Year +3												
Net Loans to Total Assets	14			6	13			11	27			17
Median	54.56			61.43	61.39			61.27	56.97			61.27
Year -1 to Year +3												
Industry-Median Adjusted	-7.96	*		-0.68	-4.58			0.92	-7.06	**		-0.51
Year -1 to Year +3												

Notes: ***, **, and * mean significant at the 1%, 5%, and 10% level, respectively, and refer to the sign test on the significance of Industry Median-adjusted indicators. a, b, and c, refer to the sign test on comparison of medians between 'cross-border' and 'domestic' for 'acquisition,' 'divestiture,' and 'total,' respectively.

Following the restructuring deals, banks in all cross-border deals have significantly increased in size over the four-year span while those in domestic deals have improved their efficiency. Three years after the deals, the performance of the distressed banks is very different. If before the deals, distressed targets in cross-border deals were in better shape than those in domestic deals, three years later there are no significant differences in performance, mainly as a result of significant improvements in capital adequacy and profitability in the latter banks. Conversely, the distressed sellers involved in cross-border deals enjoy significant improvements in profitability, liquidity, and capital adequacy, with distressed sellers in domestic deals also displaying increases in the latter indicator.

The results support Correa (2008) and Vander and Vennet (2002) as they confirm that targets involved in cross-border acquisitions are larger than those in domestic deals and fail to enjoy improvements in performance post-deal. However, the results do not support Correa's (2008) finding that targets in cross-border deals are poor performers compared to those acquired in domestic deals. Nor do they support Fraser and Zhang's (2009) observation of improvements in profitability and efficiency post-deal.

Evidence from Recent Bank Failures

In order to see whether the results of the study can be extended to recent bank failures, the financial characteristics of a global sample of 129 distressed targets and sellers were analyzed one year prior to the announcement of an acquisition, divestiture or government intervention during the period 2007 – 2009. Overall, the motivation behind the different distress resolution strategies appears to have been similar during the recent financial crisis to the 1994 – 2005 main sample, as outlined in Table 7.

Table 7: Bank Performance Pre-Restructuring (Recent Financial Crisis)

Ratios	Acquisitions		Test[a]	Divestitures		Test[b]	Government		Test[c]	Total	
Size	30			67			32			129	
Median	10,129.40		**	60,909.50		***	1,535.21		***	6,709.10	
Loan Loss Provision to Net Interest Revenue	30			67			32			129	
Median	16.07		***	50.01		***	8.07		***	23.89	
Industry-Median Adjusted	5.63	***	***	40.48	***		31.80	***	**	19.38	***
Total Equity to Total Assets	30			67			32			129	
Median	6.69			6.02		***	9.16		**	7.07	
Industry-Median Adjusted	-2.89	**		-3.63	***	***	-0.48		**	-2.55	***
Cost to Income Ratio	28			67			32			127	
Median	63.89		***	72.28		*	68.28			70.91	
Industry-Median Adjusted	-3.34		***	3.79	**	*	1.89			2.29	**
Return on Average Assets	30			67			32			129	
Median	0.61		***	-0.41		***	0.72			0.34	
Industry-Median Adjusted	-0.18		***	-1.05	***	***	-0.15			-0.42	***
Net Interest Margin	30			67			32			129	
Median	3.50		**	2.92		***	3.84			3.02	
Industry-Median Adjusted	0.04		**	-0.73	***	***	0.38	**		-0.52	***
Interbank Ratio	17			28			3			48	
Median	40.17		*	87.67			143.15			68.71	
Industry-Median Adjusted	-58.64			-9.61			47.40			-29.50	
Net Loans to Total Assets	30			67			32			129	
Median	56.45			62.12		***	77.55		***	66.76	
Industry-Median Adjusted	-7.55			-4.57		***	12.12	***	***	0.97	

Notes: ***, **, and * mean significant at the 1%, 5%, and 10% level, respectively, and refer to the sign test on the significance of Industry Median-adjusted indicators. a, b, and c refer to the sign test on comparison of medians between ‘acquisition’ and ‘divestiture,’ ‘divestiture’ and ‘government,’ and ‘acquisition’ and ‘government,’ respectively.

As before, distressed banks involved in the three types of restructuring deals are less profitable and display lower asset quality than their peers. In addition, their capital adequacy and efficiency ratios are worse. Distressed targets are still the worst performers prior to the restructuring deals, while banks which have had government intervention suffer from the same liquidity issues as in the main sample (this time proxied by another liquidity ratio). Surprisingly, the evidence points towards governments intervening in the smallest banks during the recent financial crisis, despite the massive bailouts.

It is too early to provide empirical evidence on post-performance following these different restructuring strategies during the recent financial crisis as the methodology used in this research requires three years of data post-deal. However, the fact that the findings with regard to motivation are confirmed by this more recent group of distressed banks suggests that the post-performance results presented in this study may be extended to the recent crisis and used as a reliable predictor of future post-performance outcomes.

CONCLUSION

The recent financial crisis has highlighted the need to assess the efficiency and financial consequences of existing methods to deal with distress and to identify the most effective distress resolution technique(s). Governments around the world have struggled with the decision of whether to rescue failing financial institutions or to allow (or encourage) private sector solutions. The existing literature includes no studies that analyze the motivation behind the different distress resolution techniques that have been adopted in the past or how the financial characteristics of the banks that participate in distressed M&A deals change over time. The chapter's objective is to eliminate this deficiency in the existing literature.

The findings of this study show that distressed banks that choose to divest divisions are the worst performers one year prior to the deal but the most improved three years later. Distressed banks which have government intervention are the best performers over the four-year span, though their persistent major challenge is liquidity. Distressed targets are in between those two groups.

Prior to the deal, while there are no significant differences in performance between distressed sellers involved in domestic and cross-border deals, there is evidence that foreign acquirers seem to 'cherry pick' the least distressed banks. Interestingly, three years later

distressed targets involved in domestic deals have managed to catch up with improvements in capital adequacy and profitability, and, as such, no significant differences remain in performance between distressed targets in cross-border and domestic deals. Conversely, the distressed sellers involved in cross-border deals seem to enjoy an improved performance compared to those involved in domestic deals.

The findings presented in this study should be viewed with caution since they are based on the analysis of the direct financial costs associated with different distress resolution techniques. As a result, the effectiveness of distressed M&A is evaluated from the perspective of the investors of the financial institutions that participate in these types of deals. Further research and analysis is necessary in order to determine the strategy that could resolve financial distress most effectively and efficiently for all stakeholders directly or indirectly affected by it. Also, although the study has examined more recent deals in terms of motivation, in a few years it would be useful to apply this chapter's post-deal performance methodology to these deals to determine if the findings and conclusions do still apply.

There are interesting policy implications for governments and regulators globally. The results from this study provide guidance to governments and regulators throughout the world which may be faced with decisions in a future banking crisis. There is clear evidence from this work that distressed banks with government intervention were the best performers over the period studied, despite the challenges with the long-term liquidity issues in those banks noted above, although the private sector does have better capacity to implement effective distress resolution strategies relative to the public sector in cases of very poor performers (perhaps implying that in these extreme cases, government policy should encourage a private sector solution). This study therefore does provide support for regulations and policies that allow, if not even encourage, bank mergers, acquisitions, and divestitures as a mechanism to resolve distress involving both domestic and foreign banks.

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