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Impact of the Financial Crisis on Banking Acquisitions: a Look at Shareholder Wealth

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Abstract

This paper examines the influence of the 2007-08 financial crisis on value creation for acquirer's shareholders in the banking industry using a sample of 883 deals over 2004-12. Applying an exploratory and top-down approach, we look at banking acquisitions at the global level, narrowing our analysis step-by-step to consider domestic versus cross-border acquisitions, and then split cross-border deals based on the economic development of the acquirer and target countries. We observe that only acquisitions involving emerging-economy acquirers and developed-economy targets generate positive and significant returns to shareholders after the crisis. We also observe major changes in the global acquisition landscape since 2007 with emerging-economy banks increasing their acquisition activity, both nationally and internationally.

Keywords: banking sector, acquisitions, emerging economies, financial crisis, shareholder returns

JEL: G21, G34, G0, F23

1. Introduction

The main purpose of this paper is to identify the influence of the 2007-08 financial crisis on acquisitions in the global banking industry and examine whether such acquisitions created value for acquirer's shareholders after the crisis. The recent financial crisis started as a banking systemic crisis in the United States and had a profound impact on the banking system around the world. According to Billings and Capie (2011), the USA entered in financial crisis in 2007 followed by the UK. Similarly, Estonia, Ireland, and Latvia began experiencing economic recession in the first quarter of 2008, and by the first quarter of 2009, all European countries entered into economic recession (Claessens et al. 2010). In the banking sector, the collapse of Lehman Brothers in 2008 led to a credit crunch and a global banking crisis (Bao, Olson, and Yuan 2011; Pisani-Ferry and Sapir 2010; Arezki, Candelon, and Sy 2011). The years 2007 and 2008 have been defined as the crisis period in several studies (Beltratti and Paladino 2013; Beltratti and Stulz 2012; Rao-Nicholson and Salaber 2014b). Authors have discussed the reckless risks undertaken by managers in the financial sector and the unintended outcomes of these risks leading to untenable losses and eventual bankruptcy of several financial institutions. Stock market indices dropped by 50-75% from the highest due to the crisis (Te Velde et al. 2009) and such stock market devaluation has restrained the value of transactions worldwide. Also, equity and debt financing for mergers and acquisitions became more difficult and expensive after the financial crisis (UNCTAD 2009). Yet, as stock markets worldwide experienced sharp price decreases, especially in the banking industry, this economic distress provided the opportunity for investors to make good deals as some banks were undervalued by the market due to contagion phenomena experienced by this industry.

Two phenomena emerged in this industry, one, domestically, banks consolidated their position through acquisitions, and two, in terms of cross-border acquisitions, banks from emerging economies acquired larger banks in developed markets. Domestic acquisitions and restructuring was mediated and encouraged in several developed economies. In their study, Molyneux et al. (2014) identify this as 'too-big-to-fail' and 'too-systemically-important-to-fail' issues which drive governments to provide safety nets to these large banking institutions. The authors find that safety net benefits resulting from mergers and acquisitions are positively related to rescue probability, implying moral hazard in banking systems. Also, unlike other financial crises which typically emerged from a structural weakness in emerging economies, the recent financial crisis originated in developed countries. This meant that while in previous crises, banks from developed economies acquired banks and other financial institutions from emerging economies, in the fallout of the recent financial crisis, the impetus to global acquisitions was provided by emerging-economy banks like those from China, Russia, Brazil, Malaysia and Qatar.

Nevertheless, acquisitions, especially in the banking industry, have continued throughout these crisis years. Some of these banking acquisitions were driven by the financial distress of the target, such as the fire sale of Bear Stearns to JP Morgan Chase in March 2008. Other bank acquisitions announced after the crisis were motivated by traditional expansion strategies, like the acquisition of Austrian Volksbank International by Russian Sberbank in 2011. Though extant literature has acknowledged the significant impact of systemic

turbulence on acquisition activities (Mitchell and Mulherin 1996; Harford 2005; Mody and Negishi 2000), there has been limited research into the impact of the recent financial turbulence on the performance of acquiring firms. Extant research about the performance of acquisitions during a crisis, including in the banking sector, focuses on a single country or a single region (Tse and Soufani 2001; Beltratti and Paladino 2013; Rao-Nicholson and Salaber 2014b, 2014a). Thus, it is imperative to understand the impact of the financial crisis on the performance of acquisitions in the banking industry at the global level.

Since most studies, even during non-crisis period, are mostly inconclusive for acquirers' short term gains, in this paper we take an exploratory approach towards our research. We use a large sample of 883 bank acquisitions conducted between 2004-12 around the world to investigate the performance of acquirers before and after the financial crisis. To do so, we adopt a top-down approach, looking first at bank acquisitions at a global level, and narrowing our analysis step-by-step to consider domestic versus cross-border acquisitions, and then split cross-border deals based on the economic development of the acquirer and target countries (emerging-economy to emerging-economy (EE-EE), emerging-economy to developed-economy (EE-DE), developed-economy to emerging-economy (DE-EE), and developed-economy to developed-economy (DE-DE)). Such step-by-step analysis allows us to answer very interesting questions and present original evidence about the impact of the financial crisis on the performance of bank acquisitions around the world.

The rest of the paper is structured as follows. Section 2 reviews the literature and motivates a series of empirical questions. Section 3 discusses the methodology used in our research and presents our empirical model. Section 4 elaborates on the data selection process and describes it in detail. Section 5 presents our empirical results and discusses robustness checks. Section 6 concludes.

2. Literature Review and Empirical Questions

Several authors have postulated on the effect of crises on acquisition activity and performance to acquirer's shareholders. Nelson (1959) and other economists have argued that the variation in acquisition activity is narrowly linked to different stages of the business cycle and authors have found that, typically, stock market boom has been connected with a frenzy merger and acquisition activity. The underlying reason for this observation is that during economic boom, there is a willingness of stock markets to allow firms to issue new shares to raise capital and also, average companies experience higher corporate profitability. Conversely, companies and stock markets might adopt a conservative approach during an economic downturn. Thus, authors have suggested a close relationship between general economic performance and takeover activity. In terms of international deals, firms from non-crisis regions will target companies in crisis-affected regions (Mody and Negishi 2000; Aguiar and Gopinath 2005). The increase in the number of crisis-afflicted targets allows stock prices to more clearly reflect advantages for foreign acquirers. During the two 1990s merger waves in the UK, the wealth effect to the bidders' shareholders was found to be sensitive to the economic cycle only for friendly acquisitions (Tse and Soufani 2001). Regarding the Asian crisis, no excess returns were observed during the crisis period for cross-border deals

(Chari, Ouimet, and Tesar 2004). During the same crisis, most bank acquisitions within the region were actually consolidations advanced by local governments to protect their domestic banks (Crouzille, Lepetit, and Bautista 2008). For example, in Malaysia, 54 small banks and financial institutions were merged into six large groups. Banks in countries like Indonesia and Korea experienced similar government-mediated mergers and acquisitions. In the above study, authors find that the market reacted negatively to deals that were used to solve financial distress.

For European deals after the 2007-08 financial crisis, authors have found higher returns to shareholders as compared to acquisitions announced in the pre-crisis period (Rao-Nicholson and Salaber 2014b). However, the above study doesn't look at the banking industry. Beltratti and Paladino (2013) on the other hand investigate the effect of the financial crisis on European banking mergers and acquisitions and they do not find any significant abnormal announcement returns for acquirers. Extant studies related to acquisitions during a crisis are based on the premise that foreign investment typically increases in the crisis region through the purchase of crisis-afflicted businesses by companies from non-crisis countries (Froot and Stein 1991; Krugman 2000; Aguiar and Gopinath 2005; Mody and Negishi 2000). However there is limited understanding on how these stylized facts will hold when there is a global crisis and when most countries are experiencing economic and financial difficulties. Hence, our first question queries how banking acquisitions around the world will perform in face of the global crisis.

Q1. Do banking acquisitions earn abnormal returns for acquirers' shareholders since the financial crisis?

Emerging from this first question, it would be interesting to investigate the difference in abnormal returns between domestic and foreign bank acquisitions – does either of them do better than the other after the crisis?

Similar to general studies on acquisitions, the empirical literature on banking cross-border acquisitions has provided mixed results over the years (Amel et al. 2004; DeYoung, Evanoff, and Molyneux 2009). Studies using data from the 1990s show that European banks acquiring local and foreign banks can achieve significant abnormal returns (Cybo-Ottone and Murgia 2000) or no excess returns on average (Rad and Van Beek 1999). On the other hand, a sample of deals between 1985-2000 shows that European banks buying domestically achieve positive gains, but realize losses while investing abroad (Beitel, Schiereck, and Wahrenburg 2004). Campa and Hernando (2006) examine bidders' returns from acquisitions in 1998-2002 and find no evidence of a positive impact on acquirers' stock price in the cross-border deals, whereas domestic deals generate negative and significant returns to acquirers. Using acquisitions from 1991-2001, authors find that geographic focus brings positive gains to acquirers (Lepetit, Patry, and Rous 2004).

Several studies show that U.S. banks that buy domestically or abroad experience positive returns to their acquisitions (Kiymaz 2004; Desai and Stover 1985; James and Wier 1987; Cornett and De 1991). Other studies find that foreign investments generate no or negative abnormal returns for U.S. banking acquirers (Waheed and Mathur 1995; Houston and

Ryngaert 1994; Cornett and Tehranian 1992; Neely 1987; DeLong 2001). Canadian banks which bought internationally in certain related industries experienced significant gains but this positive outcome is not applicable to every foreign acquisition (Bessler and Murtagh 2002). For example, foreign acquisitions in wealth management and retail banking sectors generated value for shareholders, while cross-border acquisitions in the insurance sector failed to do so. Given the structural and regulatory factors in the Japanese banking sector where large-scale mergers in the late 1990s limited further consolidation of domestic banks (Amel et al. 2004), typically, bidders engaging in cross-border acquisitions derived significant abnormal returns (Higgins and Beckman 2006). A study using data on banks from 30 countries observed that international diversification accrued negative returns to acquirers (Amihud, DeLong, and Saunders 2002).

There are relatively few studies that look at cross-border acquisitions after the recent crisis. Cross-border acquisitions in the banking industry have been motivated by several theoretical and empirical arguments (Buch and Delong 2012). Most relevant in the context of the financial crisis are the information cost and the regulation arguments, both referring to the relative efficiency of the acquirer and the target banks. On one side, large and/or efficient banks can overcome information costs such as geographic distance, linguistic, cultural and legal differences, and succeed in their foreign acquisitions. Focarelli and Pozzolo (2005) find that profit opportunities resulting from the prospect of competing with relatively less efficient banks on the domestic market are a key factor affecting international expansion. Hence we can expect that the financial crisis, by increasing the gap between more efficient and less efficient banks, offered additional opportunities for profitable cross-border acquisitions. On the other side, there is evidence that deregulation has a substantial impact on foreign investments (Buch and DeLong 2004). Ter Wengel (1995) suggests that the presence of an international financial center in the target country makes it more attractive for foreign acquirers. Moreover, foreign banks have often found it easy to target banking systems that have undergone major privatization programs, such as Spanish banks massively entering the Latin American market in the 1990s (Guillén and Tschoegl 2000). Again it is expected that the financial crisis had a significant impact on cross-border acquisition activity, as several banking systems were deregulated in the years leading up to the 2007-08 crisis. Buch and Delong (2012) have speculated that in the post-crisis era deals that were not immediately needed to rescue a failing bank have been dropped and banks focused on domestic consolidation. Yet, weakening banks in various countries, both developed and developing economies, presented opportunities for acquirers to invest in these banks. Beltratti and Paladino (2013) mention that national regulators are unlikely to agree to an acquisition if the acquirer is short of capital. Thus, banks that acquire abroad after the crisis might indicate to markets, at institutional level, political and regulatory patronage, and at firm level, financial slack needed to absorb synergies from cross-border target. Hence, our next question focuses on whether a cross-border effect will be observed in banking acquisitions in the post-crisis world.

Q2. Do cross-border acquisitions generate higher returns for acquirers' shareholders as compared to domestic deals since the crisis?

There are other implications of cross-border acquisitions which we will explore below. For example, there are social costs involved with foreign acquisitions (Neuberger 1998) which are not immediately realized after an acquisition but might become obvious in the long term and greatly impact the local economy. For instance, the change in scope and scale of the acquired banks can impact deposits and small business lending as well as introduce standardized products and risks at individual and system level (Amel et al. 2004; Ashton 2012). This might be especially important in emerging economies (EE) where the trade-offs between social benefits and potential adverse effects are highly relevant to policymakers and governments. Authors have suggested that the presence of foreign-owned banks either through acquisitions or greenfield investments in EE have been instrumental in the structural change of financial systems in these countries (Mathieson and Roldos 2001; Delfino 2007; Tabak, Fazio, and Cajueiro 2013).

Authors have implied that there is a need to conduct research on the business entities from EE (Purkayastha, Manolova, and Edelman 2012). Even though the trend has evolved over the last decade in terms of globalization of financial markets and financial institutions from these EE gaining foothold in the global landscape, there is limited insight into the acquisitions by these EE banks. Till date very few studies have looked at acquisitions of domestic and foreign targets by EE banks (Amihud, DeLong, and Saunders 2002). Though the above study includes few banks from emerging economies, understanding differences between the banks from developing and developed economies was not the focus of their research. These EE are still typically included in international studies as targets for developed-market banks (Amihud, DeLong, and Saunders 2002; Chari, Ouimet, and Tesar 2004). The few studies that exist on EE acquirers have suggested that they might not necessarily create value for their shareholders (Wright et al. 2005; Contractor, Kumar, and Kundu 2007). Moreover, most research on EE diversification is limited to few specific countries such as India, China, Korea, few Latin American countries and some transition economies of Eastern Europe (Purkayastha, Manolova, and Edelman 2012; Chari, Ouimet, and Tesar 2004). One study on the consolidation across domestic banks during the Asian crisis shows that these acquisitions generated negative returns for acquirers' shareholders (Crouzille, Lepetit, and Bautista 2008). Hence, it is pertinent to consider acquisitions by EE banks and query whether they generate value for bidders in the short run.

After the financial crisis, DE banks lost significant market value and large EE banks like those from China and Russia, mostly state-owned, had access to cheap capital at home. Hence, we argue, these EE banks are able to capitalize on potential opportunities for international expansion. Theoretically, as pointed out by Buch and Delong (2012), engagement with developed banks improves the efficiency of the developing economy banks. Similarly, it can be argued that by acquiring banks in developed economies, EE banks can leverage higher levels of development in the financial markets, bank-level efficiency and technology for financial gains. Most of these DE are part of international financial center network, and thus, making them attractive for EE acquirers (Ter Wengel 1995). Also, many developing countries like China undertook deregulation of their banking sector to allow foreign investment by their domestic banks (Economist 2012), and at the same time, many developed and developing countries began to put in place regulations which invited such

investments by EE banks. For example, due to these changes in regulations, the Industrial and Commercial Bank of China was able to acquire Standard Bank subsidiary in the UK. Hence, we ask whether, after the crisis, EE banks generate higher shareholder returns than those garnered by the shareholders of developed-country banks.

Q3. Do cross-border acquisitions by EE banks generate higher returns than DE bank acquisitions since the crisis?

Next we look specifically at cross-border acquisitions. We ask if the characteristics of the target country matter for acquisitions announced after the crisis, especially with respect to characteristics of the acquirer. Extant studies suggest that the incentives for EE firms to expand abroad are fundamentally different from those of developed-economy firms (Luo and Tung 2007; Buckley et al. 2007; Li 2007; Fortanier and Tulder 2009). For instance, Luo and Tung (2007) mention that EE firms that go abroad are driven by asset seeking rather than asset exploiting.

Authors have also argued that geographic diversification is a naturally risk-reducing activity (Berger et al. 2000), yet, cross-border deals can increase the insolvency risk exposure of home and/or host bank regulators (Amihud, DeLong, and Saunders 2002). Authors have argued that by taking its activities into new overseas markets, the acquirer bank is faced with increasing monitoring costs and risks (Amihud, DeLong, and Saunders 2002). This is very much true for acquisitions into EE where problems like the loan customer base and the operating cost structure of the target bank might be hard for acquiring banks to navigate and mitigate successfully (Soussa and Wheeler 2006). EE are characterized by higher environmental volatility than developed economies (Boisot and Child 1988). Also, studies on banking crisis have shown that typically crises in EE are of greater severity than in developed economies (Lindgren, Garcia, and Saal 1996; Sheng 1996, 2009). Thus, the target's home country characteristics influence the returns to bank acquisitions with, generally, acquisitions of EE banks leading to decrease in developed-country acquirer's share price. Specifically, issues such as operational and political risks as well as legal and cultural constraints are very important for stock markets and companies (Soussa and Wheeler 2006; Luo and Peng 1999). On the contrary, other studies have found that developed-market targets generate negative returns whereas EE acquisitions provide positive returns (Waheed and Mathur 1995; Chari, Ouimet, and Tesar 2010).

With the financial crisis, the relative efficiency of acquirer and target banks strongly reflects opportunities for cross-border acquisitions. As the crisis hit more strongly the banking sectors of developed countries, EE-DE acquisitions are justified by several factors. On one side, EE banks are more competitive than domestic banks when targeting developed countries, corresponding to the information cost argument developed above (Focarelli and Pozzolo 2005). On the other side, DE and EE banking systems have been deregulated in the years leading up to the crisis, and several American and European banks have been bailed out as a result; making DE banks more attractive for foreign acquirers, especially large and/or efficient EE banks (Buch and DeLong 2004).

There is very little research on the success of investments from emerging economies into developed countries (Rui and Yip 2008) especially since 2007-08. Few studies that have looked at acquisitions by EE firms suggest that shareholders gain when EE companies target developed markets (Gubbi et al. 2010). EE firms are likely to benefit from legitimacy and brand building in developed economies by acquiring local banks. There are other studies that suggest that though large national companies from EE might have the potential to absorb technology and assets acquired from developed-market firms, they might not create value for their shareholders in the short term (Wright et al. 2005; Contractor, Kumar, and Kundu 2007).

Also, there is still the unaddressed question of whether EE banks can gain from investing in other EE. Extant studies have looked at developed-market banks investing in emerging and developed countries, as well as EE banks targeting developed countries. There is no study which looks specifically at the returns that EE banks can generate by acquiring other EE banks, especially, after the financial crisis. We address these issues via a number of questions. We look at cross-border deals based on the economic development of the acquirer and target countries (emerging-economy to emerging-economy (EE-EE), emerging-economy to developed-economy (EE-DE), developed-economy to emerging-economy (DE-EE), and developed-economy to developed-economy (DE-DE)).

Q4. Do cross-border acquisitions generate different returns since the crisis depending on the acquirer-target's country of origin?

3. Methodology

3.1. Event study

The first step in our analysis is to conduct an event study that is calculating and examining bidder's abnormal returns around the acquisition announcement. Event study methodology is very common in mergers and acquisitions literature (Hosken and Simpson 2001; Diepold et al. 2008; Nicholson and Salaber 2013; Rao-Nicholson and Salaber 2014a) where the acquirer's cumulative abnormal returns (CAR) are calculated as:

$$CAR_i = \sum_{\tau=t}^{T} AR_{i\tau}$$

where $AR_{i\tau}$ is firm i's abnormal return at day τ. The event window [t, T] represents the time window around the acquisition announcement during which stock prices are allowed to react to the announcement. In developed countries where stock markets are efficient, this period is very small and scholars usually calculate CAR over the window [-1; +1]. In emerging countries however it is necessary to increase this window to allow stock prices to fully reflect the news of the announcement. Emerging-market studies calculate event windows up to 11 days before and after the announcement, but because our sample includes both DE and EE companies, we calculate CAR over an [-2; +2] event window.

The expected return for each bidder is estimated according to the traditional market model (MacKinlay 1997):

$$R_{i\tau} = \alpha_i + \beta_i R_{m\tau} + \varepsilon_{i\tau},$$

where, $R_{i\tau}$ is the daily return on the acquirer, $R_{m\tau}$ is the daily return on the acquirer's national market portfolio, and all returns are converted to dollar returns. The estimation period runs from 90 to 30 days before announcement date. The estimated coefficients α_i and β_i are then used to forecast the abnormal returns over each 5-day event window. The difference between the actual return and the expected return from the market model gives the daily abnormal stock return:

$$AR_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau}.$$

In order to answer our different research questions, we calculate CAR for each individual deal and then average them by sub-group (e.g. domestic vs. cross-border deals) and by sub-period (pre- and post-crisis). Post-crisis corresponds to the period starting after the global stock market meltdown, i.e., from April 2009.

3.2. Empirical model

The second step in our analysis is to regress these abnormal returns on several explanatory and control variables. A standard OLS estimation method was used and White heteroskedasticity-consistent standard errors are presented throughout the analysis. In order to answer Q1, we create a dummy for the post-crisis period, i.e., POSTCRISIS = 1 for the period April 2009-December 2012, 0 before. For Q2, we create another dummy, CB, equal to one when the deal occurs between two institutions from different countries, and we calculate the interaction term CB*POSTCRISIS. To test Q3, we interact POSTCRISIS with another dummy variable, EEBID = 1 when the acquirer is located in an emerging economy, 0 otherwise. Finally, we create additional dummies indicating the direction of the transaction: EE-EE and EE-DE for acquisitions from emerging countries to emerging and developed economies respectively, and DE-EE and DE-DE for transactions originating in a developed country and targeting emerging and developed economies respectively. To answer Q4, we interact each of these dummies with POSTCRISIS. Q1 and Q2 are tested over the entire sample of domestic and cross-border deals, whereas Q3 and Q4 are tested over the sample of foreign acquisitions only.

In order to assess the impact of each explanatory variable on CAR, we need to control for relevant deal-specific and bidder-specific characteristics. Deal-specific variables that are likely to impact short-term returns include the size of the transaction, the mode of payment, the percentage acquired in the transaction, the public status of the target and the industry relatedness (Moeller, Schlingemann, and Stulz 2004; Faccio and Masulis 2005; Beitel, Schiereck, and Wahrenburg 2004; Campa and Kedia 2002; Goergen and Renneboog 2004; Ahern, Daminelli, and Fracassi in press). The size of the transaction is measured using the relative size (RELATIVESIZE) which is calculated as the deal value divided by the bidder's market value. CASH is a dummy equal to one if the deal is entirely cash-financed, zero otherwise. PERCACQ is the percentage of shares acquired in the transaction. PRIVATETARGET = 1 if the target is a private company, zero otherwise. SAMEIND is a

dummy representing the industry relatedness of the bidder and the target, i.e., SAMEIND=1 if both belong to the financial sector. Bidder-specific control variables relevant for banking acquisitions are the acquirer's price-to-book ratio (PTB), debt-to-equity ratio (DEBTEQUITYRATIO), total assets (LOGASSETS as we take the logarithm) and return on equity (ROE).

In the cross-border analysis, we also include several country-level variables to control for the economic, fiscal and financial development of the bidder and target countries (Gubbi et al. 2010; Meyer et al. 2009). For the acquirer country, we use MARKETCAP/GDP(A) which measures the level of development of the national stock market; BANKCAP/ASSET(A) measuring the strength of the banking system and ATTGLOB(A) which represents the attitude of society toward globalization. For the target, we control for the level of fiscal freedom (FISCFREEDOM), investment freedom (INVFREEDOM), corruption index (CORRUPTINDEX) in the country, the number of commercial bank branches (LOGBRANCH as we take the logarithm), inflation rates (INFLATION) and GDP growth rate (GDPGROWTH).

4. Data

4.1. Data Selection

Our data includes all banking acquisitions around the world (both domestic and cross-border) that were announced between January 2004 and December 2012. All deal information was collected from Thomson One; this includes the deal value, the percentage acquired, the country and industry of each acquirer and target, the public status of the acquirer and the target, and the mode of payment. To be included in the sample, each deal has to meet the following criteria: the acquirer is a publicly traded financial institution; the deal value is available and greater than $1 million; and the transaction is a majority stake acquisition. Daily financial data, including acquirer's stock returns, market capitalization, price-to-book ratio, as well as market returns[i], were collected from Thomson DataStream. We also obtained from DataStream several acquirers' accounting variables such as total assets, debt-to-equity ratio, and return on equity (ROE). The market capitalization-to-GDP ratio, bank capital-to-assets ratio, number of commercial bank branches (per 100,000 adults) and GDP growth rates were collected from the World Bank. The indices of fiscal freedom and investment freedom were downloaded from the Heritage Foundation. The corruption index was obtained from Euromonitor International. The index of attitude toward globalization is from the IMD WCY executive survey, and inflation rates are from the IMF. Table 1 provides the definition and source of all variables used in this paper.

[Table 1 about here]

After merging all the data, our final sample consists of 883 acquisitions from 75 countries, including 151 deals (17%) initiated from EE banks. Overall, domestic acquisitions represent 83% of the sample, and two third of them occurred within the U.S. The exact

distribution of deals per country is presented in Table 2. Panels A, B, C and D show DE-DE, EE-EE, DE-EE and EE-DE acquisitions respectively.

[Table 2 about here]

4.2. Data Description

Table 3 presents descriptive statistics for our sample of deals. Panel A reports, by sub-period, the average, median and standard deviation for our key variables. The average CAR went from negative in the pre-crisis and crisis periods to positive after the crisis. The average and median deal value was highest during the 2007-08 crisis and was very low in the post-crisis period. However the relative size of the average transaction doubled after the crisis, suggesting that smaller banks were acquiring relatively larger targets. Finally, the return on equity decreased for acquisitions announced after the crisis. Panel B shows the total deal value (in $ million) and total number of deals by sub-group and sub-period. Overall, the number of deals has largely decreased across the globe since the financial crisis. Only the number of acquisitions from EE to DE has had a small drop, although this number is very small (8 before and 6 after the crisis). In the pre-crisis period, acquisitions from EE banks represented 2% of the domestic sample and cross-border sample in terms of total deal value. After the crisis, these figures jumped to 20% and 5% respectively. As a matter of fact, the total deal value of EE-EE transactions has significantly increased in the domestic (+41%) and experienced the small drop among all cross-border (-19%) samples. The figure for EE-EE domestic transactions go against the general trend of a global downward shift in acquisition activity since 2007-08.

[Table 3 about here]

Table 4 provides the correlation coefficients – and statistical significance – among all our variables. Panel A shows coefficients across the entire sample of domestic and cross-border deals, whereas Panel B reports correlation coefficients for the cross-border sample only, hence including all relevant country-level variables. In both panels, CAR is negatively correlated with the size of the bank (LOGASSETS). In Panel A, LOGASSETS is positively and significantly correlated with CB (0.52). Similarly, LOGBRANCH in Panel B is significantly correlated with DE-DE and INFLATION, and we address this issue in section 5. Similarly, CORRUPTINDEX is highly correlated with EE-EE (negatively), DE-DE (positively) and INVFREEDOM (positively) variables. We account for these significant correlations in the robustness section.

[Table 4 about here]

5. Results

Table 5 shows the number of deals and average CAR by year from 2004 to 2012. The CAR becomes positive (significant at the 10% level) in 2009. This is consistent with the idea that banks can earn positive abnormal returns in their post-crisis acquisitions. However the significance disappears after 2009 and more analysis is needed to fully understand the returns derived by acquiring banks after the financial crisis.

[Table 5 about here]

Results for the event study are presented in Table 6. CAR[-2;+2] are averaged for different sub-periods and for various categories of deals, depending on which question we are trying to answer. For each question, we performed Student tests to compare the statistical difference between average CARs.

Panel A shows evidence for Q1, as banking acquisitions in general performed better after the crisis than before, even though the difference in CAR between the two periods is not statistically significant. Panel B seeks to answer Q2 by comparing abnormal returns of domestic and cross-border deals in the post-crisis period. Both domestic and cross-border acquisitions perform better after the crisis than before, and the difference in CARs between domestic and cross-border deals in the post-crisis period is not statistically significant. In Panel C, we compare the CARs between EE acquirers and DE acquirers in the post-crisis period to answer Q3. Again the difference is not statistically significant, although EE banks earn positive abnormal returns after the crisis. Panels D and E allow us to investigate Q4. On one side, previous result that EE banks performed better after the crisis is driven by their acquisitions into DE. On the other side, the negative abnormal return for DE acquirers in period 1 is driven by DE-DE transactions. Overall, banks earn more for their shareholders when targeting countries with different economic development, and all returns increase (although not significantly) in the post-crisis period.

[Table 6 about here]

Previous results are preliminary as based on univariate analysis. In order to truly compare the performance of different types of deals before and after the crisis, we need to control for other potential factors affecting the short-term performance of acquisitions. The results of such cross-sectional analysis are presented in Tables 7 and 8. In Table 7, we control for firm-specific and deal-specific characteristics across the entire sample of domestic and cross-border deals, which allows us to investigate Q1 and Q2. Estimates for our explanatory variables are consistent with the univariate analysis presented above. First, banking acquisitions on average perform better after the crisis than before. In model (2), POSTCRISIS is significant at 1% level. Second, overall cross-border deals do not offer any abnormal return relative to domestic deals in the post-crisis period. We also observe that CASH is positive and significant at 10% level. This is in line with literature that indicates that cash-financed deals can improve profitability (Ghosh 2001; Linn and Switzer 2001). RELATIVESIZE is positive and significant at 1% level. Martynova et al. (2007) suggest that acquisitions of relatively large targets are likely to bring operating and financial advantages. Also, this result is consistent with more information and fewer adverse selection problems (Conn et al. 2005; Goldberg and Johnson 1990). PTB is positive and significant at 1% level. Thus, bidders earning a very high return on their assets indicate the acquirer's growth opportunities (Lang, Stulz, and Walkling 1991; Moeller and Schlingemann 2004) and play an important role in explaining the cross-section of acquirer returns.

[Table 7 about here]

In Table 8, we examine Q3 and Q4 by focusing on cross-border deals only and controlling for additional, country-level, variables. We find no evidence for EE bidders' superior performance in the post-crisis period (Q3). Turning to Q4, estimates are again consistent with the event study. Looking at EE banks, they generate extra returns in their post-crisis acquisitions into developed countries. Post-crisis EE-DE abnormal returns are significantly positive at the 5% level. Turning now to DE acquirers, we do not find any significant difference of CAR between the two periods, for both DE-DE and DE-EE. With the introduction of additional control variables, deal-specific and bidder-specific variables have a lower impact on CAR (as compared to Table 6), and other country-level variables help explain the cross-sectional difference in CARs. CORRUPTINDEX is negative and significant in models (1)-(3). Since the corruption index is higher for non/less corrupt countries, the significant coefficients mean that acquirer's shareholders react negatively to acquisitions targeting less corrupt nations. INFLATION is negative and significant in all models. Authors have observed that inflation can affect the flexibility of loan rates and liquidity in the financial markets (Cottarelli and Kourelis 1994). Thus, when acquirers buy firms in high inflation countries, the market might react to this by undervaluing such acquisitions.

[Table 8 about here]

Overall, we find evidence that the financial crisis had an impact on the performance of acquisitions in the banking sector, but it impacted differently cross-border deals from EE and DE acquirers. Our results are summarized in Table 9. First, the crisis had a positive impact, on average, on the short-term performance of bank acquisitions. Second, looking at the economic development of the acquirer, EE banks and DE banks reacted differently to the crisis: DE acquirers earned negative returns after the crisis whereas EE bidders earned positive and significant returns in the post-crisis period. Third, looking at the economic development of the target, we are able to highlight further differences in CAR: EE bidders outperformed in their EE-DE acquisitions in the post-crisis period.

[Table 9 about here]

5.1. Robustness Checks

In this section we perform a series of robustness checks to validate our findings. First, we drop from our regressions the crisis period data, which corresponds to stock market crashes around the world (i.e., we deleted 111 deals between October 2007 and March 2009). This analysis generates results which are similar to those reported above. Second, in Table 7, we drop LOGASSETS as it is correlated with CB. We observe that CB*POSTCRISIS is still insignificant. Also, in Table 8, we drop LOGBRANCH as it is correlated with DE-DE. Again we find that DE-DE*POSTCRISIS is still insignificant. Similarly, we remove other correlated variables from our analysis and observe that our results are not significantly different from those that are presented. Third, other measures of country differences were used in Table 8 instead of GDP growth rate. We replaced the variable GDPGROWTH(T) with GDPPERCAPITA(T) and GNIPERCAPITA(T) which indicate the per capita GDP and GNI in the target country. Again these modifications do not alter our results. Finally, we tried different definitions of CAR by changing the length of the event window, the estimation

model, as well as the market index used to calculated abnormal returns. On one side, we allowed the event window to vary from [-1; +1] to [-7;+7] to account for different levels of market efficiency across different markets. On the other side, we calculated abnormal returns in excess of the local stock market index instead of the MSCI country index (although some countries don't have a local market index). Moreover, instead of using the market model to compute abnormal returns, we estimated the modified market model used in several event studies (Nicholson and Salaber 2013; Rao-Nicholson and Salaber 2014b; Bouwman, Fuller, and Nain 2009; Brown and Warner 1985), where abnormal returns at day τ are equal to the difference between bidder returns and market returns: $AR_{i\tau} = R_{i\tau} - R_{m\tau}$. Overall, our results are consistent, and sometimes stronger, under different specifications of CAR.

6. Conclusions

In this paper we look at shareholder returns to bank acquisitions before and after the financial crisis of 2007-08. Using a worldwide sample of 883 deals from 2004-2012 and standard event study method, we investigate the impact of the crisis on the performance of different bank acquisitions. Based on existing, and mostly conflicting, evidence, we pose several interesting questions with regard to the nature of the transactions (domestic vs. cross-border) and the level of economic development of the acquirer and target countries.

We focus on the banking sector as it provides an interesting avenue for research – it is the industry which forms the locus of the 2007-08 crisis; and hence, it will be fascinating to observe how the wealth of shareholders changes under developing economic downturn. During the global financial upheaval, two trends were observed in the banking industry, one, domestically, banks consolidated their position through acquisitions, and two, in terms of cross-border acquisitions, banks from emerging economies acquired larger banks in developed markets. The domestic deals were mediated and encouraged in several developed economies due to what Molyneux et al. (2014) identify as 'too-big-to-fail' and 'too-systemically-important-to-fail' issues. Unlike previous financial crises which originated from developing countries, the recent financial crisis was created due to imbalances in the developed-economy banking industry. Hence, during the years after the crisis, we observe a reversal of previous trends and the global acquisitions was driven by emerging-economy banks like those from China, Russia, Brazil, Malaysia and Qatar. In this study, we consider bidder banks around the world, thus, examining if the abnormal returns are localized with developing country shareholders or if we can generalize our results to banks around the world.

Our results provide new insights into the performance of bank acquisitions as we investigate the impact of the financial crisis at the global level. First, domestic acquisitions, especially in developed countries, seem to perform better after the crisis than before. Second, among cross-border deals, we observe that only a very small number derive value for the acquirer's shareholders since the crisis. Companies from emerging economies that buy in developed countries generate positive and significant returns for their shareholders. Most of the other transactions undertaken in the post-crisis period do not provide abnormal returns to investors. Thus, this study provides evidence to the futility of acquisitions and adds another chapter in the discourse on whether acquisitions are necessary evils and whether companies

need to engage in the acquisition strategy more cautiously. Avenues for future research would be, for example, to investigate the performance of post-crisis bank acquisitions based on their investment strategy, i.e., was the acquisition driven by an undervaluation of the (crisis-afflicted) target, an overvaluation of the acquirer, or a traditional product/market expansion strategy?

Endnotes

[i] For homogeneity, we collected MSCI indices for each relevant country. As a robustness check, we also calculated abnormal returns using local indices, e.g. DAX30 for Germany, CAC40 for France, NIKKEI for Japan, FTSE100 for UK, etc. See section 5.1 for details.

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Table 1: Definition and source of variables

Variable name	Definition	Source
POSTCRISIS	Dummy = 1 if announcement date after March 2009	Authors' calculation
CB	Dummy = 1 if cross-border deal	Authors' calculation
EEBID	Dummy = 1 if bidder located in emerging economy	Khanna and Palepu (2010)
EE-EE	Dummy = 1 if bidder and target located in emerging economies	Khanna and Palepu (2010)
EE-DE	Dummy = 1 if bidder located in emerging economy and target located in developed economy	Khanna and Palepu (2010)
DE-DE	Dummy = 1 if bidder and target located in developed economies	Khanna and Palepu (2010)
DE-EE	Dummy = 1 if bidder located in developed economy and target located in emerging economy	Khanna and Palepu (2010)
CASH	Dummy = 1 if cash-financed deal	Thomson One
DEALVALUE	Value of the transaction in $million	Thomson One
PERCACQ	Percentage of shares acquired in the transaction	Thomson One
SAMEIND	Dummy = 1 if target same industry as bidder	Thomson One
PRIVATETARGET	Dummy = 1 if private target	Thomson One
RELATIVESIZE	Deal value divided by bidder's market value	Authors' calculation
DEBTEQUITYRATIO	Bidder's debt-to-equity ratio	Thomson DataStream
PTB	Bidder's price-to-book ratio	Thomson DataStream
LOGASSETS	Log of bidder's total assets in $million	Thomson DataStream
ROE	Bidder's return on equity	Thomson DataStream
MARKETCAP/GDP(A)	Bidder country's market capitalisation to GDP ratio	World Bank
BANKCAP/ASSET(A)	Bidder country's bank capital-to-assets ratio	World Bank
ATTGLOB(A)	Bidder country's index of attitude toward globalization	IMD WCY executive survey
FISCFREEDOM(T)	Target country's index of fiscal freedom	Heritage Foundation
INVFREEDOM(T)	Target country's index of investment freedom	Heritage Foundation
CORRUPTINDEX(T)	Target country's index of corruption	Euromonitor International
LOGBRANCH(T)	Log of number of commercial bank branches (per 100,000 adults) in the target country	World Bank
INFLATION(T)	Target country's inflation rate	IMF
GDPGROWTH(T)	Target country's GDP growth	World Bank

Table 2: Number of deals by acquirer and target country

Panel A: DE-DE

Acquirer's country (DE)		Target's country (DE)																							
		AT	AU	CA	CH	DE	DK	ES	FI	FR	GB	GG	GR	IL	IM	IT	JP	LU	MC	NO	PR	PT	SE	SG	US	Total
AT	Austria	1																							1
AU	Australia		18																						18
BE	Belgium										1														1
CA	Canada			9							1													5	15
CH	Switzerland				2													1	1					4	8
DE	Germany					6																		1	7
DK	Denmark						8		1		1														10
ES	Spain							12			2					1								6	21
FI	Finland								1														1		2
FR	France						1			2						2						1			6
GB	United Kingdom										5													2	3	10
GG	Guernsey																									0
GR	Greece												5													5
IE	Ireland					1									1										1	3
IL	Israel				1									2												3
IM	Isle of Man																									0
IS	Iceland						1				2	1								1			1			6
IT	Italy					1										24										25
JP	Japan																35								1	36
LI	Liechtenstein				1																					1
LU	Luxembourg																									0
MC	Monaco																									0
NL	Netherlands										1					1										2
NO	Norway																			5			1			6
PR	Puerto Rico																				1				1	2
PT	Portugal																					2				2
SE	Sweden						3	1												1			5			10
SG	Singapore																							2		2
US	United States					1					1														483	485
Total		1	18	9	4	9	13	13	2	2	14	1	5	2	1	28	35	1	1	7	1	3	8	4	505	687

Panel B: EE-EE

		Target's country (EE)																																					
		AE	AR	BA	BH	BR	BY	CD	CL	CN	CO	CZ	EG	HK	HR	ID	IN	IQ	KR	KW	KZ	LT	MA	MK	MO	MX	MY	OM	PE	PH	PK	PL	RO	RU	SA	SV	TH	TR	TW	UA	VE	ZA	Total
AE	Utd Arab Emirates	3											2																						1								6
AL	Albania																																										0
AR	Argentina		4																																								4
BA	Bosnia																																										0
BB	Barbados																																										0
BG	Bulgaria																							1																			1
BH	Bahrain				1								1																														2
BR	Brazil					3																																					3
BY	Belarus																																										0
CD	Dem Rep Congo																																										0
CL	Chile								1																																		1
CN	China									3				1											1																		5
CO	Colombia										2																										1						3
CZ	Czech Republic											2																															2
EE	Estonia																																										0
EG	Egypt																																										0
HK	Hong Kong									1				6																													7
HR	Croatia			1																																							1
HU	Hungary														1																			1	1								3
ID	Indonesia															8																											8
IN	India															2	5				1																						8
IQ	Iraq																																										0
KR	South Korea																		11																								11
KW	Kuwait												1					1		2																				1			5
KZ	Kazakhstan																																										0
LB	Lebanon																																										0
LT	Lithuania																					2																					2
MA	Morocco							1															1																				2
MK	Macedonia																																										0
MO	Macau																																										0
MX	Mexico																									2																	2
MY	Malaysia															1											5													1			7
OM	Oman																											1															1
PA	Panama																																										0

Acquirer's country (EE)

PE	Peru										1																		3														4
PH	Philippines																													7													7
PK	Pakistan																														2												2
PL	Poland																															2								1			3
QA	Qatar												1																														1
RO	Romania																																										0
RS	Serbia & Mont.																																										0
RU	Russian Fed						1														1													5						1			8
SA	Saudi Arabia																																										0
SV	El Salvador																																										0
TH	Thailand																																			16							16
TR	Turkey																																	1				3					4
TT	Trinidad & Tob.																																										0
TW	Taiwan																																						5				5
UA	Ukraine																																										0
VE	Venezuela																																								1		1
ZA	South Africa					1																																				1	2
	Total	3	4	1	1	4	1	1	1	4	3	2	5	7	1	11	5	1	11	2	2	2	1	1	1	2	5	1	3	7	2	2	1	7	1	1	16	4	6	2	1	1	137

Panel C: DE-EE

Acquirer's country (DE)		Target's country (EE)																								
			AL	AR	BA	BB	BG	BR	CO	CZ	EE	HK	ID	IN	LT	MX	PA	PK	PL	RO	RS	RU	TR	TT	UA	ZA	Total
	AT	Austria								1									1	1		2			2		7
	AU	Australia											1														1
	CA	Canada				1																		1			2
	CH	Switzerland						2																			2
	CY	Cyprus																				1			2		3
	DE	Germany																				1					1
	ES	Spain						1	1							1											3
	FR	France																			1	1					2
	GB	United Kingdom		1								1		1			1					1				1	6
	GR	Greece					2														1		2		1		6
	IE	Ireland									1																1
	IL	Israel																		1			1				2
	IT	Italy	1		1																				1		3
	NL	Netherlands																1									1
	NO	Norway																				1					1
	SE	Sweden													1				1			1			1		4
	Total		1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	1	2	2	2	8	3	1	7	1	45

Panel D: EE-DE			Target's country (DE)								
			AT	AU	CA	FR	GB	SE	SG	US	Total
Acquirer's country (EE)	BH	Bahrain					1				1
	BR	Brazil								1	1
	CN	China			1				1		2
	KW	Kuwait						1			1
	LB	Lebanon		1							1
	MX	Mexico								1	1
	MY	Malaysia							1		1
	QA	Qatar				2	1				3
	RU	Russian Fed	1								1
	TR	Turkey					1				1
	TW	Taiwan								1	1
	Total		1	1	1	2	3	1	2	3	14

Table 3: Descriptive statistics

Panel A

	Full period *(n= 883)*			Pre-crisis *(n=504)*			Crisis *(n=111)*			Post-crisis *(n=268)*		
	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.	Mean	Median	S.D.
CAR[-2;+2](%)	0.0037	-0.4	6.65	-0.2392	-0.41	4.84	-0.2570	-0.53	7.12	0.5685	-0.255	8.98
CB	0.1676	0	0.37	0.1587	0	0.36	0.2072	0	0.41	0.1679	0	0.37
EEBID	0.1710	0	0.37	0.1269	0	0.33	0.1531	0	0.36	0.2611	0	0.44
CASH	0.2525	0	0.43	0.2380	0	0.43	0.2882	0	0.45	0.2649	0	0.44
DEALVALUE	706.10	70	3466.76	782.5794	65	3733.74	1256.216	90	5502.64	334.4403	70	829.59
PERCACQ(%)	93.3601	100	16.48	94.5436	100	14.67	94.2162	100	14.37	90.7798	100	19.92
SAMEIND	0.8878	1	0.32	1	1	0	1	1	0	0.6305	1	0.48
PRIVATETARGET	0.3318	0	0.47	0.3869	0	0.49	0.2342	0	0.43	0.2686	0	0.44
RELATIVESIZE	0.2391	0.0684	1.57	0.1910	0.0740	0.53	0.1784	0.0624	0.2392	0.3567	0.0578	2.76
DEBTEQUITYRATIO	3.1744	1.6335	7.03	3.1186	1.7361	4.48	3.7754	2.0037	4.7698	3.0303	1.2909	10.77
PTB	1.6307	1.53	0.77	1.8787	1.745	0.65	1.4988	1.31	0.7420	1.2090	1.06	0.81
LOGASSETS	16.3909	16.02	2.36	16.0548	15.6387	2.32	16.9438	17.0969	2.61	16.8034	16.4856	2.23
ROE(%)	10.4563	11.59	18.81	11.8188	12.745	19.22	12.7063	12.265	7.0880	6.9232	7.77	20.82

Panel B

	Full period				Period 1								Period 2				Growth rate Period 1 vs Period 2	
					Pre-crisis				Crisis				Post-crisis					
	Deal value	%	Nb deals	%	Deal value	%	Nb deals	%	Deal value	%	Nb deals	%	Deal value	%	Nb deals	%	Deal value	Nb deals
Domestic	491857	79%	735	83%	304054	77%	424	84%	118664	85%	88	79%	69139	77%	223	83%	-84%	-56%
DEBID																		
DE-DE	460603	74%	628	71%	295263	75%	380	75%	114501	82%	76	68%	50838	57%	172	64%	-88%	-62%
EEBID																		
EE-EE	31255	5%	107	12%	8791	2%	44	9%	4163	3%	12	11%	18301	20%	51	19%	41%	-9%
CB	131706	21%	148	17%	90429	23%	80	16%	20748	15%	23	21%	20529	23%	45	17%	-82%	-56%
DEBID	118836	19%	104	12%	84317	21%	60	12%	18870	14%	18	16%	15649	17%	26	10%	-85%	-67%
DE-DE	90153	10%	59	7%	63103	16%	30	6%	13785	10%	9	8%	13265	15%	20	7%	-83%	-49%
DE-EE	28683	5%	45	5%	21214	5%	30	6%	5085	4%	9	8%	2384	3%	6	2%	-91%	-85%
EEBID	12870	2%	44	5%	6112	2%	20	4%	1879	1%	5	5%	4880	5%	19	7%	-39%	-24%
EE-DE	4347	1%	14	2%	1787	0.5%	6	1%	1506	1%	2	2%	1055	1%	6	2%	-68%	-25%
EE-EE	8523	1%	30	3%	4325	1%	14	3%	373	0.3%	3	3%	3825	4%	13	5%	-19%	-24%
Total	623563	100%	883	100%	394483	100%	504	100%	139413	100%	111	100%	89668	100%	268	100%	-83%	-56%

Table 4: Pearson correlation coefficients

Panel A: Total sample

n=883	CAR[-2;+2]	1	2	3	4	5	6	7	8	9	10	11
1 POSTCRISIS	0.0561 *											
2 CB	-0.0217	-0.031										
3 EEBID	0.0101	0.170 ***	0.126 ***									
4 CASH	0.0410	0.024	0.090 ***	0.027								
5 PERCACQ	-0.0154	-0.069 **	-0.177 ***	-0.273 ***	-0.022							
6 SAMEIND	-0.0292	-0.538 ***	0.065 **	-0.007	0.003	-0.031						
7 PRIVATETARGET	0.0200	-0.096 ***	-0.050 *	-0.067 **	0.025	0.041	-0.009					
8 RELATIVESIZE	-0.0058	0.050 *	-0.063 **	-0.018	0.018	0.024	0.004	0.013				
9 DEBTEQUITYRATIO	0.0111	-0.054 *	0.256 ***	-0.113 ***	0.0004	-0.086 ***	0.112 ***	-0.027	-0.016			
10 PTB	0.0807 **	-0.352 ***	0.167 ***	0.047	-0.020	0.041	0.244 ***	0.089 ***	-0.097 ***	0.015		
11 LOGASSETS	-0.0561 *	0.065 **	0.519 ***	0.043	0.065 **	-0.244 ***	0.069 **	-0.220 ***	-0.239 ***	0.326 ***	0.057 *	
12 ROE	-0.1380 ***	-0.141 ***	0.116 ***	0.078 **	-0.020	0.002	0.060 **	0.049	-0.076 **	-0.020	0.020	0.101 ***

*** p<0.01, ** p<0.05, * p<0.1

Panel B: Cross-border sample

n=148	CAR[-2;+2]	1	2	3	4	5	6	7	8	9	10
1 POSTCRISIS	0.1176										
2 EE-EE	-0.0209	0.1603 **									
3 EE-DE	0.2027 *	0.1627 **	-0.1272 *								
4 DE-DE	-0.1428 *	0.0281	-0.3825 ***	-0.2471 ***							
5 DE-EE	0.0414	-0.2470 ***	-0.3138 ***	-0.203 ***	-0.6094 ***						
6 CASH	0.0375	-0.0567	0.0524	0.003	-0.0770	0.0381					
7 PERCACQ	-0.0374	0.0988	-0.1083 *	0.046	0.2185 ***	-0.1697 ***	0.0696				
8 SAMEIND	-0.0537	-0.4465 ***	-0.1183 *	-0.122 *	-0.0213	0.1838 ***	0.1083 *	-0.0525			
9 PRIVATETARGET	0.0621	-0.107	0.025	-0.003	-0.1810 ***	0.172 ***	-0.061	-0.081	0.048		
10 RELATIVESIZE	-0.0130	0.032	-0.024	0.094	0.0556	-0.093	0.006	0.052	0.040	-0.088	
11 DEBTEQUITYRATIO	-0.0315	-0.242 ***	-0.360 ***	-0.237 ***	0.3534 ***	0.045	-0.043	0.078	0.173 ***	-0.050	-0.031
12 PTB	0.0915	-0.314 ***	0.127 *	-0.059	-0.0976	0.035	0.025	0.038	0.161 **	0.060	0.127 *
13 LOGASSETS	-0.1374 *	0.060	-0.388 ***	-0.164 **	0.2584 ***	0.122 *	0.091	0.098	0.074	-0.124 *	-0.259 ***
14 ROE	0.0021	-0.242 ***	0.082	0.015	-0.0828	0.014	0.054	0.014	0.015	0.083	-0.329 ***
15 MARKETCAP/GDP(A)	-0.0427	-0.031	-0.189 ***	-0.110	0.2916 ***	-0.106	0.020	0.091	0.017	-0.117 *	-0.131 *
16 BANKCAP/ASSET(A)	0.1239	0.212 ***	0.368 ***	0.289 ***	-0.2330 ***	-0.144 **	-0.090	-0.049	-0.194 ***	0.030	0.074
17 ATTGLOB(A)	0.0853	0.168 **	0.017	0.088	0.1167 *	-0.177 **	0.024	0.182 ***	-0.162 **	-0.065	0.016
18 FISCFREEDOM(T)	0.0081	0.183 **	0.386 ***	-0.049	-0.4959 ***	0.334 ***	0.135 *	-0.150 *	-0.115	0.035	-0.092
19 INVFREEDOM(T)	0.0319	0.139 *	-0.421 ***	0.165 **	0.5106 ***	-0.415 ***	0.057	0.273 ***	-0.017	-0.101	-0.007
20 CORRUPTINDEX(T)	-0.0117	-0.0052	-0.5100 ***	0.2470 ***	0.5880 ***	-0.5040 ***	0.0476	0.2280 ***	0.0344	-0.0671	0.0915
21 LOGBRANCH(T)	0.0244	0.0924	-0.3217 ***	0.0114	0.4459 ***	-0.2855 ***	-0.0921	0.1146	0.0027	-0.0906	-0.0191
22 INFLATION(T)	-0.0371	-0.1591 **	0.3350 ***	-0.1541 **	-0.5677 ***	0.4742 ***	0.0671	-0.1135	0.1094	0.2441 ***	-0.0516
23 GDPGROWTH(T)	-0.007	-0.052	0.1909	-0.1117	-0.4465 ***	0.4368 ***	0.0017	-0.1305 *	0.0518	0.1007	-0.1296 *

*** p<0.01, ** p<0.05, * p<0.1

Panel B (continued)

n=148	11	12	13	14	15	16	17	18	19	20	21	22
11 DEBTEQUITYRATIO												
12 PTB	0.057											
13 LOGASSETS	0.351 ***	-0.228 ***										
14 ROE	-0.109 *	-0.351 ***	-0.060									
15 MARKETCAP/GDP(A)	0.270 ***	0.268 ***	0.184 ***	0.107								
16 BANKCAP/ASSET(A)	-0.424 ***	0.068	-0.418 ***	0.111	-0.133 *							
17 ATTGLOB(A)	0.063	0.016	-0.176 **	0.022	0.324 ***	0.179 **						
18 FISCFREEDOM(T)	-0.210 ***	0.066	-0.046	-0.011	0.009	0.087	0.008					
19 INVFREEDOM(T)	0.147 *	-0.091	0.196 **	0.020	0.084	0.056	0.042	-0.253 ***				
20 CORRUPTINDEX(T)	0.1561 *	-0.0179	0.0198	0.0082	0.0352	0.0166	0.2016 **	-0.4257 ***	0.7505 ***			
21 LOGBRANCH(T)	0.1554 **	-0.2503 ***	0.2490 ***	-0.2225 ***	0.0901 **	-0.2125 **	-0.1702 **	-0.2251 ***	0.2439 ***	-0.0402 ***		
22 INFLATION(T)	-0.1962 ***	0.1723 **	-0.2035 ***	0.1961 ***	-0.2391 **	0.0133	-0.1478 *	0.4460 ***	-0.5608 ***	-0.6935 ***	-0.4608 ***	
23 GDPGROWTH(T)	-0.1428 **	0.3232 ***	-0.2480 ***	0.1983 ***	0.0042	0.0870	0.0116	0.3389 ***	-0.3937	-0.3937 ***	-0.4036 ***	0.3767 ***

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Cumulative abnormal returns by year

Year	Nb deals	CAR[-2;+2]
2004	140	-0.24%
2005	126	-0.30%
2006	147	-0.37%
2007	115	0.18%
2008	77	-0.98%
2009	58	**2.23%** *
2010	69	-0.81%
2011	77	1.25%
2012	74	0.20%

* p<0.1

Table 6: Event study analysis

	Full period	Period 1 (pre-crisis + crisis)	Period 2 (post-crisis)	Difference (2-1)
Panel A: All deals				
	0.00%	-0.24%	0.57%	0.81%
	(883)	(615)	*(268)*	
Panel B: Domestic vs. cross-border				
Domestic	0.07%	-0.18%	0.65%	0.83%
	(735)	(512)	(223)	
Cross-border	-0.32%	**-0.53%** **	0.17%	0.71%
	(148)	(103)	(45)	
Difference	-0.39%	-0.35%	-0.47%	
Panel C: DE vs. EE bidder (cross-border deals)				
DE bidder	**-0.52% ** **	**-0.56% ** **	-0.38%	0.18%
	(104)	(78)	(26)	
EE bidder	0.16%	-0.44%	**0.93% **	1.37%
	(44)	(25)	(19)	
Difference	0.67%	0.12%	1.32%	
Panel D: DE bidders (cross-border deals)				
DE-DE	**-0.80% ** **	**-0.93% ** **	-0.56%	0.37%
	(59)	*(39)*	(20)	
DE-EE	-0.14%	-0.20%	0.21%	0.40%
	(45)	*(39)*	(6)	
Difference	0.66%	0.73%	0.76%	
Panel E: EE bidders (cross-border deals)				
EE-DE	1.41%	0.50%	**2.63%** **	2.14%
	(14)	*(8)*	(6)	
EE-EE	-0.43%	-0.88%	0.15%	1.03%
	(30)	*(17)*	(13)	
Difference	-1.84%	-1.37%	**-2.48%** **	

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Regression estimates on the total sample (Q1-Q2)

	(1)	(2)	(3)	(4)
POSTCRISIS	0.00811*	0.0166***		0.0170***
	(0.00487)	(0.00621)		(0.0065)
CB			-0.00195	
			(0.00700)	
CB*POSTCRISIS				-0.0022
				(0.0112)
CASH		0.00957*	0.00979*	0.0095*
		(0.00522)	(0.00526)	(0.0052)
PERCACQ		-0.0102	-0.0137	-0.0101
		(0.0142)	(0.0143)	(0.0143)
SAMEIND		-0.000915	-0.0128*	-0.0007
		(0.00869)	(0.00751)	(0.0087)
PRIVATETARGET		0.00291	0.00195	0.0029
		(0.00496)	(0.00497)	(0.0049)
RELATIVESIZE		0.0161***	0.0158***	0.016***
		(0.00522)	(0.00524)	(0.0052)
DEBTEQUITYRATIO		0.000254	0.000253	0.0002
		(0.000336)	(0.000338)	(0.0003)
PTB		0.0118***	0.00967***	0.0117***
		(0.00315)	(0.00309)	(0.0031)
LOGASSETS		-0.00188*	-0.00138	-0.0018
		(0.00109)	(0.00119)	(0.0011)
Constant	-0.00242	0.00977	0.0245	0.0087
	(0.00268)	(0.0268)	(0.0271)	(0.0011)
Observations	883	863	863	863
R-squared	0.003	0.036	0.028	0.0363
Adj. R-squared	0.0020	0.0261	0.0180	0.0250

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Regression estimates on the cross-border sample (Q3-Q4)

	(1)	(2)	(3)	(4)	(5)
POSTCRISIS	0.0153				
	-0.0123				
EEBID*POSTCRISIS	0.0173				
	-0.0363				
EE-EE		-0.0294			
		-0.0218			
EE-EE*POSTCRISIS		-0.0148			
		-0.0322			
EE-DE			0.0292		
			-0.0234		
EE-DE*POSTCRISIS			0.0610**		
			-0.0279		
DE-EE				0.0138	
				-0.0124	
DE-EE*POSTCRISIS				0.0209	
				-0.0226	
DE-DE					-0.0335**
					-0.0138
DE-DE*POSTCRISIS					0.0078
					-0.0147
CASH	0.0060	0.0105	0.0074	0.0073	0.0059
	-0.0092	-0.0090	-0.0087	-0.0086	-0.0086
PERCACQ	-0.0278	-0.0222	-0.0062	-0.0213	-0.0188
	-0.0207	-0.0197	-0.0217	-0.0210	-0.0230
SAMEIND	0.0791*	0.0000	0.0314	0.0279	0.0354
	-0.0414	-0.0299	-0.0197	-0.0212	-0.0212
PRIVATETARGET	0.0066	0.0021	0.0056	0.0016	0.0069
	-0.0084	-0.0082	-0.0075	-0.0082	-0.0078
RELATIVESIZE	-0.0214	-0.0403*	-0.0181	-0.0475*	-0.0225
	-0.0282	-0.0222	-0.0251	-0.0248	-0.0285
DEBTEQUITYRATIO	-0.0008	-0.00174*	-0.0009	-0.00176*	-0.0010
	-0.0010	-0.0010	-0.0010	-0.0010	-0.0009
PTB	0.0177**	0.0107	0.0076	0.0146*	0.0117*
	-0.0078	-0.0065	-0.0063	-0.0075	-0.0067
LOGASSETS	-0.0012	-0.0017	-0.0026	-0.0008	-0.0012
	-0.0030	-0.0033	-0.0031	-0.0030	-0.0029
MARKETCAP/GDP(A)	-0.0120	-0.0026	-0.0008	-0.0064	-0.0026
	-0.0090	-0.0087	-0.0074	-0.0083	-0.0085
BANKCAP/ASSET(A)	0.0021	0.0026	0.0011	0.0019	-0.0001
	-0.0024	-0.0026	-0.0026	-0.0024	-0.0024
ATTGLOB(A)	0.0011	0.0020	0.0002	0.0014	0.0001
	-0.0037	-0.0038	-0.0037	-0.0039	-0.0039
FISCFREEDOM(T)	-0.0546	-0.0403	-0.0625*	-0.0466	-0.0610
	-0.0382	-0.0348	-0.0338	-0.0358	-0.0396
INVFREEDOM(T)	0.0250	0.0029	0.0422	0.0178	0.0248
	-0.0388	-0.0461	-0.0367	-0.0440	-0.0384
CORRUPTINDEX(T)	-0.00605**	-0.00682**	-0.00877***	-0.0040	-0.0031
	-0.0029	-0.0034	-0.0030	-0.0040	-0.0040

LOGBRANCH(T)	-0.0093	-0.0081	-0.0053	-0.0071	-0.0014
	-0.0131	-0.0127	-0.0112	-0.0117	-0.0126
INFLATION(T)	-0.00472**	-0.00534**	-0.00474*	-0.00552**	-0.00565**
	-0.0023	-0.0025	-0.0024	-0.0024	-0.0024
GDPGROWTH(T)	0.0005	-0.0006	0.0010	-0.0006	-0.0001
	-0.0013	-0.0015	-0.0012	-0.0015	-0.0013
Constant	0.0117	0.1180	0.0910	0.0468	0.0719
	-0.0883	-0.0952	-0.0903	-0.0835	-0.0872
Observations	66	66	66	66	66
R-squared	0.326	0.334	0.402	0.342	0.372
Adj. R-squared	0.0478	0.0588	0.1546	0.07	0.1131

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Summary of results

Sr. No.	Questions	Results
Q1	Do banking acquisitions earn abnormal returns for acquirers' shareholders since the financial crisis?	Yes, it had a positive and significant impact on the performance of acquisitions.
Q2	Do cross-border acquisitions generate higher returns for acquirers' shareholders as compared to domestic deals since the crisis?	No, per se, we observe no excess returns in cross-border acquisitions since 2007-08.
Q3	Do cross-border acquisitions by EE banks generate higher returns than DE bank acquisitions since the crisis?	No, after the crisis, home country alone doesn't matter for shareholder returns.
Q4	Do cross-border acquisitions generate different returns since the crisis depending on the acquirer-target's country of origin?	Yes, but only EE-DE acquisitions generated excess returns for shareholders.