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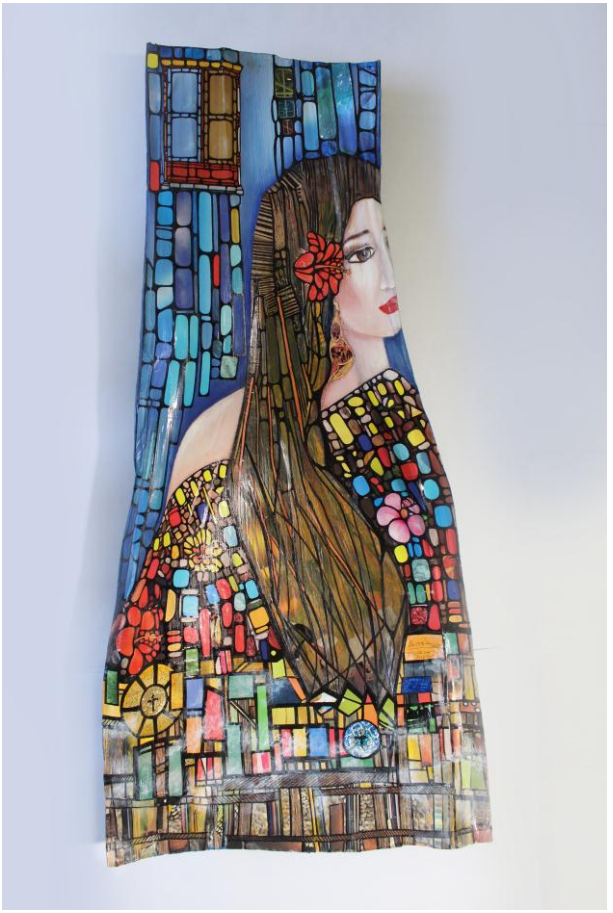

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Does competition affect banks' stability? Evidence from ASEAN economies

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Abstract

This manuscript attempts to investigate the relationship of stability and competition in dual banking economies of ASEAN-5 over the period 2006–2016. We use the Lerner index (LI) as a proxy for banking competition and Z-score is used as a proxy for banking stability as a method. Using the two-step system GMM technique, our results do not indicate any association between competition and stability. In conclusion, one of the benefits that a country can gain form a dual banking system is that it can improve its financial inclusion by attracting customers based on religious needs.

Keywords: Financial stability, Risk-Shifting, Bank competition.

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¿Afecta la competencia a la estabilidad de los bancos? Evidencia de las economías de la ASEAN

Resumen

Este manuscrito intenta investigar la relación entre la estabilidad y la competencia en las economías de banca dual de ASEAN-5 durante el período 2006-2016. Utilizamos el índice de Lerner (LI) como un proxy para la competencia bancaria y el puntaje Z se usa como un proxy para la estabilidad bancaria como un método. Usando la técnica GMM del sistema de dos pasos, nuestros resultados no indican ninguna asociación entre la competencia y la estabilidad. En conclusión, uno de los beneficios que un país puede obtener de un sistema bancario dual es que puede mejorar su inclusión financiera atrayendo clientes basados en necesidades religiosas.

Palabras clave: estabilidad financiera, cambio de riesgo, competencia bancaria.

1. INTRODUCTION

Banking and especially Islamic Banking has observed a rapid growth in the past few decades, reaching over 60 countries, both in Islamic and non- Islamic. The share of Islamic banking stood at USD2.1 trillion in 2017. The banking industry is becoming more competitive. Hence, it is not surprising to know that many countries have set the increase in Islamic Banking growth as one of the main plans to develop the banking industry in their countries. It is often believed that excessive competition could lead to instability of the banking sector. This competition might crumble the banks' franchise value. This erosion can lead the banks to take more risks to maintain the profits. Taking on riskier

investments and policies will lead to more loan failures and instability. On the flip side, limited competition should lead banks to take safer investment decisions and protection of the franchise value of the banks that would contribute to the banking stability (Haseeb, 2018).

The nexus of competition and stability have been in discussion since the 1980`s, however, their results have not provided any conclusive evidence. There are studies that argue that more competition leads to a decrease in Banks' risk-taking thus promoting stability, thus favoring competition-stability hypothesis (Abdulhadi et al., 2018). Some other researchers found a non-linear relationship between banking competition and banks' stability. For instance, the studies done by Adusei (2018) who concluded that competition and banks' risk-taking have a nonlinear relationship. On the other hand, some other researchers concluded that banking competition is positively related to banks' risk-taking, thus promoting fragility, supporting the competition-fragility hypothesis (Adusei, 2018). Yet, the effect of such changes in competition on the stability of the banks is not clear.

It is noteworthy that Islamic banks do not only compete among themselves, they also face severe competition from conventional banks, offering similar products and services. For instance, in Malaysia, Bank Islam had been in a monopoly status in Malaysia for 10 years controlling the Islamic banking market until Islamic windows introduced in 1993. Bank Islam was the only Fully-fledged Islamic bank in Malaysia until Bank Muamalat came in 1999. In 2004, conventional banks could have Islamic banks subsidiaries, which increased competition among Islamic banks significantly. Increasing Islamic banking share and revamping

financial models of Malaysian financial sector is in line with Malaysian Vision 2020, Financial Sector Blueprint 2011–2020 and TN50's vision in transforming Malaysia economy into a high value-added, high-income economy. At the same time, ASEAN financial integration framework is encouraging the free flow of funds and the inclusive growth across ASEAN region. Surprisingly, the scenario is not as simple as it looks in a local competitive banking environment. As ASEAN is promoting a financial integration initiative, that proposes a harmonized regional banking industry through the Qualified Banks of ASEAN. This will surely result in a more competitive banking industry where banks from other ASEAN countries are now capable of entering Malaysian Banking Sector. Hence, it is very crucial to address the impact of this increasing competition on ASEAN banking stability. The results show that the evidence from the researchers has not been conclusive.

The past studies focused on developed countries to examine the association in the competition-stability nexus. Our objective and motivation are to explore if the banking sector competition results in more stability in ASEAN-5 (Malaysia, Indonesia, Singapore, Brunei Darussalam and Thailand). This paper contributes to the small growing research on the competition-stability nexus in the dual banking industry, specifically with reference to the ASEAN banking integration framework. The findings should help the regulators to achieve the optimal level of competition and stability. The empirical results will be a guideline for authors and regulators to come up with a better banking market structure that will help the banks in strengthening their resilience and efficiency. The next section presents the relevant literature. The remaining paper is structured as follows; Section 3 discusses the methodology and the data

used in this study, section 4 summarizes the empirical findings and discussion, which is followed by a conclusion and some policy recommendations incorporated in the final section of this paper.

2. LITERATURE REVIEW

Banks are always the most significant pillars of a financial system and the economy. Therefore, an efficient and stable banking system is a prerequisite to facilitating economic growth and avoiding financial crises. As seen in the Introduction, the nexus of competition and banking stability is still controversial, despite the efforts that have been made so far. Numerous studies indicate that competition among banks is a key determinant of bank stability; for example (Boyd & Nicolo, 2005). In this section, we summarize the different viewpoints of the scholars in literature. This section reviews the literature on the relationship between the competition in banking and stability. Some key measures of these are also discussed.

The Basic literature available on this have different opinions about the nature of this relationship, however, there are mainly three different views regarding the competition-stability in the banking industry. Only a few studies have explored the relationship in dual banking economies. Even though the literature is a sample, the research on this relationship is still inconclusive and the evidence provides different results. The supporters and findings on this can be divided into three different groups. One group supports the negative association between competition and banks risk-taking, while the second group supports the positive association

between competition and banks risk taking and the third group of researchers supports the nonlinear association between banking competition and banks risk-taking behavior.

Marcus (1984), one of the primal research on this literature, showed that the franchise value decreases as the banks take on more risk and involve in riskier policies. Increasing competition might erode the banks' extra earning by attracting good quality borrowers. This reduction in earnings results in relaxed screening criteria for borrowers that results in a decline of the overall credit quality. There are numerous supporters of this negative relationship, for instance; Keeley (1990) argued that higher banking competition erodes the banks' charter values and a negative tradeoff exists and that decline in franchise value results in an increase in banks' risk taking. Marquez (2002) argue that more competition disperses the information about the borrowers and that leads to an increase in the costs of funding and give more access to funds to poor quality borrowers. The decrease in market power might encourage banks to adopt more risky policies. Adusei (2018) supported the argument that higher market power leads to a reduction in the probability of banks' default. The excessive competition would relax the lending policies, that would result in more lending, and make banks to engage in risky projects that will increase the bank's risk (Caminal & Matutes, 2002).

Alternatively, there are finding supporting the positive relation between competition and banks risk taking (Boyd & Nicolo, 2005). John Boyd and De Nicolo argued that more market power in loan and deposit markets, results in higher rates for borrowers. Higher competition results in a reduction in bank risk taking. More competition would reduce the

interest rates for the borrowers, leading them to invest in safer projects hence safer banks (Asad et al., 2018). Firms facing higher borrowing rates one their loans would choose riskier investments that would lead to more default problems. Adusei (2018) argues that government rewards the more concentrated markets which can create moral hazard and make banks take more risks that might make the industry more fragile. Boyd et al. (2006) used two samples to show that the markets that were less concentrated showed lower z-scores. Using LI as a measure for bank level market power, Adusei (2018) supported the argument that the market power reduces the probability of bank failure. However, using Boone Indicator, the authors found great support that less market power (i.e. more competition) lowers the risks of default. Adusei (2018) in their study on ASEAN countries also support the competition-stability hypothesis.

Besides the above two opposing arguments, researchers also found a nonlinear relationship. Extending the Boyd and Nicolo (2005) model, introduced the imperfect relationship across the borrowing firms. They introduced two different effects of banking competition. The risk shifting effect discussed by the BDN model that more competition results in lower loan rates that hence lowering the default probability of borrowers. However, this effect leads to lower interest payments and thus lowering the bank earnings that might result in a greater probability of default. The authors have defined this effect as margin effect. Adusei (2018) found a U-shaped association between competition and bank failure representing the net effect of the two factors. With every entry of a new player in the industry, the banks risk taking measures are improved. Thus, the risk-shifting effect was seen to be dominating the concentrated markets. In a highly competitive market, the margin effect is seen dominated that is

more entries weakens the banks. Hence the moderate level of competition was seen for the loan markets to obtain the lowest bank risk. Adusei (2018) found that there is a nonlinear relationship between competition and the bank's risk-taking behavior as both extreme (high/low) competition levels enhance financial stability. They argued average competition experience more level of risk as compared to both low and high competition. Analyzing the banking industry of Spain, Jiménez et al. (2013) found, reducing competition in the banking sector promotes banking stability. These findings support the non-linear relationship and are in line with a few of the previous findings (Imran et al., 2018). This relationship is supported by the González et al. (2017) in their study in dual banking countries of the MENA region.

3. DATA AND METHODOLOGY

Data for this research are extracted from Fitch Connect database for the period of 2006 – 2016. We take all the commercial of ASEAN-5, namely Malaysia, Indonesia, Brunei Darussalam, Thailand and Singapore. Taking 227 banks in total, 196 conventional and 31 Islamic banks. The study is restricted to the banks with at least four years of data. We use LI to measure competition in banking while the Z-scores is used as a proxy for banking stability.

3.1 Lerner Index Calculation

Competition has become a debatable topic in the literature due to its recognition as one of the main elements affecting financial stability (Beck et al., 2006). It is very hard to directly measure bank competition. Thus, instead of using measures of competition, studies usually use measures of the market power. The decrease in market power implies an increase in the level of banking competition. We use the LI to explore the level of the market. It can be measured at each point in time and is discussed as not a long run equilibrium measure that gives it an advantage over Panzar-Rosse H-statistic (Berger et al., 2009). We compute LI to explore the market power of each commercial bank in Malaysia. Lerner index has been used by several researchers to measure bank competition (Forssbæck & Tanveer, 2011). In order to estimate the Lerner index, we take a trans log cost function by restricted linear regression, linear homogeneity restrictions and imposing consistency. Below is the cost function:

$$\ln TC_{it} = \alpha_0 + \alpha_1 \ln Y + \frac{1}{2}\alpha_2 (\ln Y^2) + \sum_{j=1}^{3} \beta_j \ln w_{jit} + \sum_{j=1}^{3} \sum_{k=1}^{3} \beta_{jk} \ln w_{jit} \ln wk_{it} + \sum_{j=1}^{3} \gamma_j \ln Y \ln w_j + \varepsilon_{it} \quad (1)$$

Where TC indicates total costs, Y indicates one output (totalassets), w_{jk} (w_1, w_2 and w_3) indicate the three input prices (that are the price of the borrowed funds, labour price and the price of physical capital). After taking translog cost-function, the coefficients estimated are employed to

measure the marginal cost (MC). Using cost-function in Equation (1), we estimate the derivative of the log of TC with respect to the log of output. Hence, the cost-function presentation must estimate for MC. MC is given by:

$$MC_{it} = \frac{TCit}{Yit} \quad [\alpha_1 + \alpha_2 \ln y_{it} + \sum_{j=1}^{3} \gamma_j \ln w_{jit}] \qquad (2)$$

After the MC is calculated and the output price is measured, LI for each bank and year is measured to get a direct measure of competition among the banks. LI is explained as the change in the price of output and theMC, divided by price of output.

$$Lerner_{it} = (P_{it} - MC_{it}) / P_{it} \qquad (3)$$

P_{it} denotes the price whereas the MC_{it} denotes marginal cost of bank i's output, in year t.

The estimated Lernerit is then averaged over time for individual banks. LI ranges from 0 to 1. It swings towards 0 and the market is said in a pre-competitive market and where they have no power over pricing, when P equals MC. On the contrary, When the Lerner is high, and it tends towards one, it reflects the high mark-up of P above the MC; giving banks the monopoly power, thus the market power is increased. Lerner is said to be an opposite measure of competition where a high LI implies lower competition (Forssbæck & Tanveer, 2011). Generally, if LI is zero, it indicates perfect competition; whereas if LI is 1, it indicates monopoly.

3.2 The Z-score

Bank stability is measured with z-score indicator following (Clark et al., 2017). As evidenced in previous researches, this indicator is quite popular and effective in measuring the stability in banking studies. About z-score, this indicator has been used due to few reasons in several researches. Firstly, the Z-score can estimate an individual bank's risk. This measure is also widely applied for measuring and comparing the stability in dual banking studies. The Z-score calculates standard deviations, from which a bank is distant from losing its capital level. Z-score is a banks' risk proxy usually measured at the bank level. It employs the accounting data to calculate the default probability of a bank. It compares the capital ratio to the change in returns to catch the volatility in returns. The returns are measured using the ratio of equity to assets ratio plus Return on Average Assets (ROAA) and the standard deviation of Return on Average Assets (ROAA) is often used to measure the change in returns. The assumption is that a bank defaults when its capital falls to zero. Z-Score can be written as:

$$Z = (E/A+ROAA)/sdROAA \quad (4)$$

Where ROAA is the Return on Average Assets, E/A is Total equity over total assets, and sdROAA is the standard deviation of ROAA over a three-year period. Generally, a three-year window for the standard deviation of ROAA is enough to allow the variation in the z-score. The high value of z-score indicates the higher solvency of banks and vice versa, allowing to differentiate in the probability of insolvency in different groups. This attributes of z-score make it a best-suited proxy to compare

the stability between both banking models. demirgüçkunt & Detragiache (2009) called z-score as an improvement of the measures used by previous studies which employed accounting ratios such as NPL, interest margin, and capital adequacy to measure the stability in banks. Moreover, Z-score is useful for banks where sophisticated data are unavailable. Provided the above few reasons for Z-score's uniqueness, the z-score is expected to be an appropriate measure for our study, especially in differentiating the stability of Islamic and conventional banks.

3.3. Control Variables

A set of bank level and country level controls are also employed in our study. We employ equity ratio (equitytotalassets). It is often argued that banks with high capital ratio may influence their financial stability because they have a higher capacity of risk taking. Banks' size is also controlled using a log of total assets (LnTA) (Čihák & Hesse, 2010). Čihák & Hesse (2010) observe the different performance levels for different size of banks in dual markets. Liu et al. (2012) also argue that size notably impacts a bank's stability due to the fact that large banks, due to higher market powers, may take on more risk. Some Macroeconomic variables were also employed using GDP growth [gdpgrowth], GDP per capita [gdppercapita] and Inflation [inflation]. Table 1 shows the Definition and sources of the variables used in this study.

Table 1: Definition and sources of the variables used in this study

Variable	Definition	Source
Dependent Variables		
Total Risk of default [zscore]	Ratio of the sum of equity ratio to total assets and ROAA	Fitch Connect Database
	regarding the standard deviation of ROAA (sdROAA)	Authors' calculation
Explanatory variables		
Lerner Index [Lerner]	A competition estimate of market power at the bank level.	Fitch Connect Database
		Authors' calculation
Control variables		
Equity ratio [equitytotalassets]	Ratio of Equity/Total Assets	Fitch Connect Database
Growth of loans [grossloanstototalassets]	Annual loan growth rate	Fitch Connect Database
Extent of bank's lending [NetLoanstoTotalAssets]	Net loans/Total Assets; control for extent of bank's lending	Fitch Connect Database
Growth of assets [growthoftotalassets]	Annual assets growth rate	Fitch Connect Database
Bank size [lnTA]	Logarithm of Total Assets; controls for bank's size	Fitch Connect Database
Macroeconomic variables		
GDP growth [gdpgrowth]	Annual GDP growth rate	World Development Indicators
GDP per capita [gdppercapita]	Annual GDP per capita	World Development Indicators
Inflation [inflation]	Annual Inflation rate	World Development Indicators

3.4 Methodology

For exploring the effect of banking competition on stability, we estimate the below equation:

$$LnZ_{it} = \beta_0 + \beta_1 Lerner_{jt} + \beta_2 Z_{ijt-1} + \beta_3 X_{it} + \beta_4 Macro_{jt} + \varepsilon_{it} \quad (5)$$

Here, i, t, and j indicates the bank, year, and country respectively. LnZ_{jt} denotes log of bank stability measure, LI as our measure of market competition is given by $Lerner_{ijt}$, X_{it} is a vector of control variables at bank level such as size of bank, proxied by taking log of the total assets (lnTA), growth of loans (growthofgrossloans), gross loans to total assets (grossloanstototalassets), growth of total assets (growthoftotalassets), net loans to total assets (NetLoanstoTotalAssets). Lastly, Macrojt is a vector of country-level variables (gdpgrowth, gdppercapita, inflation). Arellano and Bond (1995) came up with the original GMM estimator (also called as first-differenced GMM), where instrument variables were introduced from the lagged levels of the explanatory variables and all the variables are modified by differencing and introduced instrument variables from the lagged values of the explanatory variables. Nonetheless, if there is a correlation in the error terms, the lagged values of the explanatory variables can turn out to be poor instruments. In our case, first-difference GMM might give us biased results. For estimation Eq. (5), we use the system GMM of Arellano & Bover (1995) and Blundell & Bond (1998) to get better and unambiguous estimators and better understand the variable relationship between banking competition and stability. The system GMM has smaller variances and it is thus more efficient, hence encouraging improvement in the precision in the estimator. The system GMM is most suitable in conditions small T, Large N and the dependent variable is dynamic (i.e. persistent); where control variables might correlate with the error term (i.e. control variables are not exogenous), where there is heteroscedasticity in data, which are more probable to be found in bank-level data. The two-step

system GMM refines the quality of estimation while controlling for endogeneity, serial correlation and heteroscedasticity issues.

4. RESULTS

To avoid the possible issues of endogeneity, serial correlation and heteroscedasticity, we employ a two-step system GMM technique. The non-significant value of Hansen-J-test makes sure the validation of over identifying restrictions showing the validity of our instrumental variables. Establishing that instruments used are not correlated with the error-term and have taken care of the endogeneity issue and also heteroscedasticity problem. Besides this, the insignificant values of AR (1) and AR (2) shows that serial correlation is absent. Table 2,3 and 4 demonstrate the impact of banking competition measured by the Lerner Index together with the control variables on Z-score for all banks (Full sample), conventional banks only and Islamic Banks only, respectively. The overall sample (Table 2: Full Sample) indicates that competition (LI) has no impact on banking stability. These results are not in line with (González et al., 2017; Kabir & Worthington, 2017). They reported U-shaped, negative and positive association of banking competition and stability respectively. Islamic dummy is found to be significant (negative) that indicates the less stability of Islamic banks in contrast to their conventional counterparts (Table 3). However, these results are only significant in one out of four specifications and hence may not be good enough to indicate conventional banks' superiority in terms of stability. These results contradict the findings of

Čihák & Hesse (2010) who did not find clear-cut evidence of conventional banks' superiority in terms of stability.

Control variables used in estimations mostly concur to expectations and earlier literature in terms of their relationship. For instance, the coefficient of size, which is measured by the log of total assets shows it has a positive effect on the stability for a sample of all the banks and conventional banks, however, it does not indicate any relationship in the case of Islamic Banks (Table 2, 3 and 4). The effect of gross loans to total assets (grossloanstototalassets) is significant. Finally, GDP growth is mostly insignificant in all the tables except three out of four specifications in Table 3, for conventional banks. Inflation is also mostly found as having no effect on the stability of the full sample as well as Islamic and conventional. Overall, our results do not indicate significant differences between conventional and Islamic banks and their potential determinants of stability.

Islamic Banks are often criticized for mimicking the products of conventional banks. This conventional approach of attracting deposits and customers have decreased the difference between both banking models. Islamic Banking products, till to date, have just a mere reflection of profit and loss sharing (PLS) based products, most of the products are debt-based which makes them similar to conventional banks. Chong and Liu found in their study on Malaysia that only a small part of Islamic banks' financing is based on PLS. They also found that their deposits are closely tied to conventional deposit rates and are not free of interest (Chong & Liu, 2009). The reason they

discussed is that the PLS contracts (like, Musharaka, Mudaraba) only make for a small piece of Islamic banks' portfolio of total assets. This is also recently confirmed in a research on Islamic banks (Ibrahim & Rizvi, 2017). This is also in line with (Chong & Liu, 2009). Two of the main reasons for our different results can be attributed to the dataset and the time period as compared to the closest literature to our paper (Čihák & Hesse, 2010). In fact, this study presents the most recent dataset used in the literature. In figure 1, we plot the Z-score to visualize the change in banking stability over our study period of 2006-2016. We see a drastic drop in the stability of the ASEAN-5 banking sector during the financial crises (2007-2008). In succeeding four years, we see a slow recovery in the regional banking stability and noted a boom till 2013. It is noteworthy to mention the decreasing trend in banking sector stability in ASEAN-5 economies. Policy makers and regulators should take this into consideration.

5. CONCLUSION

In this paper, we explore the competition-stability relationship in ASEAN-5 economies. One of the main motivation to do so is the existence of two types of banking models (Islamic and conventional) which has not only intensified the competition but has also complicated the competition-stability paradigm. Since ASEAN is currently working on the integration drive that proposed a harmonized regional banking through the Qualified ASEAN Banks, which will result in a more competitive banking industry where banks from other

ASEAN countries are now capable of entering in other countries' banking sector? Given the situation, both the banks may involve in excessive risk taking to maintain or gain market share. This can also lead them to engage in more non-traditional and riskier activities.

Our results do not indicate any association between competition and stability. In most of the results, we found no dissimilarity between both banking models (Conventional and Islamic Banks). For instance, in terms of stability, both the banks are found to be similar which is contrary to the theoretical expectation. One of the reasons for or different results can be attributed to the fact this paper represents the most recent data (2006 to 2016). We are not aware of any studies which have used such recent data. In the last four to five years, Islamic banks are often criticized for their business model for resembling the conventional system. There are claims that both the system will converge and there will be practically no difference between them. The lack of risk-sharing financings and mimicking of conventional products may be considered signals of possible convergence between the two systems soon. One of the important implications of this research is the existence of Islamic banks that may not necessarily destabilize the system as they respond to a different situation is similar to their conventional counterparts. In fact, one of the benefits that a country can gain from a dual banking system is that it can improve its financial inclusion by attracting customers based on religious needs.

Table 2: Competition and Stability (Full sample)

	M1	M2	M3	M4
L.zscore	0.0026	0.0019	0.0005	0.0014
	(0.463)	(0.529)	(0.861)	(0.680)
Lerner	0.1324	0.2256	0.2268	0.1161
	(0.566)	(0.361)	(0.356)	(0.614)
Islamic	-0.3139	-0.2435	-0.2727	-0.3493*
	(0.112)	(0.183)	(0.131)	(0.071)
Equity/ Total Assets	0.0282***	0.0317***	0.0330***	0.0296***
	(0.001)	(0.000)	(0.000)	(0.000)
lnTA	0.1184***	0.1092***	0.1062***	0.1184***
	(0.001)	(0.002)	(0.002)	(0.001)
NetLoanstoTotalAssets	0.0782	9.0977***	8.0972***	0.1194
	(0.753)	(0.000)	(0.000)	(0.628)
Growth of Gross Loans	-0.0000			
	(0.933)			
Growth of Total Assets	-0.0007	-0.0000		-0.0000
	(0.299)	(0.506)		(0.694)
Gdpgrowth	0.0654	0.0729	0.0949	0.0759
	(0.469)	(0.412)	(0.272)	(0.401)
Gdppercapita	-0.0708	-0.0789	-0.0990	-0.0810
	(0.416)	(0.356)	(0.233)	(0.352)
Inflation	-0.0094	-0.0155	-0.0163*	-0.0120
	(0.382)	(0.116)	(0.092)	(0.247)
grossloanstototalassets		-8.8186***	-7.8178***	
		(0.000)	(0.000)	
Constant	1.6319***	1.6946***	1.6965***	1.6251***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1455	1458	1472	1458
instruments	15.0000	15.0000	14.0000	14.0000
overall	197.0000	197.0000	197.0000	197.0000

AR (1)	0.2330	0.4784	0.3422	0.2201
AR (2)	0.4741	0.3648	0.9910	0.5557
Sargan Test (p-Val)	0.0893	0.0085	0.0139	0.0907
Hansen Test (p-Val)	0.1811	0.0686	0.0892	0.1702
p-values in parantheses				
* p<0.1, ** p<0.05 , *** p<0.01				

Table 3: Competition and Stability (Conventional banks only)

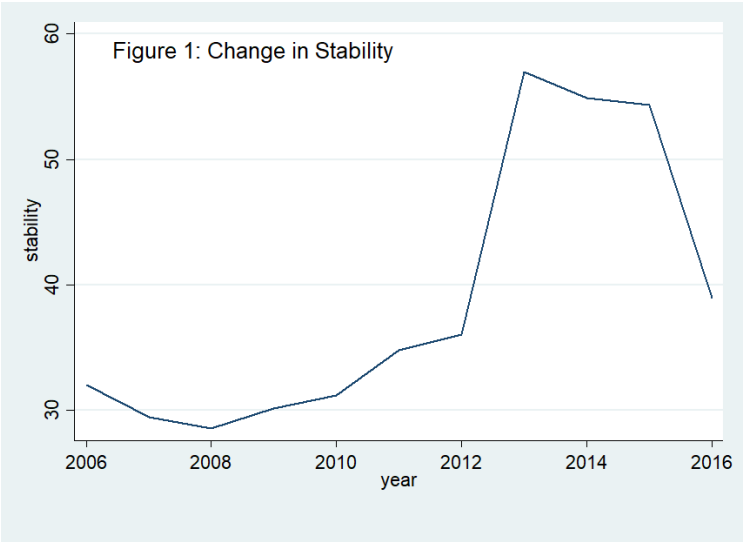
	M1	M2	M3	M4
L.lnzscore	0.2072	0.2051	0.1573	0.2051
	(0.244)	(0.249)	(0.376)	(0.249)
Lerner	0.1235	0.1243	0.1325	0.1243
	(0.605)	(0.600)	(0.640)	(0.600)
Equity/ Total Assets	0.0307***	0.0306***	0.0343***	0.0306***
	(0.001)	(0.000)	(0.000)	(0.000)
lnTA	0.1012**	0.1020**	0.1116**	0.1020**
	(0.019)	(0.019)	(0.010)	(0.019)
NetLoanstoTotalAssets	0.2712	0.2690	7.3084***	0.2690
	(0.304)	(0.306)	(0.004)	(0.306)
Growth of Gross Loans	-0.0001			
	(0.582)			
Growth of Total Assets	-0.0010	-0.0011		-0.0011
	(0.178)	(0.147)		(0.147)
gdpgrowth	0.1541**	0.1522**	0.1407*	0.1522**
	(0.031)	(0.032)	(0.069)	(0.032)
gdppercapita	-0.1535**	-0.1517**	-0.1404*	-0.1517**
	(0.029)	(0.030)	(0.063)	(0.030)
inflation	-0.0103	-0.0105	-0.0146	-0.0105
	(0.381)	(0.372)	(0.202)	(0.372)
grossloanstototalassets			-6.9063***	
			(0.005)	
Constant	0.9265**	0.9330**	1.0031**	0.9330**
	(0.043)	(0.040)	(0.033)	(0.040)

Observations	1263	1264	1275	1264
instruments	14.0000	13.0000	13.0000	13.0000
overall	173.0000	173.0000	173.0000	173.0000
AR (1)	0.1596	0.1611	0.1820	0.1611
AR (2)	0.6222	0.5822	0.2808	0.5822
Sargan Test (p-Val)	0.5541	0.5678	0.2612	0.5678
Hansen Test (p-Val)	0.5894	0.5942	0.3724	0.5942
p-values in parantheses				
* p<0.1, ** p<0.05 , *** p<0.01				

Table 4: Competition and Stability (Islamic Banks only)

	M1	M2	M3	M4
L.lnzscore	0.3964	0.4081	-0.0032	0.4081
	(0.303)	(0.275)	(0.986)	(0.275)
Lerner	0.1239	0.0609	0.7259	0.0609
	(0.846)	(0.925)	(0.206)	(0.925)
Equity/ Total Assets	0.0031	0.0055	0.0124**	0.0055
	(0.726)	(0.570)	(0.039)	(0.570)
lnTA	0.0221	-0.0001	-0.1205	-0.0001
	(0.914)	(1.000)	(0.581)	(1.000)
NetLoanstoTotalAssets	-0.4566	0.0068	8.3661***	0.0068
	(0.604)	(0.992)	(0.009)	(0.992)
Growth of Gross Loans	0.0009			
	(0.736)			
Growth of Total Assets	-0.0038	-0.0001		-0.0001
	(0.333)	(0.305)		(0.305)
gdpgrowth	-0.3341	-0.3546	-0.4432*	-0.3546
	(0.291)	(0.171)	(0.089)	(0.171)
gdppercapita	0.3456	0.3639	0.4455*	0.3639
	(0.288)	(0.170)	(0.091)	(0.170)
inflation	-0.0330	-0.0263	-0.0364	-0.0263

	(0.358)	(0.465)	(0.160)	(0.465)
grossloanstototalassets			-8.3386***	
			(0.007)	
Constant	2.3998	2.1996	4.6328**	2.1996
	(0.431)	(0.471)	(0.043)	(0.471)
Observations	171	173	176	173
instruments	14.0000	13.0000	13.0000	13.0000
overall	22.0000	22.0000	22.0000	22.0000
AR (1)	0.4881	0.2772	0.8150	0.2772
AR (2)	0.2219	0.4199	0.4576	0.4199
Sargan Test (p-Val)	0.3802	0.5266	0.4649	0.5266
Hansen Test (p-Val)	0.1237	0.1735	0.1596	0.1735
p-values in parantheses				
* p<0.1, ** p<0.05 , *** p<0.01				



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