Central Bank Transparency and The Cost of Banking Crisis

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Abstract

Several studies have examined the affect of quality of the government institution and the level of corruption on the cost of crisis. Rather than watch the goverment, we concern on the role of central bank quality institution to predict the cost of crisis. We then include the central bank transparency, government owned on banking sector, corruption and some macroeconomic indicator to predict the cost of crisis that consist of banking loss and economic loss. Using sample of 13 crisis countries during 1997 – 2006, we find that some governance indicators like political stability, rule of law and control of corrruption have a strong relationship with the central bank transparency. Then, we find that central bank transparency, government ownership on banking sector, corruption, and monetary indicator affect the deterioration on the bank lending during the crisis. If the fiscal indicator and geographic location added to the model, it can predict the deceleration economic growth during the crisis period.

Key words: central bank transparency, government owned bank, corruption, cost of crisis

1. Introduction

Banking crisis hapenned more frequent in the recent time, some of them occured not only in the country level but in the regional or even international level. Severe crisis with strong contagion effect can be seen in the Asian financial effect and the latest subprime crisis. Those large scale banking sector problems have raise widespread concern, banking crisis causes the disrupting of the credit flow to household, reducing investment and consumption, and forcing viable firms in to banckrupty. Banking crises may also jeopardize the functioning of the payment system, cause a decline in domestic saving and large scale capital outflow, and force banks into bankcrupty.

Banking crisis is expensive and has a negative effect to the macroeconomic. Caprio and Honohan (2009) described the expensive cost of banking crises have been in terms of their fiscal burden and the impact on macroeconomic growth. Serwa (2007) estimated the cost of crises based on the size of banking crises. Using a data from over 100 banking crises, finding that the size of a crisis matters for economic growth. Lower credit, deposit and money growth during crises cause GDP growth to decline.

The most tragic side of the banking crises is that it causes a humanity problem. One of the banking crises hapenned in Indonesia during the Asian financial crisis has increased the price and then impacted to the cost of living. That makes the poor been hit hardest. Levinshon et all (1999) found that the notion that the very poor are so poor to be insulated from international shocks is simply wrong. Rather, in Indonesian case, the very poor appear the most vulnerable. Still in Indonesia, Rukumnuaykit (2003) found that the financial crisis increased infant mortality risks by about 3.2 percent in both urban and rural areas. The results from the cumulative distribution comparisons of birthweights suggest that the financial crisis also had adverse impacts on birthweight in urban areas. These crises usually have influence on the political, social and cultural change too.

There are several factors hipotezised as the caused of banking crisis, macroeconomic situation usually seen as one of them. Demirguc-Kunt and Detragiache (1998) found that systemic banking crises erupt when the macroeconomic is weak, particularly when growth is low and inflation is high. Also, high real interest rates are clearly associated with sistemic banking sector problems, and there is some evidence that vulnerability of payment crises has played a role. Kaminsky and Reinhart (1999) found that problems in the banking sector typically precede a currency crisis and then the currency crisis deepens the banking crisis, activating a vicious spiral; financial liberalization often precedes banking crises. The anatomy of these episodes suggests that crises occur as the economy enters a recession, following a prolonged boom in economic activity that was fueled by credit, capital inflows, and accompanied by an overvalued currency.

Beside the macroeconomic aspects, banking crisis also caused by international environment aspects, like the resurgence of international capital flows to many developing countries. In a world of high capital mobility it is not clear to what extent policies are capable of significantly reducing a country's vulnerability in the event that capital flows reverse themselves (Reinhart et all, 1996).

There is a vulnerability of the system to sudden capital outflow increases the probability of the banking crisis.

Some researchs have taken to analize cost of crisis factors determinant. Demirguc-Kunt and Detragiache (1998) used fiscal cost to measure the severity of the crisis from 24 crisis episodes and found that low GDP growth, adverse term of trade, high real interest rate, high inflation, vulnerility to balance of payment, a larger share of credit to private sector, lagged credit growth. Law and order index and effective legal system that sanction fraudulence behavior are significantly correlated with the cost of crisis.

Another approach is used by Claessens et all (2004) that used the link between the quality of a country's institutional frameworks, the effectiveness of accommodative crisis resolution policies, as measured by the size of excessive fiscal costs associated with the crisis, and economic output losses as dependent variabel. They found that better institutions, less corruption, improved law and order legal system, and bureaucracy significantly correlated with the cost of crisis, meanwhile the higher fiscal outlays didn't. Better institutional framework reduces the economic cost of the crisis, and sound legal system makes the crisis recovery cheaper and faster.

This paper tries to analize the determinant factors of the cost of banking crisis. Aikins (2009) conclude that periodic global financial crisis occur because of the failure to learn from history and ineffective regulatory governance. In this paper, rather than see the role of government, the writer highlite the role of central bank as banking sector supervisor as important factor determined the cost of crisis. When the central bank could do their job better, the crisis wouldn't happened too destructive, and of course the cost of crisis wouldn't severely hapenned. The writer see central bank transparency has an important value and also can represent the central bank governance. On the other side, corruption is important factor that has negative effect on economic condition. The writer think that in the case of banking crisis, corruption will make the cost of crisis more expensive. The writer also examine the government owned on the national bank as determinant factor too, because on the political pressure situation, central bank may licence weak government owned bank and not enforce prudential regulation. Finally some macroeconomic indicators and geographic location added to the model .

2. Teoretichal Literature

A. Central Bank Transparency

Central bank has very important function to the country economic condition. The primary responsibility of the central bank is to assure price stability and financial stability. To keep the financial system steady, central bank roles as the lender of last resort and absolutely as the banking supervisor. The conflict often consist to conduct the monetary policy as good as banking supervision function, central bank could be tempted to relax monetary policy to address financial sector problems that might have arisen because of weaknesses in its supervision instead of addressing the underlying structural problems.

To achieve its main objective the bank is given instrument independence. This huge authority to non elected institution should be accompanied by accountability and transparency. Central bank independence, central bank accountability and central bank transparensy are seen as three pillars of central bank governance (Amtenbrink, 2004). On the other side, central bank transparency is seen as one type of accountability. Central bank accountability consists of accountability by transparency and accountability by final responsibility (Eijffinger and Hoeberichts, 2000). Transparency reduces the uncertainty about the central bank's preferences and can be achieved by publication of relevant information. Although transparency makes the region of independence smaller, effective central bank independence increases with transparency.

Central bank transparency enhances the communication between central bank to the other institutions. Central bank transparency will easies goverment to synchronize their policy with central bank policy, This mechanism will enhance the policy quality. On the other side private sector also obtains advantage, Crowe and Meade (2008) conclude that enhanced transparency practices are associated with the private sector making greater use of information provided by the central bank, the public signal becomes more precise as transparency measure increases.

In the recent years there is progression in the central bank tranparency aplication. Situation and political environment influences the aplication of central bank transparency. Dincer and Eichengreen (2009) conclude that transparent monetary policy arrangements are more likely in countries with strong and stable political institutions. They are more likely in democracies, with their culture of transparency.

The relationship between macroeconomic outcomes and central bank transparency become important question. Cecchetty and Krause (2001) conclude that   central bank credibility is more precise to predict the macroeconomic performance than central bank transparency. Demertzis and Hallet (2003) conclude that central bank transparency only predicts about 50% of the variability in inflation. Although relationship between transparency and output volatility is less clear but appears to be positive rather than negative.

Contrary to that finding, some literatures show the strong relationship between central bank transparency with macroeconomic performance. Good central bank transparency leads to a lower expected rate of inflation and less stabilisation of productivity shocks (Eijffinger and Hoeberichts, 2000). Dincer and Eichengreen (2009) using these political determinants as instruments for transparency, show that more transparency monetary policy operating procedures are associated with less inflation variability though not also with less inflation persistence. Using interest rate rather than inflation Geraats et all (2006) investigate eight major central banks and find that central bank transparency lower interest rate often by around 50 basis points, although in some in instances transparency appears to have had a detrimental effect on interest rates.

Transparency in monetary policy can explain the likelihood of currency crisis, in that hipothesis Day (2008) see the opacity of central bank as an important factor. In the presence of opacity, it is found that if the debt is high, the government will devaluate, and the self-fulfilling multiple equilibria solution disappears. Furthermore, the opacity reduces the threshold of public

debt above which the government is considered as totally lacking the credibility in its pre-commitment to maintain fixed the exchange rate.

One of the main factor related with banking crisis is financial liberalisation, liberalisation that accompanied by insufficient prudential supervision of the banking sector, will resulting execive risk taking by financial internediaries and a subsequent crisis. Noy (2004) conclude that such a development is, at worse, only a medium run threat to the health of the banking sector. Also find that more immediate danger is the loss of monopoly power that liberalization typically entails.

Supervisory model seems effect to the bank integrity. Based on the data from more than 2500 firms across 37 countries Beck et all (2006) find that the traditional approach to bank supervision, which involves empowering official supervisory agencies to monitor, discipline, and influence banks directly, does not improve the integrity of bank lending. Rather, a supervisory strategy that focuses on empowering private monitoring of banks by forcing banks to disclose accurate information to the private sector tends to lower the degree to which corruption of bank officials is an obstacle to firms raising external finance.

What factors effects central bank transparency and corruption to the macroeconomic performance? It has to be seen by examine the istitutional quality and central bank transparency through the interaction of monetary and fiscal policies. Day et all (2010) found that the effects of transparency and corruption on macroeconomic performance and volatility depend on the relative importance of the marginal supply-side effects of distortionary tax and corruption, the degree of central bank conservativeness and the initial degree of opacity about central bank preferences. If the marginal effect of tax is relatively important, more opacity might induce higher level and volatility of inflation when the central bank is sufficiently conservative. Furthermore, opacity and tolerated corruption can mutually reinforce or weaken each other's effects on the level and volatility of inflation.

B. Government owned bank

Distrustnes towards government owned banks reflects the hypothesis known as the "political view of state banks" that these banks are established by politicians who use them to shore up their power by instructing them to lend to political supporters and state-owned enterprises. In return, politicians receive votes and other favours. Dinc (2005) found that government owned banks in emerging market increase their lending in election years relative to private banks, the increase in lending is about 11% of a government-owned bank's total loan portfolio or about 0.5% of the median country's GDP per election per government-owned bank. Micco et all (2005) found that state-owned banks located in developing countries tend to have lower profitability and higher costs than their private counterparts, and that the opposite is true for foreign-owned banks. Also found that differensial in performance between public and private banks is widen during election years.

On the bank performance Berger et all (2005) found that state owned banks have poor long-term performance until it privatized , maybe, much of the measured improvement is likely due to

placing nonperforming loans into residual entities. State ownership of banks also correlated with lending behavior over the business cycle, Micco and Panizza (2006) found that their lending is less responsive to macroeconomic shocks than the lending of private banks. De Nicolo and Loukoianova (2007) found significant relationship between bank concentration and bank risk of failure especially when state-owned banks have sizeable market shares.

Government ownership of banks is common in crisis countries, In many cases, government ownership may have become a vulnerability as problems at state-owned banks have been major contributors to the cost and unfolding of the crisis, with many exhibiting low asset quality prior to the onset of a crisis. For the sample, in Indonesia state-owned bank Bapindo had experienced important losses as early as in 1994, three years prior to the onset of the crisis (Enoch et al., 2001). And when the crisis erupted, the ultimate bailout cost to the government per initial unit of deposits will probably be significantly higher for state banks than for private banks in Indonesia (Fane and McLeod, 2002)

C.Corruption

Corruption commonly defined as abuse of entrusted power for private gain. The presence of corrution inflicts substantial economic costs on countries economy. Corruption reduces both the volume and efficiency of investment and economic growth (Sarkar and Hasan, 2001), substantial gains in terms of economic growth could be achieved if corrution is reduced. Same result also find by Choudary (2010) that using panel data for the Indian States and Union Territories for the years 2000-2005, he also found that corruption has more pronounced impact in states with relatively weak social and economic infrastructure. Corruption even effects to growth more than the taxation does, Fisman and Svensson (2002) Moreover, after outliers are excluded, find that a much greater negative impact of bribery on growth, while the effect of taxation is considerably reduced

High level of inflation seen as reducing welfare factor for the people. Braun and Di Tella (2000) present a simple agency model where agents can inflate the price that owners pay for goods needed to start an investment project. They also document a positive relationship between corruption and inflation variability in a sample of 75 countries over 14 years.

On the presence of interational financial integration in the corruption compromised governance. Blackburn and Puccio (2005) conclude that the bad effect of corruption is getting worse in open economy, than in the closed one. That concluding also means that financial liberalisation is good for development when governance is good, but contrary effect done when governance is bad. On the openned economy, corruption incidence could be caused by both the development and the openness of economy.

Corruption can't be seen only from demand side pint of view, from the side of corrupt official who receive bribe payment, but it is better to see the supply side. Wu (2005) argued that corporate governance is among the important factors determining the level of corruption. Using

cross county data set , the result shows that corporate governance standards can have profound impacts on the effectiveness of the global anticorruption campaign.

The effect of corruption on financial sector performance is interesting to be known. Ahmad and Ali (2007) explore the effects of corruption on financial sector performance for a sample of 38 developed and developing economies for the period 1995-2005, finding that corruption undermines the efficacy of a developed financial sector. Governments, therefore, should control corruption and to improve financial sector performance in order to increase the likelihood of economic growth and prosperity.

Corruption can also occur in lending and may then be beneficial for bank lending via bribes given by borrowers to enhance their chances of receiving loans. This assumption may be validated particularly in the presence of pro-nounced risk aversion by banks, resulting in greater reluctance on the part of banks to grant loans. Weill (2009) found that corruption reduces bank lending in both country level and bank level of estimations, bank-level estimations show that the detrimental effect of corruption is reduced when bank risk aver-sion increases, even leading at times to situations wherein corruption fosters bank lending. That finding show that corruption is hamper bank lending. In previous paper, Weill (2008) found that corruption hamper bank lending in Russia, from bank level data known that that negative role of corruption isn't influenced by the degree of bank risk aversion.

3.Data

Our dataset is for the years 1997 – 2006, and covers 13 systemic banking crisis episodes. Actually there are 19 systemic banking crisis during that period, but there is no central bank transparancy data for 4 countries, and 2 crisis rest lacks another data variables.

3.1. The Cost of The Banking Crisis

The cost of the banking crisis is explained by 2 indicators, the banking loss and the economic loss.

The banking loss is proxied by NPL at the peak of crisis, it is the peak ratio of nonperforming loans to total loans (in percent) during the years [t, t+5], where t is the starting year of the crisis.We use data from Laeven and Valencia (2008)

Economic loss is proxied by GDP loss, it is computed by extrapolating trend real GDP, based on the trend in real GDP growth up to the year preceding the crisis, and taking the sum of the differences between actual real GDP and trend real GDP expressed as a percentage of trend real GDP for the period   [t, t+3], where t is the starting year of the crisis. We use the data from Laeven and Valencia (2008).

3.2. Central Bank Transparenscy

Central bank transparency data comes from Dincer and Eichengreen (2009), that document changes in the prevalence of central bank transparency, and updating their measures through 2006. The result is 15 subindices designed to capture the political, economic, procedural, policy and operational aspects of monetary policy transparency. Political transparency denotes openness about policy objectives; economic transparency openness about data, models and forecasts; procedural transparency openness about the way decisions are taken; policy transparency openness about the policy implications; and operational transparency openness about the implementation of those decisions. The overall index thus runs from 0 to 15, we enter the central bank transparenscy index in the year crisis occured in the estimation.

The data only comprised 100 central banks, although this is the largest data transparenscy index, but some central banks index, usually from small states are missed. Because of this we can't estimate 4 episodes crisis. The data is started from 1998, meanwhile the Asian Financial crisis started at the end of 1997, on July 1997 for Thailand, Malaysia and Philiphines, August for Korea, and November for Indonesia and Japan. So for that Asian crisis, we use 1998 central bank transparency data, because of no data for 1997 central banks transparency index, and remembered that these crisis is occured at the end of 1997.

3.3. Government owned bank

Government owned bank data measured by shared total asset of government owned banks to the total asset of the banking sector a year before crisis (t-1), the data is in the percentage form. We use the data from Laeven and Valencia (2008).

3.4. Corruption

Corruption is explained by 2 indicators, they are rule of law and control of corruption at the year of crisis, both of them from aggregate and individual governance indicators 1996 – 2008 by Kaufmann et all (2009). Rule of Law index is made by capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

While Control of Corruption is made by capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

3.5. Macroeconomic Variables

To make the model better, we included several financial and macroeconomic variables that have been consistently identified in the literature as significant in the determination of banking crises. According to the character, we group the macroeconomic indicator into the monetary macroeconomic indicator, like inflation and lending interest rate indicators, and fiscally macroeconomic indicator, like the fiscal balance indicator.

Inflation is the percentage increase in the CPI index during the pre-crisis year t-1, where t denotes the starting year of the banking crisis. we use the data from laeven and Valencia (2008)

Lending interest rate is the percentage rate charged by banks on loans to prime customer during the pre crisis year t-1. we use the data from worldbank statistic data.

Fiscal balance is the ratio of the General Government balance to GDP for the pre-crisis year t-1, where t denotes the starting year of the banking crisis. We use the data from Laeven and Valencia (2008)

3.6 Another Governance Indicators

We use the regulatory quality, political stability and Voice and Accountability at the year of crisis, the data was taken from indicators aggregate and individual governance indicators 1996 – 2008 by Kaufmann et all (2009).

Voice and Accountability, capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Political Stability and Absence of Violence, cap turing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

Regulatory Quality, capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

4. Estimation Result

The writer interested in measuring the effect of central bank transparency, level of government ownership on banking sector, rule of law and control of corruption, and some monetary macroeconomics pre crisis indicators to the cost of the banking crisis. And then start the empirical analysis by investigating the relationship among central bank transparency with the several governance indicators in the crisis countries. Continued by regress the central bank transparency with the corruption indicators, rule of law and control of corruption index, the regulatory quality index is included too. To exam the relationship between the government accountability and central bank transparency, the voice and accountability index is added. And finally adding the political stability indicator by include the poltical stability and absence of violence/terorism index into the regression

The explaining result of the regression is presented in table 1. Th e writer find that corruption indicators significantly affect central bank transparency, control of corruption index significant at 5%, and rule of law index significant at 10%, the political stability indicator also affects the central bank transparency (significant at 5%). Meanwhile the voice of accountability and

regulatory quality indicator aren't sgnificantly affected. That result consistent with the argument that political environment influences the aplication of central bank transparency (Dincer and Eichengreen, 2009). Level of corruption also makes central bank transparenscy more difficult to applied. The weak relationship between central bank transparency and government voice of accountability seen that central bank is independent enough from the government influences. Overall, it is found that although central bank is independent from government, but to apply its transparency, the political environment and corruption is still strongly affected.

Next the writer move to the cost of crisis regression. The writer is interesting to test central bank transparency, government owned on banking sector, corruption and two monetary macroeconomic variables, inflation and lending interest rate in the year before crisis, hoped these independent variables can explain the cost of crisis. The cost of crisis in this model is consist of two indicators the banking loss that proxied by nonperforming loan in the peak of crisis, and economic loss that proxied by GDP loss.

The cost of crisis regression results are reported in Table 2 regression 1 and 2. the results are based on sample of 13 crisis countries.The first part of the table reports is the results with nonperforming loans at the peak of crisis as dependent variable and the second part of the table reports the results for economic loss as dependent variable. From first regression it is found that almost all independent variables strongly correlated with the banking loss indicator, inflation and lending interest rate in the year pre crisis, and control of corruption significant at 1 %, central bank transparency significant at 5 %, and rule of law and government owned on banking sector significant at 10%. From that result, can be concluded that central bank transparency, government owned on banking sector, corruption, and monetary macroeconomic indicator affect the banking loss in the crisis period. And then the writer test the same independent variables to the economic loss as independent variable. But, different with the first regression, in this regression the writer find weaker correlation, only two variables, rule of law and government owned on banking sector that has significant value.

From that result, can be concluded that the independent samples that have monetary and bankingly character, are better to predict dependent variable with same character too, like the banking loss during crisis period. But to predict economic loss, that more complex, maybe it has to add other indicators. So the writer add the fiscally indicator to make the regression better, the writer choose fiscal balance at the year pre crisis variables to proxy the fiscal macroeconomic indicator. And then adding geographic indicator, because geographic location differentiation usually followed by economic character differentiation. The writer use the dummy variable that constitute the geographic location of the crisis countries, grouping the crisis countries to the asian, latin american and european geographic location.

The results of the last regression are reported in table 2 regression 3. Almost all independent variables strongly correlated with the GDP loss as dependent variable. Central bank transparency, rule of law, fiscal ballance at the year pre crisis, and government owned on banking sector have strongest correlation, significant at 1 %. Meanwhile the geographic location, control of corruption and lending interest rate at the year pre crisis are significant at 5 %, and the last inflation

at the year pre crisis is significant at 10 %. From that result the writer concluded that central bank transparency, government owned on banking sector and monetary macroeconomic indicator can be a good predictor to the economic loss during the crisis period if the fiscally macroeconomic indicator and geographic location is entered to the model.

To test the robustness of these results, the writer run a number of other regressions. It could be that the depth of crisis is due to other factors, which may be correlated with the central bank transparency, goverment owned on banking sector, corruption and macroeconomic indicator. Obviously, many aspects, like the type of crisis and the presence of moral hazard bacause of explicit deposit guarantee can affect the speed of recovery and it is difficult to be exhaustive. The writer nevertheless did consider a large number of other explanatory variables that should address most missing variables concerns. These additional variables included the type of the crisis occured and the presence of an explicit deposit insurance scheme at the onset of the crisis. Banking crisis usually followed by currency that usually called twin crisis, and sometimes added by the sovereign debt crisis that usually called triple crisis. The writer include the type of crisis in to regression, but finding multicolinearity in the regression, so then the writer reject the type crisis indicator. An explicit deposit guarantee cause moral hazard problem, so it can worse the crisis occured. But the writer didn't find the explanatory power from application of explicit deposit guarantee on economic loss.

5.Conclusion

The writer have examined the correlation among central bank transparency and the general governance indicators. The writer then examined the impact of central bank transparency, government owned on banking sector, corruption, and some monetary macroeconomic indicator to the banking loss. And then added fiscal macroeconomic indicator and geographic location to make the explanation of the economic loss during the crisis better. The writer found that political stability, rule of law and control of corrruption have strong relationship with the central bank transparency. The writer also find that central bank transparency, government ownership on banking sector, corruption, and monetary indicator affect the deterioraton on the bank lending during the crisis. If the fiscal indicator and geographic location added to the model, it can predict the deceleration of the growth during the crisis period.

This finding shows that independency of autonom institution like central bank as monetary regulator is important but has followed by opennes, if not the closednes of central bank can worsen the economic especially during the crisis. The writer also find that state bank as the important financial institution especially in emerging economies need to be better governed, so it willn't worsen when the crisis came. Then, the corruption that always has negative effect on economic, in the banking crisis situation, also has equal effect. This analysis provides more motivation to disentangle of the institutional framework that are very important to minimize the banking and economic loss during the crisis.

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Table 1. Explaining Central Bank Transparency

This table shows country-level regressions estimated through ordinary least squares. Dependent variable is central bank transparency. The sample of countries is described in the Appendix Table 1. The independent variables are regulatory quality, political stability, voice and accountability, control of corruption and rule of law. Absolute value of t-statistics are in parentheses, *, **, and *** indicate significance at 10%, 5%, and 1% levels respectively.

	Central Bank Transparency
Constant	- 3,898
	(- 10,346)***
Regulatory Quality	- 2,010
	(- 1,674)
Political Stability	- 1,797
	(- 2,376)**
VOA	0,645
	1,133
Control of Corruption	2,746
	(2,542)**
Rule of Law	1,944
	(1,964)*
Adjusted R^2	0,753
Number of observations	13

Table 2. Explaining the Cost of Crisis

This table shows 3 country-level regressions estimated through ordinary least squares. Dependent variable is (1) Banking loss, (2) GDP loss, (3) GDP loss. The sample of countries is described in the Appendix Table 1. The independent variables are central bank transparency, government owned on banking sector, control of corruption, rule of law, inflation t-1 and lending interest rate t-1, on the regression 3 fiscal balance t-1 and geographic location added as the independent variables. Absolute value of t-statistics are in parentheses, *, **, and *** indicate significance at 10%, 5%, and 1% levels respectively.

	Regression 1	Regression 2	Regression 3
	Dependent variable	Dependent variable	Dependent variable
	Banking loss	GDP loss	GDP loss
Constant	-0,001	0,522	0,155
	(-0,006)	(2,362)	(1,368)
Central Bank Transparency	-0,067	0,095	0,083
	(-2,865)**	(1,752)	(5,167)***
Government owned on banking sector	-0,294	0,890	1,325
	(-1,960)*	(2,582)**	(7,451)***
Control of Corruption	0,345	0,310	0,256
	(4,049)***	(1,578)	(4,367)**
Rule of Law	-0,136	-0,627	-0,555
	(-1,998)*	(-4,000)***	(-11,682)***
Inflation t-1	-0,015	0,004	0,006

	(-4,455)***	(1,752)	(2,548)*
Lending interest rate t-1	0,009	-0,006	-0,005
	4,502)***	(-1,298)	(-4,188)**
Fiscal balance t-1			-0,031
			(-8,505)***
Geographic Location			0,148
			(3,564)**
Adjusted R^2	0,673	0,668	0,974
Number of Observation	13	13	13

Appendix Table 1. Country-level database

No	Country	Year of Crisis	GDP Loss (% of GDP)	NPL at the Peak (% of total lending)	Central Bank Transparancy	Government Owned on Banking Sector (% of banking asset)	Rule of Law	Control of Corruption	Inflation at t-1	Lending Interest Rate at t-1	Fiscal Balance at t-1 (% of GDP)	Regulatory Quality	Voice and Accountibility	Political Stability
1	Argentina	2001	0,43	0,2	2	0,3	-0	-0,27	-0,73	11,08	-3,61	0,31	0,27	0,04
2	Colombia	1998	0,34	0,14	2,5	0,5362	-0,8	-0,7	17,58	34,22	-3,95	0,09	-0,54	-1,62
3	Croatia	1998	0	0,11	1,5	0,0104	-0,8	-0,28	5,01	15,46	-2,01	-0,01	-0,3	0,04
4	Indonesia	1997	0,68	0,33	3	0,423	-0,3	-0,51	6,04	19,21	-1,13	0,35	-1,17	-0,85
5	Jepang	1997	0,18	0,35	8	0	1,48	1,14	0,6	2,65	-5,13	0,5	0,87	1,01
6	Korea	1997	0,5	0,35	6,5	0,2341	0,78	0,43	4,93	8,84	0,24	0,46	0,5	0,26
7	Malaysia	1997	0,5	0,3	4,5	0,0993	0,8	0,54	3,34	9,94	1,94	0,68	-0,31	0,67
8	Filipina	1997	0,6	0,19	3,5	0,2723	0,05	-0,31	7,14	14,84	-0,18	0,53	0,17	-0,42
9	Rusia	1998	0	0,4	1,5	0,3298	-0,9	-0,83	11,05	32,04	-16,96	-0,51	-0,58	-0,83

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10	Thailand	1997	0,98	0,33	2	0,1709	0,63	-0,34	4,77	13,39	2,4	0,45	0,29	0,1
11	Turkey	2000	0,05	0,28	4	0,35	-0,1	-0,24	68,79	126	-14,97	0,23	-0,48	-0,89
12	Uruguay	2002	0,29	0,36	5	0,409	0,57	0,84	3,59	48,55	-0,22	0,52	1	0,67
13	Ukraina	1998	0	0,63	2	0,1223	-0,9	-1,15	10,12	49,11	-5,56	-0,82	-0,32	-0,24

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