LEGAL QUALITY of BANK REGULATION AND SUPERVISION AND ITS DETERMINANTS: a mixed sample

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This paper has two goals. The first one is to provide measures of the legal quality of bank regulation and supervision (RS) in 29 developed and less developed countries, using the methodology of Neyapti and Dincer (2005). The second is to investigate the determinants of RS with the hypothesis that the existing institutional environment matters for the change of related institutions. The empirical evidence in the paper suggests that past financial crises and prevailing levels of FDI and financial market development do indeed affect RS beyond and above the effects of other likely factors, such as good governance and macroeconomic performance. Evidence from transition economies also supports these findings.

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1.Introduction

North (1990) argues that institutions appear and are sustained adaptively; that is, the evolution of institutions occurs due to a network of institutions that provide an accommodative environment. Implantation of some formal rules or mechanisms, on the other hand, are often not effective in countries if appropriate market structures and supporting institutional mechanisms do not exist.[1] This paper can be considered as a test of this argument with an application to financial institutions.[2] More specifically, we hypothesize that characteristics of the prevailing institutional environment have an effect on the quality of the banking laws adopted.

Neyapti and Dincer (2005) (henceforth ND) provides measures of the legal quality of bank regulation and supervision (RS) based on an extensive set of 98 criteria read from the banking laws of transition economies. The criteria is grouped under 9 main clusters of information regarding: A) capital requirements; B) lending; C) ownership structure; D) directors and managers; E) reporting/recording requirements; F) corrective action; G) supervision and; H) deposit insurance. The quantification of the above list of criteria is made with the viewpoint of evaluating the extent of limiting or eliminating the potential transaction costs or the risks in the banking sector. Summary indices, based on the unweighted averaging and principle components analysis, that we generate from this wide-ranging criteria list enable the

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[1] See, for example, Cukierman et al (2002) and Neyapti and Dincer (forthcoming, 2005) for the empirical findings on the adoption of monetary financial or institutions in transition economies.

[2] Posen (1995) argues that effective financial opposition to inflation (measured by "unity of interest in price stability and openness of political system to interest group influence) has a positive impact on central bank independence.

assessment of the relative positions of countries with regards to legal banking reforms.[3]

This paper extents the ND study in two dimensions: first, we adopt the ND methodology to measure RS in another set of 29 countries that includes both developed and less-developed countries, excluding the set of transition countries investigated in ND. Next, in addition to using deposit insurance (DI) as a component of RS as was the case in ND, here we also form a index of RS excluding the DI component, as we think that DI deserves a separate attention due to the recent emphasis given to it in the literature (see, Demirguc-Kunt and Huizinga 2003). The resulting indices of RS also enables us to compare the legal quality of banking sector reforms in transition countries with that in a mixed sample of developing and developed countries. Secondly, as different issue from ND, in this paper we investigate the determinants of RS. More specifically, we analyze the effects of prevailing financial market development, foreign direct investment (FDI), financial crises and governance on the level of RS.   The choice of these variables as possible determinants of RS can be explained as follows. The use of crises is due to the need for prudent bank regulation and supervision that became particularly evident after the recent Asian financial crises, leading to increasing emphasis given to Basle guidelines in the banking sectors of many countries. Hence, we hypothesize that former experience of financial crises also result in the lesson of adopting higher quality RS. We also hypothesize that both developed financial markets and good governance provide appropriate ground for institutionalizing prudent bank regulation and

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[3] Using these measures, ND show that, controlling for other relevant factors, RS has had positive influence on the growth rates of transition economies.

supervision and thus make it the more likely to adopt high legal quality of bank regulation and supervision.

FDI flows are often directed to countries that have favourable market conditions that also reflect the potential of a country for institutional reforms, including those geared to reduce adverse selection and moral hazard problems in the banking system. Hence, the inclusion of FDI in the list of potential determinants of RS follows the argument that FDI flows indicate the pre existence of the necessary investment infrastructure that, as a part of institutional network, we consider would also be highly relevant for the establishment of good quality of RS. Moreover, the reason that we consider EU membership in this list is that it is generally accepted as a favorable initial condition that may also lead countries to adopt new legal frameworks (see, for example, Cukeirman et al., 2002).

To sum up, our hypotheses are motivated with the view that adoption of better quality of bank regulation and supervision can be partially explained by either crises that generate encompassing problems and thus significant lessons for economic better management, as in the aftermath of the Asian financial crises; and the presence developed financial markets or flow of FDI that are associated with supporting institutional infrastructure. We test these hypotheses both for the sample of 29 developed and less developed countries, for which new measurements of RS are presented in this paper, and for the 23 transition economies covered in ND. The use of two different samples also serves the purpose of a robustness test for our findings.

The rest of the paper is organized as follows.   Section 2 reports the new data set. Section 3 explains the methodology and reports the empirical results. Section 4 concludes.

2. Data and Methodology

The methodology to evaluate RS follows directly that of ND (2004) and is based on the codings of the letter of actual banking laws. The only difference in the methodology from that of ND is that, in this paper, we separate the DI codings as a different variable (DI). Our measure of DI emphasizes *restrictiveness* cum *transparency* cum *coverage* aspects as for all the other aspects of RS. This is as an alternative measurement of DI to that provided by Demirguc-Kunt and Huizinga (DH, 2003).[4] To show the inherent consistency in our codings, via the reinforcing effect of such attributes of DI for the rest of RS, we alternatively use RS both including (RSwDI) and excluding DI (RSwoDI) in our analysis.

Hence, for both types of RS, we calculate three indices, namely, the unweighted average, and two types of principle components that are explained in detail in ND[5]. The codings of RS are such that if a country's banking law is coded as 1, it satisfies the Basle Guidelines and it also covers additional attributes of banking regulation and supervision that are based on the letter of the banking laws.

Table 1 below reports the list of countries and the dates of the banking laws employed in this study, along with the unweighted indices of RSwDI and RSwoDI corresponding to each. For the countries studied, we observe only 4 changes in the

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[4] DH interpret the variable based on the various properties of DI as the "Moral Hazard Index" (MHI). The authors argue that the adoption of deposit scheme involves the trade-off between increased depositor safety and reduced market discipline on banks. Here, however, we consider the deposit insurance as contributing to the quality of bank regulation and supervision. Although our index and DH index are similar to each other, there is a main difference on the management of the deposit insurance fund. We support that private management increases the quality whereas, in DH index, official management is preferred. Furthermore, the coverage of our index is wider. Better coordination between the management of DI and the CB, better coordination between the management of DI and bank supervisor, the quicker payments to depositors, and full coverage during crises are the criteria that increase the quality of deposit insurance in our index.

[5] the two types of principle components (PC) are formed as follows: i), by calculating PCs based on all of the 98 criteria, ii) first by calculating the PCs for each of the 9 sub-criteria groups, and then calculating the PCs based on the resulting number of PCs calculated in the first step.

banking laws, namely for Brazil, Indonesia, UK and Turkey, which increase the

number of (panel) observations to 33.

Table 1. Unweighted Indices of RS

Country	Year of Enactment of the Banking Law	RSwDI	RSwoDI
Developed Countries		*0.36*	*0.35*
Germany	1993	0.59	0.58
Portugal	1992	0.51	0.49
Luxemburg	1993	0.41	0.37
Denmark	1996	0.39	0.44
Finland	1997	0.37	0.34
Netherlands	1992	0.34	0.38
England (2)	1987	0.32	0.28
Belgium	1993	0.31	0.29
France	1984	0.31	0.33
Greece	1993	0.28	0.31
Spain	1988	0.28	0.23
England (1)	1979	0.27	0.23
Switzerland	1934	0.24	0.28
Less-developed Countries		*0.28*	*0.29*
Turkey (2)	1999	0.49	0.48
Hong Kong	1997	0.39	0.45
Turkey (1)	1985	0.38	0.37
Kenya	1995	0.36	0.36
Egypt	1957	0.35	0.37
Singapore	1994	0.35	0.4
Lebanon	1963	0.33	0.29
Philippines	1948	0.31	0.26
Malaysia	1989	0.29	0.33
Pakistan	1962	0.27	0.31
Sri Lanka	1988	0.27	0.31
Argentina	1977	0.24	0.18
Korea	1998	0.23	0.26
South Africa	1990	0.23	0.26
Kuwait	1968	0.22	0.26
Brazil (2)	1974	0.21	0.24
Tunisia	1967	0.2	0.23
Brazil (1)	1964	0.17	0.19
Indonesia (1)	1967	0.13	0.15
Indonesia (2)	1992	0.13	0.14

Inspecting RS values reported in Table 1 reveals some interesting points. That

Germany receives the highest ranking (RS) may suggest that it follows the Basle

Guidelines more closely than the rest of the countries in the sample. Following

Germany, ranks the Portuguese law dated 1992 and the Turkish law dated 1999. We

also observe that all the laws that are later revised (namely of Turkey, England and Brazil) reflect higher values for RS than the earlier ones, except for a slight deterioration in the codings of Indonesia from 1967 to 1992.[6]

The sample in Table 1 yields 0.31 for the average value for the RSwDI index, which is much higher than the average of 0.19 based on 26 observations obtained for RS (the comparable index) the transition countries. Also, Table1 shows that developed countries, on average, has a higher RS than less developed countries, where the difference is especially notable with regards to RSwDI. When focused on 1990s only, the whole sample also yields an average of 0.36, which is the same as the developed countries' average. Interestingly, the only 3 countries in the current sample that have had less than the average of 0.36 RSwDI in the 1990s, namely South Africa, Korea and Indonesia, all have had financial crises in the 1990s[7]. We also observe that the correlation between RswDI and RSwoDI is very high: 0.94.

Appendix 1 reports the principle components of both RSwDI and RSwoDI. In addition, Appendix 2 reports the correlations between the principle components and the unweighted indices of RSwDI and RSwoDI. That the correlations between both types of RS and their (first) principle components are very high (more than 74%) justifies that we only employ the unweighted averages method in the rest of the paper. Moreover, the relationship between the 9 main components of RS and the main principle components, constructed by various methods[8] do not indicate any specific clustering of the codings such that we could classify the individual principle components in any specific way. This and our concern about degrees of freedom are

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[6] UK has revised its banking law also in 2000
[7] see Caprio and Klingebiel 1999.
[8] The two explained above which are both formed based on correlation and covariance methods built-in the E-Views econometrics package.

the other reasons for using the unweighted indices of RS to represent all of its components.

Table 2 lists the average values of the 9 components of RS across transition countries and our current mixed sample. Developed countries appear to have especially better quality with regards to the provisions about ownership structure; directors and managers; reporting, recording requirements and supervision. On the other hand, less-developed countries on average appear to have stricter provisions for deposit insurance and corrective action. The table reveals that legal provisions regarding DI are much less restrictive in transition economies than in both developed and less developed countries. This is explainable on the grounds that greater coverage and less inhibited DI was a need during the reform period of transition economies, as would be the case in any crises period. Moreover, it appears that legal RS in transition economies has significantly lagged behind developed countries with regards to any group of criteria.

Table 2. Comparison of 9 components between different samples

	Developed	Less-developed	Transition
A. Capital Requirements	0.41	0.41	0.37
B. Lending	0.06	0.18	0.06
C. Ownership Structure	0.25	0.13	0.13
D. Directors and Managers	0.23	0.19	0.13
E. Reporting/Recording Requirements	0.48	0.35	0.37
F. Corrective Action	0.49	0.57	0.32
G. Supervision	0.46	0.28	0.16
H. Deposit Insurance	0.68	0.84	0.10

3. What Determines RS?

In this section, we test the hypothesis that the prevailing circumstances of the economy when the banking law was enacted, namely, banking crises; indicators of FMD; governance; FDI flows; and the EU membership, all affect the quality of RS.

The analysis in the paper can be characterized as an *event study* based on data for 29 countries, where we look at 10 year averages of the relevant varia bles before the date of changes in banking laws. All the estimations below are carried out by robust-errors technique that corrects for heterogeneity across countries.

 For the indicators of financial market development (FMD), we use the share of credit going to the private sector in GDP (CRprvtGDP), the size of the banking sector as compared to GDP (CRGDP) and M2 to GDP ratio (M2GDP). We also employ FDI to GDP ratio (FDIGDP) so as to account for the presence of initial conditions conducive to investment. All the data, including various measures of governance[9], are obtained from the World Bank web-sites. Data on financial crises (CRISES) are based on Caprio and Klingebiel (1999), which we expressed as percentage of the time period that coincided with crises. Similarly, we express EU membership as percentage of the time period considered that covers the membership period. The data are reported in Appendix 3.

In what follows, we sequentially investigate the effect of each of these variables on RS (measured by RSwDI). The first three columns of Table 3a shows the relationship between RS and the values of the three alternative measures of FMD (CRGDP; CRprvtGDP and M2GDP) besides its relationship with EU membership in the period preceding the enactment of banking laws. In all these regressions, we observe that FMD as well as EU membership matters for the quality of RS.

Next, we consider the possibility that countries that have gone through significant banking crises decide to adopt, or are imposed to adopt by donor countries or institutions that finance recovery, higher quality RS. To test this hypothesis, we add the variable CRISES, which measures for the ratio of the period covered in this

study that was in crises, in all these three regressions. The results indicate that not

only that previous crises are significant in affecting strong legal bank reforms, but

also its inclusion significantly improves the overall goodness of fit of the regressions.

Table 3a. Determinants of RSwDI

	I	II	III	IV	V	VI
Constant	0.23	0.18	0.23	0.20	0.18	0.18
	(8.10)***	(6.91)***	(6.82)***	(10.41)***	(8.19)***	(10.26)***
EU Mem.	0.10	0.07	0.10	0.12	0.09	0.12
	(2.77)***	(1.66)*	(5.36)***	(3.47)***	(2.52)**	(10.84)***
CRISES				0.17	0.12	0.25
				(2.64)***	(2.52)**	(6.45)***
CRprvtGDP	0.00			0.00		
	(3.26)***			(4.01)***		
CRGDP		0.00			0.00	
		(4.20)***			(5.00)***	
M2GDP			0.00			0.00
			(3.50)***			(5.98)***
D. Freedom	26	25	14	25	24	13
R-bar2	0.29	0.42	0.14	0.45	0.49	0.75

Notes: In parentheses under each coefficient are the t-ratios.
    ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, respectively

Table 3b shows the same regressions as in Table 3a, with the exception that

the dependent variable is RSwoDI. As was indicated earlier, a comparison of the

goodness of fits of the last 3 regressions in Tables 3a and 3b indicate that the

inclusion of DI into the measurement of RS may indeed be providing a reinforcing

effect when CRISES is taken into account. Having separately observed the positive

effect of CRISES on DI[10], we can argue that, unlike in Table 3a, that CRISES is not

significant in Table 3b reveals that the positive linkage between DI offered during

crises may be captured in the positive coefficient of CRISES in Table 3a. The rest of

the results are very similar across the two tables.

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[9] Governance measures of political stability (POLSTAB), corruption control (CORR), government
efficiency (GOVEFF) and rule of law (RULE) are all obtained from Kaufmann et al. (2003)

Table 3b. Determinants of RSwoDI

	I	II	III	IV	V	VI
Constant	0.24***	0.19***	0.23***	0.22***	0.19***	0.19***
	(8.48)	(6.86)	(7.42)	(9.59)	(7.23)	(9.68)
EU Mem.	0.08**	0.05	0.12***	0.09***	0.06	0.15***
	(2.07)	(1.14)	(7.11)	(2.48)	(1.43)	(10.57)
CRISES				0.12	0.06	0.22***
				(1.54)	(0.96)	(5.99)
CRprvtGDP	0.00***			0.01***		
	(3.63)			(3.81)		
CRGDP		0.00***			0.00***	
		(4.69)			(4.74)	
M2GDP			0.00***			0.00***
			(4.42)			(5.92)
D. Freedom	26	25	14	25	24	13
R-bar^2	0.29	0.41	0.32	0.36	0.40	0.73

Notes: In parentheses under each coefficient are the t-ratios.

   ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, respectively

In Table 4, we explore the impact of FDIGDP on RSwDI. However, we have to note that the lack of information on FDI (see Appendix 3) limits the number of observations in a substantial manner. Hence, we analyze the effect of FDI on RS separate than that of FMD. In addition to data limitations, we justify this separation due to the very high correlations between FDIGDP and the two FMD measures, namely M2GDP and CRprvtGDP (see Appendix 4).

Table 4 indicates that, similar to FMD, FDI also has significant positive impact on RS, along with the EU membership and CRISES variables. In the first column, we thus test the hypothesis that favorable initial conditions, such as EU membership and FDI flows into a country may be conducive to the adoption of greater quality RS. Indeed, we observe that both EU membership and FDIGDP are significantly positive at 5% levels for RSwoDI, though FDIGDP is not significant for RSwDI. Columns 2 and 4 of Table 4 report the results with the addition of CRISES

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[10] We regressed DI on FDIGDP, CRISES and EU membership and observed that the first is negatively

variable, which notably improve the estimation results. The findings indicate that indeed the presence of crises significantly contribute to the quality of RS in the decade that follows. Moreover, after controlling for CRISES, FDIGDP also becomes significant for RSwDI.

Table 4. Determinants of RS

	RSwDI		RSwoDI	
	I	II	I	II
Constant	0.29***	0.24***	0.28***	0.24***
	(9.82)	(10.06)	(9.56)	(9.33)
EU Mem.	0.10*	0.14***	0.10**	0.14***
	(1.90)	(2.89)	(1.98)	(2.75)
CRISES		0.16***		0.13*
		(2.63)		(1.80)
FDIGDP	0.00	0.01**	0.01**	0.01***
	(0.62)	(2.41)	(1.96)	(3.51)
D. Freedom	18	17	18	17
R-bar^2	0.08	0.25	0.10	0.20

Notes: In parentheses under each coefficient are the t-ratios.
   ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, respectively

We also added measures of governance (POLINS, GOVEFF, RULE and CORR) into our determinants list for RS, along with both FMD variables and FDIGDP, and observed that neither of these measures improves the results and their coefficients are insignificant.[11] This result indicates that the variables reported in Tables 3 and 4 already capture the conditions under which good governance operates; indeed, excluding some of the control variables lead to significant coefficients for the governance variables supporting this argument.

Finally, we added macroeconomic fundamentals, namely, inflation, GDP growth and openness to the list of explanatory variables (not reported)[12]. However,

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and the second is positively significant for DI.
[11] We observe in Appendix 4 all governance indicators are highly correlated with EU membership and especially with the FMD indicators: M2 to GDP and private credit to GDP ratios.
[12] These results are available from the author upon request.

we note that while the first two variables are highly correlated (at around 50%) with both EU membership and FDIGDP, the last one is very highly (over 90%) correlated with FDIGDP. Hence, the resulting regression model reduces the significance of former results and the added variables are themselves found insignificant, due possibly to high multicolinearity among the explanatory variables.

Transition countries:

We compare the results obtained here with those in transition economies that were reported in ND. Due to data limitations in transition set, instead of financial market development indicators and FDI, we instead use cumulative liberalization index (CLI)[13].

The regression results reported in Table 5 indicate that, as in the current data set, presence of financial crises prior to the enactment of banking laws as well as the median cumulative liberalization index prior to the enactment of banking laws are positively affecting the quality of RS in transition economies. Both of these results closely parallel the above results.

Table 5. Determinants of RS in Transition Economies

	I	II
Constant	0.11***	-0.00
	(4.48)	(-0.05)
Initial CLI	0.03***	0.02**
	(3.10)	(2.40)
Initial GDP		0.02
		(1.28)
Lagged Crises	0.07**	0.07**
	(2.18)	(2.22)
R-bar^2	0.29	0.29

Notes: In parentheses under each coefficient are the t-ratios.
   ***, ** and * indicate statistical significance at 1%, 5% and 10% levels, respectively

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[13] De Melo et al (1996) measure CLI based on the indices of internal and external price liberalization and other market reforms including privatization, which are all reported cumulatively over time.

4. Conclusions

Following the methodology of Neyapti and Dincer (2004), this study presents new evidence on the legal quality of bank regulation and supervision in a new set of countries that involve developed and less developed countries, excluding transition economies. The new evidence shows that, on average, RS in developed countries tend to be greater than that in both less developed countries and transition economies.

In addition, panel analysis reveals that prevailing financial crises, financial market development, FDI and EU membership all positively affect RS. We find further support for these findings in transition country sample as well.

The policy implication emerging from this study is that quality of RS may increase with the lessons derived from crises, but improving financial markets and policies that also encourage FDI also appear to contribute to the legal quality of RS that would, in turn, contribute to sustaining conditions for institutional and economic development.

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Appendix 1. Unweighted Indices of Regulation and Indices

Banking Laws	RSwDI				RSwoDI		
	Pa1	Pa2	Pb1	Pb2	Pa1	Pa2	Pb1
Argentina-1977	-1.22	1.13	-0.83	-0.48	-1.31	-0.09	-1.28
Belgium-1993	0.42	0.75	-1.69	1.28	0.21	1.81	0.27
Brazil-1964	-2.73	-0.68	-3.84	-1.21	-2.56	-0.38	-2.56
Brazil-1974	-2.34	-0.71	-2.18	-0.99	-2.16	-0.52	-2.16
Denmark-1996	1.59	-1.24	1.16	0.88	1.82	0.87	1.84
Egypt-1957	0.74	-0.87	1.05	-1.71	0.83	-0.75	0.79
England-1979	-1.62	2.32	-1.16	1.96	-1.99	0.77	-1.96
England-1987	-1.57	2.41	-2.12	1.59	-2.00	1.08	-2.02
Finland-1997	2.15	0.77	2.33	1.27	1.81	-0.42	1.80
France-1984	0.72	-1.18	-0.86	0.26	0.86	1.03	0.87
Germany-1993	3.14	1.62	3.06	3.29	2.73	0.77	2.65
Greece-1993	-0.91	-0.02	-1.05	2.36	-0.95	1.36	-0.97
Hong Kong-1997	1.39	-1.31	3.23	-2.35	1.66	-1.66	1.60
Indonesia-1967	-1.74	-0.56	-1.69	0.41	-1.61	-0.15	-1.52
Indonesia-1992	-1.69	-0.53	-1.07	-0.19	-1.60	-0.53	-1.50
Kenya-1995	0.84	-0.28	1.62	-0.57	0.90	-1.18	0.94
Korea-1998	-1.53	-1.07	-0.55	-2.21	-1.30	-1.93	-1.29
Kuwait-1968	-0.73	-1.03	-0.79	-0.88	-0.51	-0.67	-0.51
Lebanon-1963	-0.74	0.97	-0.63	-0.60	-0.86	-1.65	-0.82
Luxemburg-1993	0.71	2.36	0.34	2.69	0.24	2.17	0.16
Malaysia-1989	0.89	-1.67	0.81	-1.69	1.23	-0.25	1.20
Netherlands-1992	1.15	-1.05	-0.03	0.75	1.28	2.03	1.26
Pakistan-1962	0.48	-1.52	0.94	-0.01	0.78	-0.03	0.81
Philippines-1948	-1.53	2.39	0.35	2.57	-1.90	0.08	-1.95
Portugal-1992	2.13	1.61	1.08	0.32	1.89	-0.03	1.85
Singapore-1994	0.91	-1.68	0.55	-2.52	1.25	-1.06	1.26
South Africa-1990	-0.68	-0.92	-1.41	-0.63	-0.48	0.28	-0.56
Spain-1988	-0.40	1.96	-0.87	1.21	-0.74	1.20	-0.69
Sri Lanka-1988	-0.09	-1.26	-0.66	-1.56	0.18	0.71	0.17
Switzerland-1934	0.48	-1.27	-0.06	-0.70	0.73	0.30	0.74
Tunisia-1967	-0.91	-1.36	-0.76	-0.98	-0.63	0.02	-0.56
Turkey-1985	0.53	0.52	1.45	-1.19	0.40	-1.95	0.43
Turkey-1999	2.13	1.39	4.27	-0.35	1.75	-1.22	1.70

<u>Appendix 2a: Correlations among RSwoDI and its principle components.</u>

	Pa1	Pa2	Pb1
A. Capital Requirements	0.4	-0.3	0.4*
B. Lending	0.3	-0.7*	0.3
C. Ownership Structure	0.6*	0.2	0.6*
D. Directors and Managers	0.1	0.2	0.1
E. Reporting/Recording Requirements	0.8*	0.3	0.8*
F. Corrective Action	0.4	-0.2	0.4
G. Supervision	0.8*	0.4*	0.8*
RSwoDI	0.9*	0.0	0.8*

Note: * Indicates significance at 1 percent level.

<u>Appendix 2b: Correlations among RSwDI and its principle components.</u>

	Pa1	Pa2	Pb1	Pb2
A. Capital Requirements	0.5*	0.1	0.6*	0.1
B. Lending	0.3	0.0	0.5*	-0.3
C. Ownership Structure	0.7*	0.1	0.6*	0.2
D. Directors and Managers	0.1	0.3	0.0	0.1
E. Reporting/Recording Requirements	0.8*	-0.1	0.5*	0.1
F. Corrective Action	0.4	-0.1	0.6*	-0.1
G. Supervision	0.8*	0.0	0.4	0.2
H. Deposit Insurance	0.2	0.9*	0.2	0.6*
RSwDI	0.8	0.4	0.8	0.3

Note: * Indicates significance at 1 percent level.

Appendix 3. Data used in the study

Banking Laws	CRprvt GDP	CRGDP	M2GDP	FDIGDP	Rule of Law	Corr.	Polins	Govn. Eff.
Argentina-1977	16.69	24.96	17.38	0.05	0.22	-0.36	0.55	0.18
Belgium-1993	7.46	83.20	-	1.31	1.34	1.05	0.87	1.29
Brazil-1964	16.83	26.42	17.28	-	-0.26	-0.02	0.47	-0.27
Brazil-1974	28.58	33.43	16.38	1.22	-0.26	-0.02	0.47	-0.27
Denmark-1996	42.01	59.61	57.76	1.15	1.71	2.09	1.34	1.62
Egypt-1957	-	-	-	-	0.21	-0.16	0.21	0.27
England-1979	28.46	47.52	-	1.42	1.61	1.86	1.1	1.77
England-1987	45.58	54.25	-	1.28	1.61	1.86	1.1	1.77
Finland-1997	76.04	75.74	-	0.76	1.83	2.25	1.61	1.67
France-1984	90.54	103.23	-	0.41	1.22	1.15	1.04	1.24
Germany-1993	86.17	100.97	-	0.16	1.57	1.38	1.21	1.67
Greece-1993	37.78	94.19	-	1.16	0.62	0.73	0.79	0.65
Hong Kong-1997	152.92	145.08	162.40	-	1.37	1.16	1.13	1.1
Indonesia-1967	3.36	29.88	4.02	-	-0.87	-1.01	-1.56	-0.5
Indonesia-1992	29.18	28.17	26.56	0.64	-0.87	-1.01	-1.56	-0.5
Kenya-1995	32.04	52.27	31.06	0.32	-1.21	-1.11	-0.83	-0.76
Korea-1998	68.83	-	-	0.49	0.55	0.37	0.5	0.44
Kuwait-1968	9.74	4.04	29.76	-	1.1	0.59	0.64	0.13
Lebanon-1963	-	-	-	-	-0.05	-0.63	-0.55	-0.02
Luxemburg-1993	108.86	109.36	-	-	1.86	1.78	1.48	1.86
Malaysia-1989	72.13	101.55	58.38	3.18	0.34	0.13	0.31	0.53
Netherlands-1992	80.82	112.34	-	1.93	1.67	2.09	1.48	1.84
Pakistan-1962	13.02	36.43	36.47	-	-0.74	-0.79	-0.39	-0.48
Philippines-1948	-	-	-	-	-0.49	-0.49	-0.21	0.03
Portugal-1992	61.86	87.37	-	1.80	0.94	1.21	1.41	0.91
Singapore-1994	99.11	80.73	81.70	10.51	1.85	2.13	1.44	2.16
South Africa-1990	71.37	91.83	50.40	-	-0.05	0.35	0.07	0.25
Spain-1988	66.72	91.82	na	1.12	1.12	1.45	1.01	1.57
Sri Lanka-1988	20.10	43.16	28.48	0.86	-0.31	0	-1.63	-0.44
Switzerland-1934	-	-	-	-	1.91	1.91	1.61	1.93
Tunisia-1967	28.42	40.88	30.07	-	0.81	0.86	0.82	1.3
Turkey-1985	17.54	43.76	18.77	0.09	-0.16	-0.48	-0.75	-0.15
Turkey-1999	19.90	121.42	25.42	0.46	-0.16	-0.48	-0.75	-0.15

Appendix 4. Correlations Among Variables

	FDIGDP	CRISES	EU mem	M2GDP	CRprvGDP	CRGDP	POLINS	GOVEFF	CORR	RULE	GDP	Inf	Openness
FDIGDP	1.00												
CRISES	-0.30	1.00											
DEU	-0.08	-0.20	1.00										
M2GDP	0.84	-0.29	0.34	1.00									
CRprvtGDP	0.92	-0.33	0.06	0.93	1.00								
CRGDP	0.35	0.46	0.01	0.49	0.44	1.00							
POLINS	0.56	-0.37	0.47	0.61	0.60	0.18	1.00						
GOVEFF	0.76	-0.40	0.51	0.86	0.76	0.33	0.84	1.00					
CORR	0.68	-0.45	0.62	0.80	0.66	0.25	0.79	0.95	1.00				
RULE	0.66	-0.42	0.57	0.77	0.65	0.30	0.84	0.98	0.96	1.00			
GDP	0.66	-0.33	-0.59	0.37	0.59	0.08	-0.06	0.15	0.02	0.02	1.00		
Inf	-0.82	0.52	-0.42	-0.97	-0.90	-0.28	-0.70	-0.87	-0.86	-0.79	-0.39	1.00	
Openness	0.99	-0.28	-0.08	0.86	0.90	0.33	0.54	0.73	0.67	0.62	0.64	-0.81	1.00