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Abstract

The relationship between financial development and economic growth remains a fundamental issue in the economics and finance literature. This paper examines this relationship by introducing institutional variables (law and order, corruption, external conflicts, socioeconomic conditions, investment profile and democratic accountability) of 13 Middle East and North African (MENA) countries over the 1990-2008 period using the generalized method of moments (GMM) system approach. This (GMM) systems approach constitutes the outstanding aspect of this study. In fact, the empirical analysis reports the following results: when we use different measures of financial development and institutions as separate explanatory variables, most of the reported coefficients of liquid liabilities and central bank assets are positive and not significant, except for private credit, coefficients are negative and important. Some coefficients of institutional variables are positive and significant. These results have been obtained by using interaction between financial development and institutions. We find that most coefficients have a positive and insignificant impact on economic growth. However for democratic accountability, external conflicts, and socioeconomic conditions when central bank assets are used as a proxy for financial development, coefficients are positive and significant.

JEL Classification: O16, G18, G21 and G28.

Keywords: Financial development, economic growth, institutions, GMM system and MENA.

ملخص

العلاقة بين التنمية المالية والنمو الاقتصادي لا تزال تمثل قضية أساسية في الاقتصاد وأدب التمويل. هذه الورقة تبحث هذه العلاقة من خلال إدخال المتغيرات المؤسسية (القانون والنظام، والفساد، والصراعات الخارجية، والظروف الاجتماعية والاقتصادية، لمحة الاستثمار والمساءلة الديمقراطية) في 13 من بلدان الشرق الأوسط و شمال أفريقيا (MENA) خلال الفترة 1990-2008 باستخدام أسلوب (GMM). هذا النهج (GMM) يشكل الجانب المميز لهذه الدراسة. في الواقع، فإن التحليل التجريبي أفاد النتائج التالية: عندما نستخدم التدابير المختلفة لتنمية المؤسسات المالية والمتغيرات التفسيرية منفصلة، فإن معظم معاملات الأصول السائلة وأصول البنك المركزي تكون إيجابية ولكن غير هامة ، باستثناء الائتمان الخاص، حيث ان معاملاتها تكون سلبية وهامة. بعض معاملات المتغيرات المؤسسية هي إيجابية وهامة. وقد تم الحصول على هذه النتائج باستخدام التفاعل بين التنمية والمؤسسات المالية. نجد أيضا أن معظم المعاملات يكون لها أثر إيجابي ولكن يكاد لايذكر على النمو الاقتصادي. ولكن بالنسبة للمساءلة الديمقراطية، والصراعات الخارجية، والظروف الاجتماعية والاقتصادية وعند استخدام أصول البنك المركزي كوكيل للتنمية المالية، تصبح المعاملات إيجابية وهامة.

1. Introduction

This paper contributes to the literature on the relationship finance development and economic growth in two aspects: Firstly, we focus more specifically on the contribution of the institutional environment and its interaction with financial development on economic growth. Many previous studies in this literature pointed only to financial development as one of mechanism to promote economic growth. Thus, we revisit this relationship by testing whether this relationship depends on the institutional environment of the country. In this paper, we use 6 measures of institutions including socioeconomic conditions, investment profile, law and order, corruption, external conflicts and democratic accountability. Secondly, this paper explores the link between financial development, quality of institutions and economic growth in the Middle East and North Africa region (MENA).

Our results can be summarized as follows: Using Liquid liabilities (LL), Private credit by deposit money banks and other financial institutions (PC) and Central bank assets (CB) as measures of financial development and socioeconomic conditions, investment profile, law and order, corruption, external conflicts and democratic accountability as measures of the quality of institutions quality, and including 13 MENA countries over the period 1990-2008, we find that when we use different measures of financial development and institutions as separate explanatory variables, most of the reported coefficients of liquid liabilities and central bank assets are positive and not significant;, except for private credit, which has coefficients that are negative and significant. Some coefficients of institutional variables are positive and significant at 5% and 10%. As a robustness checks, we have performed our results by using interaction between financial development and institutions. Most coefficients proved to have a positive and insignificant impact on economic growth. However, coefficients are positive and significant at 10% for democratic accountability, external conflicts and socioeconomic conditions when central bank assets are used as a proxy for financial development.

The remainder of this paper is organized as follows: Section 2 presents a brief review of the literature of financial development, quality of institutions, and economic growth. Section 3 identifies the model specification, variables definitions, econometric approaches and reports the major empirical results. Section 4 concludes the paper.

2. Financial development, institutions quality and economic growth: a review of the literature

Institutional quality is gaining more and more ground in explaining economic growth. This last decade, an abundance of literature highlighted the fact that adopting efficient policies favours financial development and thus facilitates economic growth (Douglas 1990; Cavalcanti et al. 2008; Yao and Yueh 2008; Hasan et al. 2009; Casson et al. 2010; Huang 2010; Angelopoulos et al. 2010; Blackburn and Forgues-Puccio 2010). Recently, economists focused attention on this relationship bringing to the fore the importance of institutional factors to financial systems development (Hasan et al. 2009; Aggarwal and Goodell 2010; Huang 2010; Minea and Villieu 2010; Weill 2010). Accordingly, these factors may help install policies targeting institutional reforms that aim at promoting growth-driven financial systems (Angelopoulos et al. 2010; Blackburn and Forgues-Puccio 2010; Casson et al. 2010; Lu Feng and Yao 2008). Particularly, the work of Levine (1997) integrates institutional factors as elements favouring a framework conducive to financial development. Studying a sample of 100 variables and 130 countries of which six are transitions economies, Eschenbach et al. (2004) found out that the main variables of economic growth are linked to financial indicators, macroeconomic performance and institutions quality. In other words, the authors admit the importance of the institutional framework and finance to economic growth. Chinn and Ito (2006), Mishkin (2009) and Blackburn and Forgues-Puccio (2010) conclude that financial liberalization is good for economic development when institutional quality is good and may by bad for development when institutional quality is bad. Financial liberalisation is a key factor in stimulating institutional reforms in developing countries that promote financial development.

Institutional quality-based financial development is explained by theories which highlight different forms of institutions of which there are (1) legal institutions that define the nature of the legal system, implement and enforce laws, especially ownership rights, (2) economic institutions that enact the set of rules governing the production process, the allocation and distribution of goods and services and rules governing market performance, (3) political institutions that define election and political system rules and (4) social institutions that enact the general principles of the social security, education and health systems.

La Porta et al. (2005) and Baltagi et al. (2007) assume that the law and the quality with which it is enforced are main determinants of investors' rights and the way these rights are protected. However, these rules are necessary conditions, yet insufficient by themselves. Differently put, these rules must be enforced. The legal and regulatory framework of markets rests essentially on information transparency, the possibilities of contesting observable flaws, and the power of relevant authorities to investigate and punish. So far, conditions of executing contracts, regulation of intermediaries and markets seem to be the main determinants of financial development. However, Mckinnon and Shaw (1973) review these assumptions and consider that an abusive regulation may negatively affect economic growth. Lu Feng and Yao (2008) find that, in an economy characterised by financial repression an enhanced legal system does not have a significant effect on the average GDP growth rate. Levine (1998) examines the relationship between the legal system and banking development using long-term GDP rate, capital accumulation and productivity improvement. Levine notices that in countries where the legal system enforces creditors' rights and efficiently subscribe these rights to contracts, banks are more developed than those in countries where laws are not enforceable and neglect creditors. Yet, we can claim that in emerging countries institutions and markets are themselves obstacles to reforms, despite the huge efforts undertaken to improve their institutional environment (Baltagi et al. 2007).

Furthermore, Hasan et al (2009), La Porta et al. (1996, 1997, 2005), Levine (1999), Beck et al. (2000) and Minea and Villieu (2010) focus on the role played by the legal and institutional environment in explaining differences in financial development across countries. Then, it is assumed that the financial system's legal origin influences the level of financial development because types of legal institutions differ according to degree of protection of private ownership rights. In addition, the relationship between legal origin and level of financial development is not as simple as it seems in as much as laws and their enforcement change through time and are in constant evolution. Hasan et al. (2009) and Angelopoulos et al. (2010) suggest that the development of financial markets, legal environment, awareness of property rights and political pluralism are associated with stronger growth. Perotti and Modigliani (2000) found their analysis not on the nature of the law rather on the quality of its enforcement. The authors prove the superiority of the Scandinavian countries' civil law over their Anglo-Saxon counterparts concerning the impact of law enforcement quality on financial development. Likewise, Hyytinen et al. (2002) conclude noting that degree of investors' protection not only depends on laws but also on the efficiency and quality of their enforcement. Dollar and Levine (2005) conducted a comparative study on countries benefiting from bilateral assistance and those benefiting from multilateral assistance , using the legal framework as an explanatory variable, and conclude that the absence of a solid institutional environment capable of controlling and regulating the financial sector may be considered as an obstacle to economic growth. Weill (2010), which uses a regional measure of corruption in Russia, proves a negative role of corruption on bank lending. Still, in line with this thesis, there are divergent predictions on the political mechanisms and their adaptability as noted by Beck and Levine (2003). These predictions become contradictory once we compare legal systems.

Examining the link between political institutions and financial development, Huang (2010) uses a panel data of 90 developed and developing countries over the period 1960-1999. The author confirms a positive effect of institutional improvement on financial development. In general, democratic transformation is typically followed by short-run boost in financial development. The allocation theory found in Acemoglu et al. (2001), Beck et al. (2003) and Cavalcanti et al. (2008) predicts that within colonies it is practically impossible to view the channels installing institutions favouring the development of independent and competitive financial markets in as much as this may jeopardize the position of the ruling elite. Likewise, within colonies, the channels are encouraged to establish institutions that protect private ownership rights from the State and that improve the fate of the financial system. Arestis et al. (2002) tried to analyse this phenomenon, and reached the conclusion that operationalizing financial reforms presupposes a healthy institutional framework.

According to Casson et al. (2010), the political, economic and social environment jointly groups formal and informal rules. When these rules are partially or not at all respected, the formal system's fragility is noticed and the quality of institutions is questioned. Douglas (1990), Roe (1999) and Pagano and Volpin (2001) point to the explanatory power of the socio-political factors. Their assumptions rely rather on the fact that legal reforms must come along with political ones with the aim of promoting the financial system and economic growth. By contrast, Chowdhury and Murshed (2002) highlight the fact that a major instable political situation has an impact on financial intermediaries' performance, suggesting the existence of a negative correlation between conflicts intensity and level of financial development.

3. The Empirical Study: Role of Institutions Quality

3.1. Presentation of the model, data and proxy measures

The model to be tested is the following:

$$y_{it} = \alpha y_{i\,t\text{-}1} + \beta_0 X_{it} + \beta_1 F_{it} + \beta_2 INS_{it} + \varepsilon_{it}$$

Where:

y is the logarithm of real GDP per capita.

F is the measure of financial development. In this study, we will retain 3 indicators:

Liquid liabilities (LL)

Private credit by deposit money banks and other financial institutions (PC)

Central bank assets (CB)

X: is the vector of explanatory variables (inflation, trade, government size and population)

INS: We use 6 measures of institutions including socioeconomic conditions, investment profile, law and order, corruption, external conflicts and democratic accountability.

ε is the error term.

A definition of all the variables and their sources is provided in Appendix 1.

Our study examines the Middle East and North Africa (MENA) countries. Data cover the 1990-2008 period, taken from the World Bank (World Development Indicators 2009). Financial development variables are taken from the Financial Structure Database (2008) and the institutional variables are taken from the International Country Risk Guide Database (ICRG).

3.2. Econometric tests and main results

We will use the GMM system method because the Blundell and Bond (1998) estimator bypasses Arellano and Bond (1991) by making the additional assumption that first differences of instrumenting variables are uncorrelated with the fixed effects. It builds a system of two equations-the original equation as well as the transformed one-and is known as "system *GMM*". The test for AR (2) in first differences is more important, because it will detect autocorrelation in levels. The validity of the instruments is tested using a Sargan test of over-identifying restrictions and a test of the absence of serial correlation of the residuals. As our data contain 13 countries, we prefer to display the method one-step GMM-in-System estimator.

Tables 1, 2 and 3 report the initial estimation results of the link between financial development and economic growth before including institutional interactive variables.

All these 3 models are globally and statistically significant because the probabilities of the *Wald's* test are largely inferior to 5%. The Sargan and serial-correlation tests do not reject the null hypothesis of correct specification, the P-value of the Sargan test and the AR (2) test of Arellano and Bond are larger than 5%, lending support to our estimation results.

Using Liquid liabilities (LL), Private credit by deposit money banks and other financial institutions (PC) and Central bank assets (CB) as measures of financial development and socioeconomic conditions, investment profile, law and order, corruption, external conflicts and democratic accountability as measures of institutional quality, and including 13 MENA countries over the period 1990-2008, we find that when we use different measures of financial development and institutions as separate explanatory variables, most of the reported coefficients of liquid liabilities and central bank assets are positive and not significant, except for private credit, where coefficients are negative and significant. Some coefficients of institutional variables are positive and significant at 5% and 10%.

3.3. Robustness tests: The interaction effect between financial development and institutions on economic growth

For robustness checks, we will test the following model:

$$y_{it} = \alpha y_{i\,t-1} + \beta X_{it} + \chi(F_{it} * INS_{it}) + \varepsilon_{it}$$

Tables 4, 5 and 6 report the estimation results of the link between financial development and economic growth before including interaction between institutional and financial development variables. We notice that all these 3 models are globally and statistically significant because the probabilities of the *Wald's* test are largely inferior at 5%. The Sargan and serial-correlation tests do not reject the null hypothesis of the correct specification, the value of Sargan test and the AR (2) test of Arellano and Bond are larger than 5%, lending support to our estimation results.

We have performed our results by using interaction between financial development and institutions. Most coefficients proved to have a positive and insignificant impact on economic growth, except for democratic accountability, external conflicts and socioeconomic conditions when central bank assets are used as a proxy of financial development, coefficients are positive and significant at 10%.

When we introduce interactive variables, the results show that they are without significant effects on the relationship of financial development and economic growth already weakly pronounced in the absence of institutional variables (cf, Appendix 3), with the exception of the variable interactive CB, for which three of the six regressions confirm the positive and significant relationship between financial development and economic growth.

However, the interactive variable coefficients estimated from regressions including the Liquid Liabilities and Private Credit separately, exhibit disappointing results, both negative and positive and insignificant. In our view, the robustness test that we conducted under interactive variables suggests that the latter have not had a decisive impact on economic growth and despite the efforts of governments in the region, the quality of financial institutions, in particular, has not yet managed to stimulate financial development in order to boost economic growth.

4. Concluding remarks and policy implications

In the last decades, the extensive amount of literature on financial institutions has opened a new way of research into the link between finance and growth nexus. Based on a panel data set comprised of 13 Middle East and North African (MENA) countries over the period of 1990-2008, this study investigates the relationship between financial development, measured by liquid liabilities, private credit by deposit money banks and other financial institutions and central bank assets, and economic growth, measured by logarithm of real GDP per capita, using variables of institutional quality. To explore this key innovation, we have used in particular, law and order, corruption, external conflicts, socioeconomic conditions, investment profile and democratic accountability.

We found several interesting results. Firstly, when we use three measures of financial development and institutions as separate explanatory variables, most of the reported coefficients of liquid liabilities and central bank assets are positive and not significant, except for private credit, whose coefficients are negative and important. Some coefficients of institutional variables are positive and significant. Secondly, we have performed our analysis by using interaction between financial development and institutions. We find that most coefficients have a positive and insignificant impact on economic growth, except for democratic accountability, external conflicts, and socioeconomic conditions when central bank assets are used as a proxy of financial development, coefficients are positive and significant.

Given the vital role and the importance of financial development in the economy, the policy implications of our findings are straightforward: to promote economic growth, all MENA countries must strengthen institutions and governance. Those countries are working to upgrade law and order, socioeconomic conditions, investment profile, democratic accountability and reduce corruption and external conflicts because a well-functioning financial system can positively contribute to higher rate of economic growth.

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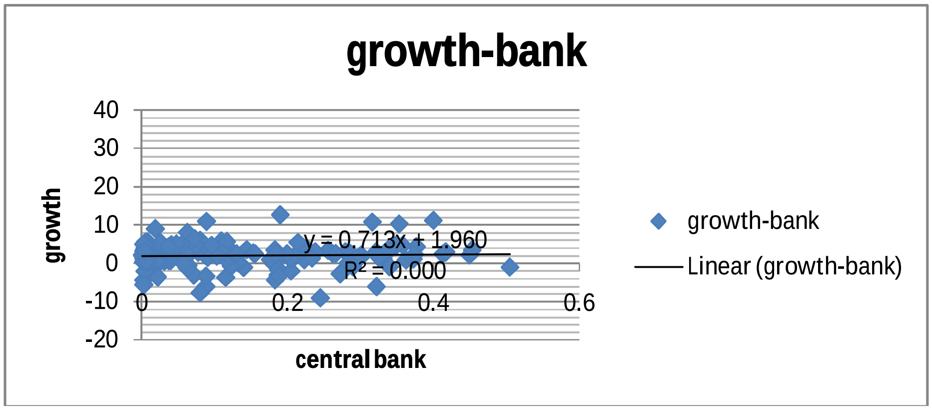
Appendix 1: Definitions of all Variables

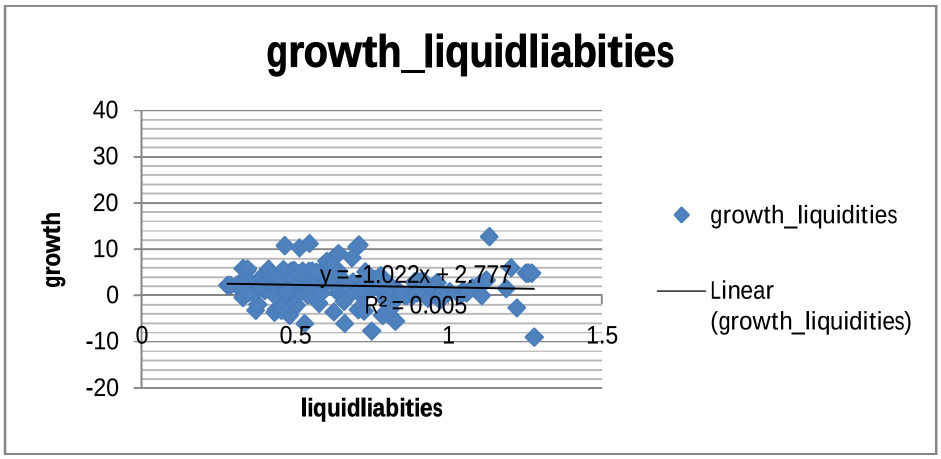
Variables	Definition	Source
Economic Growth	Real GDP per capita growth	World Development Indicators
Inflation	Change in consumer price index	World Development Indicators
Trade	Import plus export divided to GDP	World Development Indicators
Government size	Ratio of Government final consumption to GDP	World Development Indicators
Population	Growth rate of total population	World Development Indicators
Liquid liabilities	Ratio of liquid liabilities to GDP, calculated using the following deflation method: {(0.5)*[Ft/P_et + Ft-1/P_et-1]}/[GDPt/P_at] where F is liquid liabilities, P_e is end-of period CPI, and P_a is average annual CPI	Liquid liabilities (IFS lines 55L. ZF or, if not available, line 35L. ZF); GDP in local currency (IFS line 99B. ZF or, if not available, line 99B.CZF); end-of period CPI (IFS line 64M. ZF or, if not available, 64Q. ZF); and annual CPI (IFS line 64. ZF). International Financial Statistics
Central bank assets	Claims on domestic real nonfinancial sector by the Central Bank as a share of GDP, calculated using the following deflation method: {(0.5)*[Ft/P_et + Ft-1/P_et-1]}/[GDPt/P_at] where F is Central Bank claims, P_e is end-of period CPI, and P_a is average annual CPI	Central Bank claims (IFS lines 12, a-d); GDP in local currency (IFS line 99B. ZF or, if not available, line 99B.CZF); end-of period CPI (IFS line 64M. ZF or, if not available, 64Q. ZF); and annual CPI (IFS line 64. ZF). International Financial Statistics
Private credit by deposit money banks and other financial institutions	Private credit by deposit money banks and other financial institutions to GDP, calculated using the following deflation method: {(0.5)*[Ft/P_et + Ft-1/P_et-1]}/[GDPt/P_at] where F is credit to the private sector, P_e is end-of period CPI, and P_a is average annual CPI	Private credit by deposit money banks and other financial institutions (IFS lines 22d and 42d); GDP in local currency (IFS line 99B. ZF or, if not available, line 99B.CZF); end-of period CPI (IFS line 64M. ZF or, if not available, 64Q. ZF); and annual CPI (IFS line 64. ZF). International Financial Statistics
Law and order	Measure of the law and order tradition of a country. It ranges from 6, strong law and order tradition, to 1, weak law and order tradition.	International Country Risk Guide (ICRG)
Corruption	The level of corruption ranges from 0 (high level of corruption) to 4 (low level).	International Country Risk Guide (ICRG) International Country Risk Guide (ICRG)
Socioeconomic conditions	This is an assessment of the socioeconomic pressures at work in society that could constrain government action or fuel social dissatisfaction. The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk.	International Country Risk Guide (ICRG)
Investment profile	This is an assessment of factors affecting the risk to investment that are not covered by other political, economic and financial risk components. The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk.	International Country Risk Guide (ICRG)
External conflicts	The external conflict measure is an assessment both of the risk to the incumbent government from foreign action, ranging from non-violent external pressure (diplomatic pressures, withholding of aid, trade restrictions, territorial disputes, sanctions, etc.) to violent external pressure (cross-border conflicts to all-out war). The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk.	International Country Risk Guide (ICRG)
Democratic accountability	This is a measure of how responsive government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society, but possibly violently in a non-democratic one.	

Appendix 2: List of MENA countries

1. Algeria
2. Bahrain
3. Egypt, Arab Rep.
4. Iran, Islamic Rep.
5. Jordan
6. Kuwait
7. Lebanon
8. Morocco
9. Oman
10. Saudi Arabia
11. Syrian Arab Republic
12. Tunisia
13. United Arab Emirates

Appendix 3: Financial Development and Economic Growth: Graphical Analysis





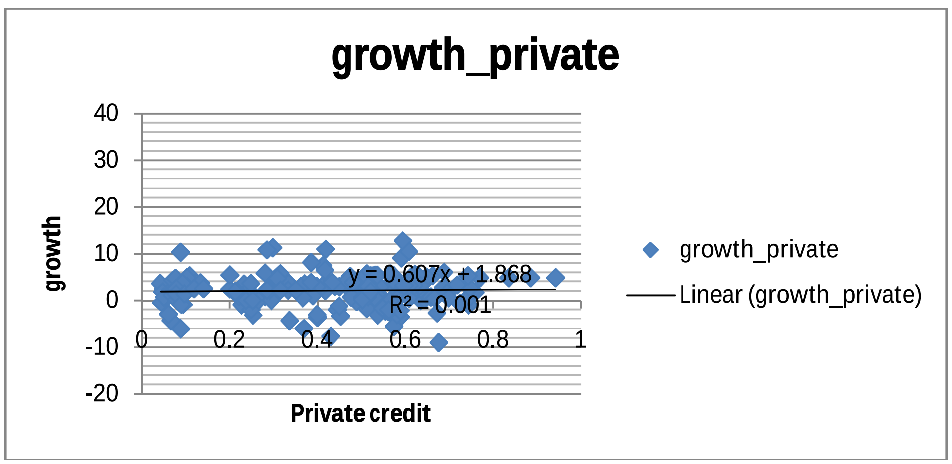


Table 1: Financial Development, Economic Growth and Institutions: Indicator of Financial Development: Liquid Liabilities (LL)

	1	2	3	4	5	6
L.growth	-0.141	-0.142	-0.146	-0.194	-0.054	-0.249
	(0.71)	(0.66)	(0.69)	(0.86)	(0.19)	(0.93)
Inflation	0.044	0.077	0.049	-0.096	0.016	-0.128
	(0.35)	(1.44)	(0.70)	(0.63)	(0.47)	(1.11)
Trade	0.047	0.055	0.046	0.004	-0.029	-0.015
	(2.19)**	(1.72)*	(1.81)*	(0.11)	(0.70)	(0.49)
Government size	-0.020	0.036	-0.032	-0.356	-0.616	-0.776
	(0.35)	(0.19)	(0.42)	(1.19)	(1.84)*	(1.78)*
Population	-1.250	-1.314	-1.270	-0.970	0.078	-0.752
	(2.32)**	(2.32)**	(2.32)**	(2.24)**	(0.09)	(1.00)
LL	0.832	1.483	1.202	-1.200	0.540	2.559
	(0.14)	(0.20)	(0.21)	(0.23)	(0.09)	(0.36)
Democratic	0.279					
	(0.18)					
Law and order		-0.327				
		(0.28)				
Corruption			0.294			
			(0.34)			
External conflicts				1.196		
				(1.34)		
Investment profile					1.972	
					(2.11)**	
Socioeconomic						3.054
						(1.61)
N	169	169	169	169	169	169
Wald test	385.75	103.62	195.49	175.49	154.54	29.80
P-value Wald test	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) test	-1.20	1.15	1.18	0.73	1.16	0.45
P-value AR(2) test	0.230	0.249	0.240	0.463	0.246	0.653
Sargan test	11.35	11.40	11.48	9.85	5.11	6.18
P-value Sargan test	0.685	0.658	0.648	0.773	0.984	0.962

Notes: Estimation method is one-step GMM-in-System estimator. AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The numbers in parentheses are t-statistics. Sargan-statistics is the test of over-identifying restrictions. *, **, and *** indicate statistical significance at the 1%, 5%, and 10% level.

Table 2: Financial Development, Economic Growth and Institutions: Indicator of Financial Development: Central Bank Assets (CB)

	1	2	3	4	5	6
L.growth	-0.303	-0.269	-0.274	-0.315	-0.290	-0.554
	(1.73)*	(1.87)*	(1.77)*	(1.52)	(1.37)	(3.62)***
Inflation	0.030	-0.049	-0.026	-0.072	0.023	-0.160
	(0.30)	(0.78)	(0.37)	(0.67)	(0.56)	(1.34)
Trade	0.088	0.080	0.076	0.033	0.015	0.004
	(1.90)*	(4.25)***	(2.70)***	(0.68)	(0.44)	(0.05)
Government size	0.070	0.046	-0.030	-0.441	-0.525	-1.029
	(0.36)	(0.13)	(0.31)	(0.92)	(1.70)*	(1.50)
Population	-2.506	-2.660	-2.391	-1.653	-0.583	-0.551
	(2.36)**	(2.54)**	(2.54)**	(1.47)	(0.74)	(0.34)
CB	29.240	27.214	24.540	10.698	7.625	4.342
	(1.10)	(2.01)**	(1.18)	(0.57)	(0.74)	(0.13)
Democratic	-1.498					
	(0.62)					
Law and order		-0.501				
		(0.31)				
Corruption			-0.328			
			(0.25)			
External conflicts				0.979		
				(0.81)		
Investment profile					1.393	
					(1.58)	
Socioeconomic						3.766
						(1.31)
N	138	138	138	138	138	138
Wald test	30.24	383.18	130.10	384.80	118.44	77.89
P-value Wald test	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) test	0.54	0.60	0.57	0.26	0.65	-0.50
P-value AR(2) test	0.589	0.546	0.567	0.793	0.519	0.615
Sargan test	8.63	9.01	9.13	9.25	7.14	5.23
P-value Sargan test	0.854	0.830	0.823	0.815	0.929	0.982

Notes: Estimation method is one-step GMM-in-System estimator. AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The numbers in parentheses are t-statistics. Sargan-statistics is the test of over-identifying restrictions. *, **, and *** indicate statistical significance at the 1%, 5%, and 10% level.

Table 3: Financial development, economic growth and institutions: Indicator of financial development: Private credit by deposit money banks and other financial institutions (PC)

	1	2	3	4	5	6
L.growth	-0.143	-0.145	-0.148	-0.196	-0.048	-0.260
	(0.72)	(0.71)	(0.70)	(0.75)	(0.16)	(0.92)
Inflation	0.048	0.062	0.054	-0.161	0.006	-0.116
	(0.37)	(1.34)	(0.63)	(0.84)	(0.14)	(0.94)
Trade	0.055	0.061	0.058	0.023	-0.009	-0.019
	(1.38)	(1.58)	(1.66)*	(0.43)	(0.18)	(0.38)
Government size	-0.002	-0.016	-0.003	-0.350	-0.578	-0.804
	(0.02)	(0.08)	(0.03)	(1.08)	(1.80)*	(2.83)***
Population	-1.211	-1.170	-1.215	-1.078	0.113	-0.581
	(2.64)***	(3.57)***	(2.82)***	(2.31)**	(0.16)	(0.79)
PC	-1.084	-2.619	-1.702	-10.990	-5.970	4.140
	(0.10)	(0.22)	(0.15)	(0.68)	(0.41)	(0.26)
Democratic	0.238					
	(0.17)					
Law and order		0.194				
		(0.18)				
Corruption			0.236			
			(0.25)			
External conflicts				1.508		
				(1.60)		
Investment profile					2.052	
					(1.84)*	
Socioeconomic						3.079
						(1.90)*
N	169	169	169	169	169	169
Wald test	165.65	58.99	63.89	117.84	83.68	36.31
P-value Wald test	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) test	1.14	1.13	1.11	0.33	1.01	0.43
P-value AR(2)	0.254	0.260	0.265	0.742	0.313	0.669
Sargan test	11.45	11.53	11.59	8.86	4.90	6.25
P-value Sargan test	0.650	0.644	0.639	0.840	0.987	0.960

Estimation method is one-step GMM-in-System estimator.
AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null.
The numbers in parentheses are t-statistics.
Sargan-statistics is the test of over-identifying restrictions.
*, **, and *** indicate statistical significance at the 1%, 5%, and 10% level.

Table 4: The Interaction Effect between Financial Development and Institutions on Economic Growth: Indicator of Financial Development: Liquid Liabilities (LL)

	1	**2**	**3**	**4**	**5**	**6**
L.growth	-0.168	-0.154	-0.143	-0.134	-0.123	-0.137
	(0.83)	(0.73)	(0.74)	(0.64)	(0.57)	(0.67)
Inflation	0.087	0.070	0.067	0.066	0.076	0.069
	(1.52)	(1.73)*	(1.37)	(1.77)*	(2.04)**	(2.04)**
Trade	0.066	0.060	0.051	0.045	0.037	0.047
	(2.05)**	(1.93)*	(2.35)**	(1.23)	(0.94)	(1.55)
Government size	-0.021	0.005	-0.007	-0.019	-0.043	-0.036
	(0.40)	(0.06)	(0.18)	(0.39)	(0.52)	(0.38)
Population	-1.077	-1.170	-1.226	-1.246	-1.100	-1.211
	(1.71)*	(2.43)**	(2.03)**	(2.39)**	(2.97)***	(2.98)***
LL*democratic	-0.531					
	(0.33)					
LL*law and order		-0.241				
		(0.18)				
LL*corruption			0.230			
			(0.15)			
LL*external				0.184		
				(0.28)		
LL*investment					0.387	
					(0.47)	
LL*socioeconomic						0.326
						(0.29)
N	169	169	169	169	169	169
Wald test	49.93	61.52	114.56	119.66	150.12	159.11
P-value Wald test	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) test	1.09	1.14	1.21	1.28	1.32	1.30
P-value AR(2) test	0.276	0.254	0.277	0.200	0.186	0.194
Sargan test	11.80	11.65	11.47	11.24	10.96	11.34
P-value Sargan test	0.694	0.705	0.718	0.735	0.756	0.728

Notes: Estimation method is one-step GMM-in-System estimator. AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The numbers in parentheses are t-statistics. Sargan-statistics is the test of over-identifying restrictions. *, **, and *** indicate statistical significance at the 1%, 5%, and 10% level.

Table 5: The Interaction Effect Between Financial Development and Institutions on Economic Growth: Indicator of Financial Development: Central Bank Assets (CB)

	1	2	3	4	5	6
L.growth	-0.222	-0.165	-0.140	-0.245	-0.315	-0.327
	(1.19)	(0.86)	(0.62)	(1.60)	(2.36)**	(2.68)***
Inflation	-0.057	0.019	0.029	-0.029	-0.039	-0.067
	(0.63)	(0.25)	(0.38)	(0.45)	(0.66)	(0.98)
Trade	0.060	0.065	0.060	0.068	0.067	0.070
	(6.01)***	(4.40)***	(4.02)***	(6.53)***	(7.15)***	(6.96)***
Government size	-0.006	-0.061	-0.029	-0.050	-0.077	-0.054
	(0.11)	(0.99)	(0.54)	(1.07)	(1.67)*	(1.00)
Population	-2.022	-1.876	-1.668	-2.251	-2.258	-2.362
	(4.36)***	(2.87)***	(3.28)***	(3.41)***	(2.66)***	(2.65)***
CB*democratic	6.380					
	(1.68)*					
CB*law and order		3.729				
		(0.98)				
CB*corruption			2.986			
			(0.97)			
CB*external conflicts				2.227		
				(1.65)*		
CB*investment					4.502	
					(1.57)	
CB*socioeconomic						4.892
						(1.75)*
N	138	138	138	138	138	138
Wald test	128.08	231.12	290.45	158.40	361.60	134.78
P-value Wald test	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) test	0.84	0.89	1.05	0.62	0.59	0.38
P-value AR(2) test	0.401	0.374	0.292	0.534	0.556	0.706
Sargan test	8.68	9.47	9.82	9.25	9.14	9.15
P-value Sargan test	0.894	0.852	0.831	0.864	0.870	0.869

Notes: Estimation method is one-step GMM-in-System estimator. AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The numbers in parentheses are t-statistics. Sargan-statistics is the test of over-identifying restrictions. *, **, and *** indicate statistical significance at the 1%, 5%, and 10% level.

Table 6: The Interaction Effect Between Financial Development and Institutions on Economic Growth Indicator of Financial Development: Private Credit by Deposit Money Banks and Other Financial Institutions (PC)

	1	2	3	4	5	6
L.growth	-0.225	-0.156	-0.152	-0.146	-0.126	-0.142
	(0.85)	(0.77)	(0.78)	(0.73)	(0.63)	(0.77)
Inflation	0.151	0.054	0.073	0.072	0.092	0.076
	(1.49)	(1.07)	(1.82)*	(1.95)*	(2.30)**	(2.06)**
Trade	0.151	0.072	0.068	0.054	0.034	0.051
	(1.73)*	(2.76)***	(2.53)**	(1.39)	(1.14)	(2.07)**
Government size	-0.096	0.053	-0.006	-0.011	-0.066	-0.031
	(0.43)	(0.44)	(0.14)	(0.14)	(0.72)	(0.22)
Population	-0.900	-1.330	-1.177	-1.177	-0.940	-1.138
	(1.48)	(3.46)***	(2.70)***	(2.99)***	(2.00)**	(3.16)***
PC*democratic	-6.263					
	(1.29)					
PC*law and order		-0.993				
		(0.56)				
PC*corruption			-0.888			
			(0.38)			
PC*external				0.025		
				(0.03)		
PC*investment					0.590	
					(0.65)	
PC*socioeconomic						0.239
						(0.16)
N	169	169	169	169	169	169
Wald test	17.28	47.71	54.78	85.40	197.33	125.38
P-value Wald test	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) test	0.52	1.07	1.11	1.23	1.38	1.29
P-value AR(2) test	0.602	0.285	0.268	0.220	0.169	0.197
Sargan test	10.42	11.66	11.58	11.51	10.77	11.43
P-value Sargan test	0.793	0.705	0.711	0.716	0.768	0.722

Notes: Estimation method is one-step GMM-in-System estimator. AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The numbers in parentheses are t-statistics. Sargan-statistics is the test of over-identifying restrictions. *, **, and *** indicate statistical significance at the 1%, 5%, and 10% level.