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Post-Crisis Behavior of Banks in Asia: A Case of Chronic Over-Capitalization

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Abstract

The study investigates the behavior of Asian banks in response to the subprime mortgage crisis and examines how countries that have experimented with a mix of conventional and Islamic banking managed their balance sheet during that period. The study carries out an independent mean *t*-test comparing the difference of leverage of 464 conventional commercial Asian banks pre- and post-crisis from the largest twenty-five Asian economies based on GDP (2007). The analysis uses 10-year unbalanced panel data of conventional banks and employs the generalized least squares estimation using a dummy variable event window method to capture the response of Asian banks. The study finds evidence of a structural change in the capital structure of Asian commercial banks in response to the financial crisis. Findings suggest that conventional banks increased their capital position more in countries that have both Islamic and conventional banking than those countries without Islamic banking services. By having Islamic banking in their product portfolio, countries can exert market discipline on conventional banks. The study identifies a significant role of global macroeconomic shocks on banks liability structure decision-making. Evidence shows that this increase in capital positioning by banks was a permanent rather than a temporary response.

Keywords: Financial Crisis, Capital Structure, Central Banking Regulation, Bank Risk, Leverage

JEL Classification Code: G10, G21, G32

1. Introduction

What was the capital structure response of Asian banks to the subprime mortgage crisis? Did Asian conventional banks also experience a permanent structural change after the financial crisis, as predicted by (Hussien et al., 2019) for banks in the Gulf region? How was the response different across differently structured banking systems? Did the presence of higher capitalized Islamic banks impact the response of conventional banks? There is a need to understand how Asian banks responded to the financial crisis across different banking systems. There is contradictory evidence on the impact of Islamic finance on financial sector stability. This study is important because it provides evidence on how conventional banks perform during economic down turns in the presence of Islamic banks, by studying their capital structure.

Bank capital structure is a mix of deposits, equity and subordinated debt. Various theories try to explain how an optimal combination is ascertained. These decisions are a trade-off between bankruptcy costs, repayment ability and liquidity. Capital helps in reducing default risk but negatively impacts liquidity (Diamond & Rajan, 2002). Gorton and Winton, (1995) describe the trade-off with liquidity as the cost associated with how much capital the bank maintains. Jablecki, (2009) finds that high capital positions were affecting the bank-lending channel in the G-10 countries resulting in credit rationing. Bank size moderates the impact of capital on default risk and smaller banks exhibit lower default risk (Berger & Bouwman, 2013). The performance of larger banks with high capital reserves was better during the financial crisis (Qayyum & Noreen, 2019; Banna et al., 2017). Miles (1995) finds that banks maintain suboptimal capital because the depositors are unable to judge the bank's capital

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position. Sundaresan and Wang (2014) model the bank's optimal liability structure and propose that bank specific factors, rather than regulatory requirements are of a higher order importance in determining its leverage. Empirical studies suggest that some of these factors are operating expenses, taxes, deposit insurance and bank size (Gropp & Heider, 2010; Mohammad & Nishiyama, 2019).

Experimenting with Islamic banking has consequences for financial stability. Many Asian countries have experimented with Islamic banking and it has experienced exponential growth. However, many are still only using conventional banking due to contradictory evidence of its usefulness. Islamic banks keep higher capital levels because of their business model (Bitar et al., 2019). Contrary to Diamond and Rajan (2002) and Gorton and Winton (1995) studies suggest a trade-off exists between capital and liquidity creation; Berger et al. (2019) find that comparatively higher capital positions are held by Islamic banks but still manage to create more liquidity. Sahyouni and Wang (2019), however, find the two systems to be similar. Bank capital structure is an important factor in maintaining stability during crisis (Berger & Bouwman, 2013). Does inclusion of Islamic banking improve the overall stability?

Risk-weighted capital of banks exhibit large fluctuations in Asian Banks, for example, some Pakistani banks are maintaining risk-weighted capital ratios as high as 35%. Bitar et al. (2018) study Islamic banks from 28 countries and show that they keep capital above the regulatory requirements. Allen et al. (2011) find similar evidence for conventional banks. This should affect liquidity negatively, and is supported by the average South Asian domestic credit available to private sector, i.e., 46.8 percent of GDP for 2018 compared to the global average of 129.2 percent. Similarly, South Asian Domestic credit provided by financial sector (percentage of GDP) for 2018 is 69.3% compared to the global average of 142%.

By using the difference in means *t*-test, response of bank leverage to the crisis is determined. Fixed effects estimation on data from 2002-2012 forming an unbalanced panel of 25 largest Asian economies based on GDP is done. In most countries that have Islamic banking, the conventional banks also offer Islamic services and products, which make a fair comparison very difficult. This study compares the response of conventional banks, to the crisis, in countries with mixed (conventional and Islamic banking) system against countries running purely conventional banking systems. Finally, for estimation robustness, the response to the crisis by banks in South Asia and Asia Pacific are analyzed separately.

Empirical evidence suggests that inclusion of Islamic banks may have caused a higher permanent increase in capital position of conventional banks in comparison to countries without Islamic banks. This finding is important evidence to support the argument to introduce Islamic banking practices in the latter. Evidence suggests that it might improve financial stability by inducing higher capital positions even in conventional banks, but could inadvertently impact the banking sectors' ability to create liquidity.

2. Literature Review

Literature dating to 1980 discusses a wide range of theories about capital structure decisions by nonfinancial firms. Myers and Majluf (1984) and their Pecking Order Theory has been tested extensively in literature and a lot of studies find evidence in its favor (Benito, 2003; Hoque & Kashefi-Pour, 2015; Sharpe, 1995). Similarly, the Trade-off Theory of capital structure has also been tested in banking literature, but conclusive evidence on its role in determining capital structure of banks is not available. The role of information asymmetry has also been highlighted in multiple studies (Al-Hunnayan, 2020; Benito, 2003; Dowd, 1999; Johnson, 1998; Miles, 1995; Qayyum & Noreen, 2019). Most of these theories are derived from financing decisions by non-financial firms.

Miles (1995) is important because it provides theoretical underpinning to the need for bank capital regulation, by attributing information asymmetry as a main contributor to the capital structure decision. Inability of depositors to assess the financial soundness of banks incentivizes risk taking and low capital ratios. This is derived from the banks inability to induce low deposit rates because of high capitalization. Alkhazaleh and Almsafir (2015) find evidence in support of the argument (Petacchi, 2015). Gertler and Kiyotaki (2010), however, propose that higher asymmetry of information between the depositor and the bank leads to lower deposits. The depositors would prefer investing in other alternatives rather than keeping their money in the bank. This would result in a shrinkage in the deposit ratio, therefore contradicting (Miles, 1995). Dowd (1999) advocating free banking reasons, the argument that depositors cannot assess capital being maintained by banks is farfetched and therefore there is no need for capital regulation.

Theories have also suggested that capital regulation may be the factor that impacts the capital structure decision. Orgler and Taggart (1983) suggest a role of bank size, taxes, default risk, technology and government regulation in deciding capital structure. Flannery (1994), Pennacchi (1987) also suggest similar indicators and highlight capital requirement as an important determinant. Ghosh and Chatterjee (2018) find contradicting evidence on the role of capital regulation in determining bank capital structure.

More contemporary literature focuses on individual-specific characteristics as determinants of individual banks financing decision (Bitar et al., 2019; Bukair, 2019; Ghosh & Chatterjee, 2018; Gropp & Heider, 2010; Mohammad & Nishiyama, 2019). Factors like liquidity requirements

and debt market conditions have also been attributed to capital structure choice. Bank capital structure decisions have implications for bank intermediation and stability. Capital helps in reducing default risk, but negatively impacts liquidity creation (Diamond & Rajan, 2002). Bernanke and Gertler (1985) show that capital, asset risk, and monitoring costs have an impact on banks intermediation. Banks have the incentive to keep low capital, and would like to engage in risky lending (Calem & Rob, 1999; Jackson et al., 1999). Hellmann, Murdock, and Stiglitz (2000) find that capital requirements may reduce this behavior. The model by Sundaresan and Wang (2014) predicts that banks prefer to keep high leverages, but regulations and deposit insurance impacts leverage negatively. Other factors that impact the liability side of balance sheet are how subordinated debt and deposits respond to bank risk profile, the tax regime and operating costs. Mohammad and Nishiyama (2019) find empirical evidence to support this hypothesis in the case of Asian banks.

Excess bank capital affects bank profitability negatively. However, inadequate capital buffers played a key role in 2007–08 (Acharya et al., 2017; Acharya & Richardson, 2009; Berger & Bouwman, 2013). Higher capitalized banks were more profitable during the subprime mortgage crisis and bank sizes moderated this relationship (Demirguc-Kunt et al., 2013). Berger and Bouwman (2013) find similar evidence.

Islamic banking has grown exponentially globally over the last two decades. Most countries offer two kinds of commercial banking services: Islamic and Conventional banking to target an unbanked potential market. Asset-backed financial product structures in Islamic banking are viewed as safer than conventional bank products. Imam and Kangni (2016) find that Islamic banking impacted economic growth positively by improving financial inclusion and maintaining better capital positions. To compete, some conventional banks in these countries offer Islamic windows.

There is contradictory evidence on how Islamic banks perform during recessions. Chazi and Syed (2010) show that capital positions of these banks were higher during periods of financial instability and is the reason for better performance. Islamic banks efficiency was not impacted during the subprime mortgage crisis due to their high capital position (Fa-Yusuf, 2016; Said, 2012). Farooq and Zaheer (2015) attribute the better performance to lower withdrawals. Islamic banks were rated better by external rating agencies during this period as well (Hasan & Dridi, 2011). Hassan et al. (2019) attribute it to better risk management practices by these banks. Berger et al. (2019) find that Islamic banks create greater liquidity than their counterparts during crisis period. Contrary to this, Alqahtani and Mayes (2018) find that large Islamic banks experienced more instability than large conventional banks.

Beck et al. (2013) suggest that both banks offer similar products and the difference between them is very little. They find that in mixed banking structures with a higher concentration, Islamic banks are less stable. Similarly, some studies find no difference in response to the financial crisis (Kassim & Majid, 2010; Bourkhis & Nabi, 2013). They attribute this to Islamic banks not following their theoretical business model. Parashar and Venkatesh (2010), however, find that, conventional banks' ability to create liquidity and its return on assets were affected more during the crisis, while Islamic banks' capital, leverage and return on equity were hit harder due to the crisis.

Capital ratios of emerging economies are steadily increasing after the financial crisis in Europe and emerging economies (Beck et al., 2013). Hussien et al. (2019) find evidence of a permanent structural change in Islamic banks of the Gulf countries after the crash. Demirgüç-Kunt et al. (2020) found a similar change in leverage of nonfinancial firms post the financial crisis.

This study contributes to existing knowledge on the impact of recessions on bank capital structure by investigating structural changes in Asian banks and how the presence of Islamic banks, that were maintaining higher capital position even before the financial crisis, impacted conventional bank behavior.

3. Methodology

The study carries out an independent mean t-test comparing the difference of leverage of 464 conventional commercial Asian banks pre- and post-crisis from 25 countries. Finally, the following empirical model is estimated using regression analysis

$$\begin{aligned}\text{Leverage}_{ict} = {} & \alpha_t + \beta_1 \text{Profit}_{ict} + \beta_2 \text{Size}_{ict} + \beta_3 \text{TaxRatio}_{ict} \\ & + \beta_4 \text{OperatingExpense}_{ict} + \beta_5 \text{Dividend}_{ict} \\ & + \beta_6 \text{PostCrisisDummy}_{ct} + \beta_7 \text{DepositInsurance}_{ct} \\ & + \beta_8 \text{HHI}_{ct} + \beta_9 \text{Inflation}_{ct} + \beta_{10} \text{GDP}_{ct} + c_t + \mu_{ict}\end{aligned} \quad (1)$$

Bank leverage is the book value (1-Capital to Asset ratio) and used because it is a well-defined ratio (Frank & Goyal, 2004). Gropp and Heider (2010) use two definitions of leverage (market value and book value leverage). Mohammad and Nishiyama, (2019) used a similar model and showed that the market and book value dependent variable leverage exhibited similar behavior in Asia. The dummy variable Post-Crisis Dummy is used. The pre-crisis period is 2002–2007 and the post-crisis 2008–2012. The event window is the post-crisis period during which banks are assumed to have adjusted for the shock. The bank specific variables include profit, bank size, dividend and operating expense. Other macroeconomic

control variables include inflation rate, GDP growth rate and Herfindahl index. Herfindahl proxies bank concentration. Nissan and Niroomand (2006) use the Herfindahl index as a proxy for information asymmetry.

The model is estimated using GLS Random effects estimation. The correlation matrix is reported in the appendix. Variance Inflation Factors (VIFs) show that there is no multicollinearity issue. The Breusch Pagan test revealed heteroscedasticity and cluster robust standard errors are used. The analysis is done using banks from the 25 largest countries of Asia based on their gross domestic product. Data has been taken from Bankscope/Orbis database. Demirgüç-Kunt et al. (2020) use data from 2004–2011 to study SMEs. This study uses dataset from year 2002–2012. The macroeconomic data is from the IFRS database.

4. Main Results and Discussion

Table 1 shows the results of the *t*-test. The mean of bank leverage positions before and after the crisis period are compared. Evidence shows that post-crisis mean leverage of banks was lower than the pre-crisis level. This suggests that after the financial crisis conventional banks increased their capital positioning (Cohen & Scatigna, 2016). Islamic banks in the Gulf exhibited a similar permanent change in capital structure (Hussien et al., 2019). Since banks with lower capital buffers had been impacted harder by the crash Asian banks also reacted by improving capital positions.

Table 2 shows the results for the 26 countries in Asia. Model 1 explains 31% of data for the Asian countries, which is lower than Europe (Gropp & Heider, 2010). The results reveal that profitability in the case of Asian banks is statistically significant and negatively related to leverage. Increase in leverage can be attributed to either an increase in deposits or subordinated debt (Sundaresan & Wang, 2014). Increases in either affect the value maximization function negatively, therefore an increase in leverage would result in a decrease in profitability. This finding is like consistent with Asian and US/UK banks (Mohammad & Nishiyama, 2019; Gropp & Heider, 2010)).

Table 2: Main Results

	Model 1
	Asia
	Coef./(Rob. Std. Err)
Constant	0.4327***
	(0.1091)
Bank Specific Variables	
Profit	−1.1155***
	(0.1992)
Size	0.0346***
	(0.0073)
Tax Ratio	1.4039**
	(0.6796)
Operating Expense	−0.6547**
	(0.2190)
Dividend	0.0023
	(0.0021)
Macroeconomic Variables	
Post Crisis Period	−0.0321***
	(0.0079)
Deposit Insurance Dummy	−0.0150**
	(0.0070)
HHI	−0.0028
	(0.0349)
GDP	−0.0001
	(0.0006)
Inflation	0.0012*
	(0.0007)
Time Controlled	Yes
Overall *R*-square	0.31
No. of Obs	2795

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$.

Model controls for time effects which are not reported in the table.

Table 1: Independent Group *T*- Test to Compare Leverage Before and After Crisis

Group	**Obs**	**Mean**	**Std. Err.**	**Std. Dev.**
Pre Crisis	1569	0.9036	0.0027	0.1085
Post Crisis	1370	0.8948	0.0028	0.1020
Combined	2939	0.8995	0.0019	0.1056
diff		0.0089	0.0039	
Ha: diff < 0	Pr(T < *t*) = 0.9886		*t* = 2.2793	
Ha = diff !=0	Pr(|T| > |*t*|) = 0.0227			
Ha: diff > 0	Pr(T > *t*) = 0.0114		Degrees of freedom = 4314	

The significance and the size of coefficient is showing that bank size have a positive impact on leverage, which indicates that large Asian banks can get more deposits and might be taking part in less risky lending as compared to smaller banks. Bank leverage also includes debt and the positive significant sign is indicative of banks choosing to increase the subordinated debt component of their leverage to gain the tax advantage in countries with high tax rates. Consistent with theory, operating expenses have a significant negative impact on leverage. Dividends have positive, but insignificant impact on bank leverage.

On the macroeconomic level, bank concentration is found to have an insignificant negative impact on leverage. Competition has an insignificant effect on the leverage of banks. Having explicit deposit insurance has a negative impact on the banks leverage, which is counter-intuitive since explicit deposit insurance safety nets are put in place to encourage deposit growth.

The post-crisis period dummy seems to indicate that after the subprime mortgage crisis, banks responded by increasing their capital position and leverage ratios maintained by banks have fallen. Hussien et al. (2019) find similar evidence for Gulf countries. This capital position strengthening is a permanent increase from 2008 to 2013. The findings further the results of Table 1.

Islamic commercial banking is a concept that is prevalent in many countries of Asia and most of the countries, in order to target this potential market, offer two kinds of commercial banking services, i.e., Islamic and Conventional banking. However, most conventional banks offer Islamic products/ window, which means that the banks are not completely conventional. The reason for estimating the response of these countries is that there is mixed results regarding how Islamic banks responded to the recession. Since the product structure of Islamic banks is asset-backed/based financing, so they are argued to be less risky than conventional banks. Parashar and Venkatesh (2010) suggest that both banks responded differently to the recession. Beck et al. (2013) find that the difference is smaller than expected because most Islamic products can be classified under a similar conventional bank product. They attribute better performance in recessions to higher capitalization in Islamic banks. However, they find that mixed banking structures with a higher concentration of Islamic banks are less stable.

How did countries with mixed banking structure perform in terms of bank leverage? Models 2 and 3 are estimate of banks in mixed banking systems and with only conventional banking practice to analyze this behavior. In model 2, Asian countries that have a mixed banking system comprising conventional and Islamic banking are used. The conventional banks offer Islamic windows as an additional product, which means that the banks are not completely conventional. When these countries are reviewed in isolation, post shock results show that leverage had decreased even more in banks of countries with mixed banking system. Moreover, this behavior may have been caused due to the presence of highly capitalized Islamic banks. Another explanation is the presence of Islamic banking windows within conventional banks that could have resulted in improved capital positions by them after the crisis.

Although this behavior might improve the stability of the banking sector it can negatively affect the credit availability. The proxy of bank concentration is also significant in this model and indicates that leverages fall when there is more competition in the market. This may be because of an increase in difficulty in attracting deposits as available options increase.

Model 3 is estimated to check the robustness of our first model. Estimated using only data of banks from countries that have purely conventional banking, we find that the 3% decrease in leverage or conversely improvement in capital position in the behavior that is exhibited in these countries.

Table 3: Mixed Vs. Conventional Systems

	Model 2	**Model 3**
	Mixed	**Conventional**
	Coef./(Rob. Std. Err)	**Coef./(Rob. Std. Err)**
Constant	0.5269***	0.2504
	−0.1187	−0.1846
Bank Specific Variables		
Profit	−1.5023***	−0.8451***
	−0.3087	−0.1399
Size	0.0353***	0.0454***
	−0.0079	−0.0123
Tax Ratio	2.1055***	−0.0757
	−0.5261	−0.9158
Operating Expense	−0.8266*	−0.8119***
	−0.4579	−0.1282
Dividend	0.0001	0.0007
	−0.0063	−0.0021
Macroeconomic Variables		
Post Crisis Period	−0.0603*	−0.0384***
	−0.0326	−0.0103
Deposit Insurance Dummy	−0.0096	−0.0148*
	−0.0132	−0.0087
HHI	−0.0873**	0.0383
	−0.0438	−0.0468
GDP	−0.0018	−0.0002
	−0.0022	−0.0006
Inflation	0.0008	0.0013*
	−0.0016	−0.0007
Overall *R*-square	0.33	0.31
No. of Obs	552	2243

*$p < 0.1$, **$p < 0.05$, *** $p < 0.001$.

Comparing the two regions would provide some insight into how banks of both regions. In the next two models, the sample is decomposed in two regions: South Asia and the rest of Asia, which includes Asia Pacific and Central Asia. We find that within the two regions the response of the banks to the financial crisis was very similar and show a 3% permanent improvement in capital position. However, the model loses its explanatory power in the case of South Asia.

Table 4: South Asia Vs. Asia Pacific

	Model 4	Model 5
	South Asia	Asia Pacific
	Coef./(Rob. Std. Err)	Coef./(Rob. Std. Err)
Constant	0.5419***	0.3569**
	(0.0778)	(0.1243)
Bank Specific Variables		
Profit	0.1915	−1.1757***
	(0.1496)	(0.2070)
Size	0.0300***	0.0381***
	(0.0066)	(0.0082)
Tax Ratio	−2.4706**	1.4146*
	(0.8119)	(0.7300)
Operating Expense	−0.8642	−0.6022**
	(0.8486)	(0.2503)
Dividend	−0.0040	0.0032
	(0.0046)	(0.0025)
Macroeconomic Variables		
Post Crisis Period	−0.0309*	−0.0322***
	(0.0167)	(0.0086)
Deposit Insurance Dummy	−0.0208**	−0.0104
	(0.0089)	(0.0081)
HHI	0.1299**	−0.0063
	(0.0661)	(0.0385)
GDP	0.0004	0.0004
	(0.0015)	(0.0008)
Inflation	−0.0017*	0.0013
	(0.0009)	(0.0008)
Time Controlled	Yes	Yes
Overall *R*-square	0.16	0.40
No. of Obs	367	2428

*$p < 0.1$, **$p < 0.05$, *** $p < 0.001$.
All the models controlled for time effects which are not reported in the table.

4.1. Robustness

As a final robustness check, three additional regressions are run controlling for country effects. The results are robust with the original findings, but the reaction of the banks as a response to the shock in found to be greater after controlling for cross-country differences. Bank response in South Asian countries adjusted their leverage by a larger magnitude post crisis compared to Asia Pacific. Majority of South Asian countries have been experimenting with mixed banking systems and this may be the reason why the response has been greater in these countries.

Table 5: Robustness Controlling for Country Effects: South Asia Vs. Asia Pacific

		Decomposition	
	Asia	South Asia	Asia Pacific
	Model 6	Model 7	Model 8
	Coef./(Rob. Std. Err)	Coef./(Rob. Std. Err)	Coef./(Rob. Std. Err)
Constant	0.3291**	0.2262	0.3314**
	(0.1263)	(0.1468)	(0.1438)
Bank Specific Variables			
Profit	−1.1461***	0.1743	−1.1992***
	(0.1966)	(0.1431)	(0.2072)
Size	0.0456***	0.0473***	0.0455***
	(0.0091)	(0.0090)	(0.0103)
Tax Ratio	1.2074	−1.8281**	1.3535*
	(0.7346)	(0.7998)	(0.7481)
Operating Expense	−0.5648**	0.6804	−0.6137**
	(0.2460)	(0.8439)	(0.2476)
Dividend	0.0019	−0.0041	0.0029
	(0.0022)	(0.0043)	(0.0026)
Macroeconomic Variables			
Post Crisis Dummy	−0.0429***	−0.0432**	−0.0390***
	(0.0094)	−0.0174	(0.0104)
Deposit Insurance Dummy	−0.0131**	−0.0284**	−0.0132*
	(0.0066)	(0.0089)	(0.0075)
HHI	0.0125	0.1923**	−0.0116
	(0.0368)	(0.0697)	(0.0399)
GDP	−0.0002	0.0010	0.0002
	(0.0007)	(0.0013)	(0.0008)
Inflation	0.0002	−0.0011	0.0002
	(0.0005)	(0.0008)	(0.0007)
Country Controlled	Yes	Yes	Yes
Overall *R*-square	0.4436	0.3255	0.4598
No. of Obs	2795	367	2428

*$p < 0.1$, **$p < 0.05$, ***$p < 0.001$.

5. Conclusion

This paper investigated the leverage behavior of Asian banks in the 2007–08 financial crisis. Empirical evidence shows that, after the subprime mortgage crisis, the commercial banks in Asia responded by keeping a better post-crisis capital position, consistent with Hussein et al. (2019). This behavior is a double-edged sword where over-capitalization could protect against potential future shocks, but could lead to credit rationing by banks. While comparing both regions of Asia, evidence suggests that the banks of the South Asia region increased their capital position slightly more than the Asia Pacific region. One reason for this could be that the Asia Pacific region was impacted harder by the financial crisis. This behavior was even more amplified in countries where a mixed banking system exists. Islamic banks hold more capital due to their business model and having a mix of Islamic and conventional banking could have resulted in conventional banks choosing to improve their capital position more than the rest of Asia. Beck et al. (2013) suggest that increase in Islamic bank concentration may negatively affect financial sector stability. The findings suggest that, by having Islamic banking in their product portfolio, countries can reduce the moral hazard and exert market discipline on conventional banks. Contrary to Beck et al. (2013), this might help improve their financial stability. The role of Islamic windows of commercial banks in exerting market discipline needs further study. Lending by non-ASEAN banks contracted significantly during the crisis period. The credit crunch effect in countries with a mix of Islamic and conventional commercial banks needs further exploration.

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Appendix

Table A: Country List

	Country Name	Mixed Banking
1	Afghanistan	Yes
2	Armenia	No
3	Azerbaijan	Yes
4	Bangladesh	Yes
5	Cambodia	No
6	China	No
7	Georgia	No
8	Hong Kong	No
9	India	No
10	Indonesia	Yes
11	Japan	No
12	Kazakhstan	Yes
13	Kyrgyzstan	Yes
14	Macao	No
15	Malaysia	Yes
16	Mongolia	No
17	Nepal	Yes
18	Pakistan	Yes
19	Philippines	No
20	Republic of Korea	No
21	Singapore	Yes
22	Sri Lanka	No
23	Taiwan	No
24	Thailand	No