

Appendices

Appendix A: Descriptive statistics of regression analysis

	<i>Mean</i>	<i>Std. Dev.</i>	<i>Median</i>	<i>Minimum</i>	<i>Maximum</i>
GDP (x 1,000)	636.000.000	78.200.000	639.000.000	523.000.000	759.000.000
Development	0,02	0,02	0,01	0	0,07
Herfindahl-Hirschman Index	853,29	31,41	860	797	894
Inflation	0,03	0,03	0,03	-0,02	0,06
Net Income	85.405.214	460.000.000	15.013.476	-2.630.000.000	2.410.000.000
Total Capital (x 1,000)	2.110.000	1.980.000	1.420.000	0	7.850.000
Total Assets (x 1,000)	19.900.000	18.400.000	11.900.000	0	73.900.000
Unemployment Rate	0,07	0	0,07	0,06	0,07
ROE	-0,01	0,09	-0,03	-0,15	0,18
ROA	0	0,01	0	-0,02	0,02

Source: Author's calculations based on data extracted from annual bank reports

Appendix B: Distribution of dependent and independent variables

<i>Variable</i>	<i>Coefficient</i>	<i>90% CI - Low</i>	<i>90% CI - High</i>	<i>95% CI - Low</i>	<i>95% CI - High</i>	<i>99% CI - Low</i>	<i>99% CI - High</i>
GDP	9.61E-14	-7.03E-13	8.95E-13	-8.59E-13	1.05E-12	-1.17E-12	1.36E-12
Development	1.903244	-1.28325	5.089740	-1.90531	5.711794	-3.13988	6.946368
Herfindahl-Hirschman Index	-0.00011	-0.00077	0.000560	-0.0009	0.000690	-0.00116	0.000948
Inflation	-0.15209	-2.46576	2.161589	-2.91743	2.613254	-3.81384	3.509663
Net Income	-1.67E-12	-4.68E-11	4.35E-11	-5.56E-11	5.23E-11	-7.31E-11	6.98E-11
Total Capital	1.88E-11	-3.15E-11	6.92E-11	-4.14E-11	7.90E-11	-6.09E-11	9.85E-11
Total Assets	-1.98E-12	-7.24E-12	3.28E-12	-8.27E-12	4.31E-12	-1.03E-11	6.35E-12
Unemployment Rate	1.431755	-6.72622	9.589733	-8.31879	11.18230	-11.4795	14.34302
ROE	1.345580	0.351304	2.339856	0.157205	2.533954	-0.22802	2.919176
ROA	-11.0064	-20.1765	-1.83628	-21.9667	-0.04613	-25.5195	3.506732
C	0.503222	-0.70234	1.708784	-0.93769	1.944129	-1.40477	2.411211

Source: Author's calculations based on data extracted from annual bank reports

Appendix C: Analysis of covariance

	Covariance	Correlation	t-Statistic	Probability	Level of Indebtedness	GDP Development	Herfindahl-Hirschman Index	Inflation	Net Income	Total Capital	Total Assets	Unemployment Rate	ROE	ROA
Observations														
Level of Indebtedness	0.010168	1.000000	-----	-----	105									
GDP	1.51E+08	6.06E+21	0.019229	1.000000	0.195192	-----								
	0.8456	-----			105	105								
Development	0.000561	-	2.03E+08	0.000279										
	0.332980	-	0.156469	1.000000										
	3.583896	-	1.607794	-----										
	0.0005	0.1109	-----		105	105	105							
Herfindahl-Hirschman Index	-0.137143	-	5.43E+10	0.007278			977.0612							
	-0.043511	-		0.013945			1.000000							

		0.022314						
	-0.442008	-	0.141544	-----				
	0.6594	0.226519	0.8877	-----				
	105	105	105	105				
Inflation	-4.33E-05	-	7.04E-05	-0.012857	0.000775			
		2.09E+09						
	-0.015438	-	0.151497	-0.014777	1.000000			
		0.965543						
	-0.156700	-	1.555480	-0.149982	-----			
		37.65405						
	0.8758	0.0000	0.1229	0.8811	-----			
	105	105	105	105	105			
Net Income	6255902.3	3.33E+18	1449196.	3.43E+09	1140239.	-	2.10E+17	
	0.135545	0.093551	0.189626	0.239394	0.089493	-	1.000000	
	1.388444	0.953624	1.960052	2.502347	0.911917	-	-----	
	0.1680	0.3425	0.0527	0.0139	0.3639	-	-----	
	105	105	105	105	105	105	105	
Total Capital	663732245.1	2.12E+18	30654015	1.88E+09	1618864.	-	2.85E+17	3.90E+18
	0.333281	0.033306	0.929570	0.030400	0.029446	-	0.315265	1.000000
	3.587545	0.338211	25.59130	0.308668	0.298977	-	3.371522	-----
	0.0005	0.7359	0.0000	0.7582	0.7656	0.0011	-----	
	105	105	105	105	105	105	105	
Total Assets	5.98E+086.2	6E+19	2.84E+08	3.34E+09	22408961	-	2.24E+18	3.56E+193.36E+20

	0.323662	0.043883	0.927541	0.005821	0.043904	0.266539	0.982763	1.000000		
	3.471677	0.445795	25.18867	0.059076	0.446009	2.806604	53.95097	-----		
	0.0008	0.6567	0.0000	0.9530	0.6565	0.0060	0.0000	-----		
	105	105	105	105	105	105	105	105		
Unemployment Rate	6.67E-06	2.34E+08	7.83E-06	-0.047000	8.70E-05	191206.5	242668.5	2177636.	1.57E-05	
	0.016678	0.759460	0.118277	-0.379306	0.788426	0.105381	0.030995	0.029959	1.000000	
	0.169289	11.84786	1.208865	-4.160439	13.00809	1.075485	0.314720	0.304191	-----	
	0.8659	0.0000	0.2295	0.0001	0.0000	0.2847	0.7536	0.7616	-----	
	105	105	105	105	105	105	105	105	105	
ROE	0.002465	5.45E-08	0.000709	3.17E-18	4.13E-21	18537868880830458.61E+08			-2.58E-21	0.007913
	0.274780	7.87E-18	0.477061	1.14E-18	1.67E-18	0.455284	0.501349	0.527616	-7.32E-18	1.000000
	2.900360	7.99E-17	5.508944	1.16E-17	1.69E-17	5.189701	5.880573	6.303496	-7.43E-17	-----
	0.0046	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	-----
	105	105	105	105	105	105	105	105	105	105
ROA	0.000244	1.14E-09	8.33E-05	-1.12E-18	2.07E-21	1989030.102868441.01E+08			-2.58E-22	0.008599.64E-05
	0.246879	1.48E-18	0.507793	-3.66E-18	7.55E-18	0.442516	0.530389	0.558598	-6.63E-18	0.9835121.000000
	2.585580	1.51E-17	5.982198	-3.71E-17	7.67E-17	5.008076	6.349554	6.834922	-6.73E-17	55.19545
	0.0111	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000
	105	105	105	105	105	105	105	105	105	105

Source: Author's calculations based on data extracted from annual bank reports

Appendix D: Correlation matrix of the variables used in the regression equation

	Level of Indepted- ness	GDP	Develop ment	Herfinda hl- Hirschma n Index	Inflation	Net Income	Total Capital	Total Assets	Unemplo yment Rate	ROE	ROA
Level of Indeptedness	1										
GDP	0.019229	1									
Development	0.33298	-0.15647	1								
Herfindahl- Hirschman Index	-0.04351	-0.02231	0.013945	1							
Inflation	-0.01544	-0.96554	0.151497	-0.01478	1						
Net Income	0.135545	0.093551	0.189626	0.239394	-0.08949	1					
Total Capital	0.333281	0.033306	0.92957	0.0304	-0.02945	0.315265	1				
Total Assets	0.323662	0.043883	0.927541	0.005821	-0.0439	0.266539	0.982763	1			
Unemployment Rate	0.016678	-0.75946	0.118277	-0.37931	0.788426	-0.10538	-0.031	-0.02996	1		
ROE	0.27478	7.87E-18	0.477061	1.14E-18	1.67E-18	0.455284	0.501349	0.527616	-7.32E-18	1	
ROA	0.246879	1.48E-18	0.507793	-3.66E-18	7.55E-18	0.442516	0.530389	0.558598	-6.63E-18	0.983512	1

Source: Author's calculations based on data extracted from annual bank reports

Appendix E: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause GDP	0	2.3E-76 0.00000	0.0000 0.0000
DEVELOPMENT does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause DEVELOPMENT	1	0.00000 6.E-222	0.0000 0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	589824	4.E+180 3.0E-67	0.0000 0.0000
INFLATION does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause INFLATION	26214400	0.00000 7.E-304	0.0000 0.0000
NET_INCOME does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause NET_INCOME	570490880	5.E-299 1.E+214	0.0000 0.0000
TOTAL_CAPITAL does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause TOTAL_CAPITAL	2035548268	6.E+247 9.E+223	0.0000 0.0000
TOTAL_ASSETS does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause TOTAL_ASSETS	1699900783	0.00000 0.00000	0.0000 0.0000
UNEMPLOYMENT_RATE does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause UNEMPLOYMENT_RATE	31090	7.E-304 7.0E+15	0.0000 0.0000
_ROE does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause _ROE	0	1.E+200 1.E-152	0.0000 0.0000
_ROA does not Granger Cause LEVEL_OF_INDEBTEDNESS LEVEL_OF_INDEBTEDNESS does not Granger Cause _ROA	16777215	7.E+252 3.E+169	0.0000 0.0000

DEVELOPMENT does not Granger Cause GDP GDP does not Granger Cause DEVELOPMENT	4587550	6.E+223 1.E+272	0.0000 0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause GDP GDP does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	1.E+248 7.E-304	0.0000 0.0000
INFLATION does not Granger Cause GDP GDP does not Granger Cause INFLATION	655370	5.E-299 0.00000	0.0000 0.0000
NET_INCOME does not Granger Cause GDP GDP does not Granger Cause NET_INCOME	655370	0.00000 0.00000	0.0000 0.0000
TOTAL_CAPITAL does not Granger Cause GDP GDP does not Granger Cause TOTAL_CAPITAL	655370	3.E-164 1.E+151	0.0000 0.0000
TOTAL_ASSETS does not Granger Cause GDP GDP does not Granger Cause TOTAL_ASSETS	655370	1.8E+11 3.6E-95	0.0000 0.0000
UNEMPLOYMENT_RATE does not Granger Cause GDP GDP does not Granger Cause UNEMPLOYMENT_RATE	655370	3.E-298 1.1E+26	0.0000 0.0000
_ROE does not Granger Cause GDP GDP does not Granger Cause _ROE	655370	1.1E+21 1.4E+93	0.0000 0.0000
_ROA does not Granger Cause GDP GDP does not Granger Cause _ROA	655370	4.E+198 1.E-152	0.0000 0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause DEVELOPMENT DEVELOPMENT does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	2.E+161 7.E+212	0.0000 0.0000
INFLATION does not Granger Cause DEVELOPMENT DEVELOPMENT does not Granger Cause INFLATION	655370	0.00000 7.E-304	0.0000 0.0000
NET_INCOME does not Granger Cause DEVELOPMENT	655370	5.E-299	0.0000

DEVELOPMENT does not Granger Cause NET_INCOME		0.00000	0.0000
TOTAL_CAPITAL does not Granger Cause DEVELOPMENT	655370	0.00000	0.0000
DEVELOPMENT does not Granger Cause TOTAL_CAPITAL		0.00000	0.0000
TOTAL_ASSETS does not Granger Cause DEVELOPMENT	655370	0.00000	0.0000
DEVELOPMENT does not Granger Cause TOTAL_ASSETS		0.01923	0.0000
UNEMPLOYMENT_RATE does not Granger Cause DEVELOPMENT	655370	-1.E+107	0.0000
DEVELOPMENT does not Granger Cause UNEMPLOYMENT_RATE		0.00000	0.0000
_ROE does not Granger Cause DEVELOPMENT	655370	0.00000	0.0000
DEVELOPMENT does not Granger Cause _ROE		0.00000	0.0000
_ROA does not Granger Cause DEVELOPMENT	655370	0.00000	0.0000
DEVELOPMENT does not Granger Cause _ROA		-0.02599	0.0000
INFLATION does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	3.2E+27	0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause INFLATION		0.00000	0.0000
NET_INCOME does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	0.00000	0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause NET_INCOME		0.00000	0.0000
TOTAL_CAPITAL does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	0.00000	0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause TOTAL_CAPITAL		-0.03656	0.0000
TOTAL_ASSETS does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	1.E+131	0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause TOTAL_ASSETS		0.00000	0.0000
UNEMPLOYMENT_RATE does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	0.00000	0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause UNEMPLOYMENT_RATE		0.00000	0.0000
_ROE does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX	655370	0.00000	0.0000
HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause _ROE		-0.02136	0.0000

_ROA does not Granger Cause HERFINDAHL_HIRSCHMAN_INDEX HERFINDAHL_HIRSCHMAN_INDEX does not Granger Cause _ROA	655370	6.E+156 0.00000	0.0000 0.0000
NET_INCOME does not Granger Cause INFLATION INFLATION does not Granger Cause NET_INCOME	655370	0.00000 0.00000	0.0000 0.0000
TOTAL_CAPITAL does not Granger Cause INFLATION INFLATION does not Granger Cause TOTAL_CAPITAL	655370	0.00000 -0.00688	0.0000 0.0000
TOTAL_ASSETS does not Granger Cause INFLATION INFLATION does not Granger Cause TOTAL_ASSETS	655370	8.0E-35 0.00000	0.0000 0.0000
UNEMPLOYMENT_RATE does not Granger Cause INFLATION INFLATION does not Granger Cause UNEMPLOYMENT_RATE	655370	0.00000 0.00000	0.0000 0.0000
_ROE does not Granger Cause INFLATION INFLATION does not Granger Cause _ROE	655370	0.00000 0.00269	0.0000 0.0000
_ROA does not Granger Cause INFLATION INFLATION does not Granger Cause _ROA	0	1.E-213 0.00000	0.0000 0.0000
TOTAL_CAPITAL does not Granger Cause NET_INCOME NET_INCOME does not Granger Cause TOTAL_CAPITAL	0	0.00000 0.00000	0.0000 0.0000
TOTAL_ASSETS does not Granger Cause NET_INCOME NET_INCOME does not Granger Cause TOTAL_ASSETS	0	0.00000 0.01381	0.0000 0.0000
UNEMPLOYMENT_RATE does not Granger Cause NET_INCOME NET_INCOME does not Granger Cause UNEMPLOYMENT_RATE	0	4.E+109 0.00000	0.0000 0.0000
_ROE does not Granger Cause NET_INCOME NET_INCOME does not Granger Cause _ROE	0	0.00000 0.00000	0.0000 0.0000
_ROA does not Granger Cause NET_INCOME NET_INCOME does not Granger Cause _ROA	0	0.00000 0.00000	0.0000 0.0000

TOTAL_ASSETS does not Granger Cause TOTAL_CAPITAL	0	0.00000	0.0000
TOTAL_CAPITAL does not Granger Cause TOTAL_ASSETS		0.00000	0.0000
UNEMPLOYMENT_RATE does not Granger Cause TOTAL_CAPITAL	0	0.00000	0.0000
TOTAL_CAPITAL does not Granger Cause UNEMPLOYMENT_RATE		0.00000	0.0000
_ROE does not Granger Cause TOTAL_CAPITAL	0	0.00000	0.0000
TOTAL_CAPITAL does not Granger Cause _ROE		0.00000	0.0000
_ROA does not Granger Cause TOTAL_CAPITAL	0	0.00000	0.0000
TOTAL_CAPITAL does not Granger Cause _ROA		0.00000	0.0000
UNEMPLOYMENT_RATE does not Granger Cause TOTAL_ASSETS	0	0.00000	0.0000
TOTAL_ASSETS does not Granger Cause UNEMPLOYMENT_RATE		0.00000	0.0000
_ROE does not Granger Cause TOTAL_ASSETS	0	0.00000	0.0000
TOTAL_ASSETS does not Granger Cause _ROE		0.00000	0.0000
_ROA does not Granger Cause TOTAL_ASSETS	0	0.00000	0.0000
TOTAL_ASSETS does not Granger Cause _ROA		0.00000	0.0000
_ROE does not Granger Cause UNEMPLOYMENT_RATE	0	0.00000	0.0000
UNEMPLOYMENT_RATE does not Granger Cause _ROE		0.00000	0.0000
_ROA does not Granger Cause UNEMPLOYMENT_RATE	0	0.00000	0.0000
UNEMPLOYMENT_RATE does not Granger Cause _ROA		0.00000	0.0000
_ROA does not Granger Cause _ROE	0	0.00000	0.0000
_ROE does not Granger Cause _ROA		0.00000	0.0000

Source: Author's calculations based on data extracted from annual bank reports