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Finance-Growth Nexus in Presence of Banking Crises: Evidence in High Income and MENA Countries

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Abstract

The important role of financial development in the process of economic growth has been subject to numerous debates in the economics literature. Results of empirical studies for single-country and cross-nations are often inconclusive. One neglected area in this topic of research is the presence of crises because many countries have been devastated by financial and banking crises the two last decencies. The main contribution of this paper is the analysis of the correlation between financial development and economic growth in the presence of banking crises. We explore this relationship by using the GMM system approach. Our study examines twenty nine high income (OECD and non-OECD) and seven Middle East and North Africa (MENA) countries for the years 1980-2009. Our econometric results show a negative coefficient between banking crises and economic growth. This coefficient is not statistically significant for high income countries and significant for MENA countries. We also find a negative coefficient of different measures of financial development. This coefficient is not statistically significant for MENA countries and significant for high income countries. In periods of crises, the effectiveness of financial system is reduced leading to less growth.

Keywords: Financial development, economic growth and banking crises

JEL Classification: G21, L11, L25 and G34

1. Introduction

In the 1980's and 1990's, several developed and developing countries liberalised their banking systems and witnessed many episodes of banking crises characterised by a huge decrease of the level of economic growth.

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The consequences, explanations and solutions of banking problems have been one of the hotly debated issues of policymakers, economists and academics. The study of the relationship between economic growth and financial development has known a peak during these 3 last decades and continues to be a fundamental issue in the literature. Obviously, much of the empirical findings of this relationship in developed and developing economies are mixed and there is no clear consensus about this relationship between finance-growth nexus. It is argued that well-developed domestic financial systems, in high, low and middle income can eventually contribute in accounting for economic growth. Prior studies suggested that financial development serves as an effective mechanism to improve economic growth. Based on the findings of Levine (1997), financial development fosters economic growth and economic activity by easing the exchange of services and goods, facilitating the trading, diversifying and hedging of risk, and mobilizing savings between economies.

Most of literature in this topic documents that the liberalization of the economy is necessary for better mobilization of savings, diversification of risks to lead to growth. Jung (1986), Roubini and Sala-i-Martin (1992), Braun and Raddatz (2007) and Ranciere et al. (2007) show that the level of financial intermediation is a good predictor and a good estimator of economic growth. By observing a sample of 80 countries over the period 1960-1989, King and Levine (1993) find that the financial sector can spur the per capita growth and point out that the government intervention in financial sector has a negative impact on the growth rate. Using a data of 47 countries over the period 1976- 1993, Levine and Zervos (1998) conclude that banks and stock market liquidity are positively correlated with contemporaneous and future rate of economic growth. Beck et al (2000) find a positive and significant connection between the exogenous components of financial development and growth.

The contributions to literature of this paper are as follows: There is no empirical research on whether and how banking crises reduce the contribution of financial development on the level of output growth. Our study aims to fill this gap by investigating whether banking crises have an impact on the relation between financial development and economic growth in the high income and MENA countries.

In view of the results, we should be able to draw some comments that may be useful for government in high income and MENA countries. In recent years, many high, upper middle, lower middle and low income economies have experienced banking crises, which had a negative effect on the effectiveness of the financial intermediation process and on growth in the long-run.

Another contribution is the use of the dynamic panel specification, for a long period, to estimate the link between financial development and its relationship with economic growth.

The empirical results of the paper reveal that for high income countries, we find a negative and not statistically significant coefficient between banking crises and economic growth. We also find a negative and statistically significant coefficient between all measures of financial development and real GDP per capita growth. In MENA countries, the coefficient of banking crises is still negative but statistically significant in most cases. Similar to high income countries, the coefficient of financial development is negative and not statistically significant.

The remainder of this paper is organized as follows: The second section will review theoretical and empirical existing literature on finance-growth nexus. The third section describes the data, the proxy measures of financial development, banking crises, real sector and economic growth, the chosen econometric methodology and the major findings. Section 4 provides conclusions and policy implications.

2. Literature Review

Since the contributions in 1973 of McKinnon and Shaw, the relationship between finance and economic growth nexus has been an important subject in theoretical and empirical literature. This literature underlines how banks and financial markets can affect positively economic growth by raising saving and capital accumulation. Referring to Shaw (1973), this special interest comes from the crucial role of financial intermediaries in the process of economic growth. Some of growing contemporary literature disagrees with the question of causality between finance and growth. So far, the existing literature has provided conflicting views of this causality. Findings are one-way or two-way causality. Singh (2008) concludes that there's a strong causal relationship between finance and growth. Other authors argue that the direction is from economic growth to financial development.

For others, the causality runs from financial development to economic growth. Other authors conclude that the causal direction is a two process.

In addition to these developments, at the beginning of the 1990s, the endogenous growth literature underlines the importance of finance development for a long term economic growth. Ang and McKibbin (2007) approved that financial liberalization is an integral part of financial sector development. As pointed by Kim and Kenny (2007), *financial liberalization is widely believed to lead to more rapid economic growth*. Several studies offer evidence that the liberalization of financial markets contributes to the development of financial system through the financing of profitable investments. Ariss (2008) provides evidence that financial liberalization of the banking system by removing the restrictions imposed by government increases the internal competition among domestic banks. Again, the author argues that financial liberalization has enabled banks to expand their offerings of many services for customers. This led to an increase in the efficiency of banks. Galindo et al. (2007) highlights the role that can play financial liberalization in the development of banks by lifting government restrictions in terms of interest rate liberalisation and banking credits. Baltagi et al. (2009) confirm that, in both developed and developing countries, the development of banks, sustained by a liberalization process, is an important mechanism of long-term growth. These studies indicate that the development of banks and financial markets has a positive effect on economic growth because it allows allocating a larger amount of saving to investment.

Giuliano and Ruiz-Arranz (2009) point out that financial system development is an important condition to stimulate economic growth. For Barth et al. (2001) and Laporta et al. (2002), an economy with a banking system controlled by the government has low rates of financial development and bad consequence on economic growth. Thus, liberalization of the domestic banking system may help to stimulate economic growth. Arestis et al. (2001) employed time series data for five developed countries and Hondroyiannis et al. (2005), through a study of Greece in 1986-1999, showed that banks contribute more to growth than the financial markets. Hübler et al. (2008) confirm the benefits of financial liberalization on domestic banks. In fact, liberalization opens the way for international banks to integrate the domestic banking system. This advantage supports the development and modernization of this network through the strengthening of market forces, so that banks use their full potential in financing the economy and consequently, the rate of growth of the economy can grow.

Klein and Olivei (2008) offer evidence that easing entry of foreign banks increases the competitiveness of the domestic banking system through access to international standards.

Mishkin (2007) finds that the implementation of international banks due to globalization stimulates the promotion and development of the financial system. In this new liberalized era, domestic banks are forced to strengthen their competitiveness and efficiency to serve the economic growth. A well-developed banking system is a sign of financial development. Yet according to some authors (Beck et al. 2000; Ang and McKibbin, 2007; Singh 2008; Beck et al. 2008), the development of the financial system is key of economic growth, so a liberalized banking system contributes positively and quickly to growth through improvement loans in the economy.

Singh (2008) confirms the crucial role of finance in the process of growth. The endogenous growth models conclude that financial development has a positive effect on economic growth as it allows to efficiently allocating savings to investment including funding for the economy focuses on banking sector. This literature approved the role played by financial liberalization in the growth process. Abiad et al. (2008) underline that financial liberalization, by reducing the role of the government, increased the level of savings and investment. The junction between financial liberalization and financial development has a very special attention of policy makers in emerging countries regarding the benefits on economic growth. Galindo et al. (2007), through a study on developing countries, concluded that there is a strong association between financial liberalization and the efficient allocation of investment. A developed financial system plays an important role in the rate of growth. Financial intermediation positively affects savings and investment through various channels. Financial intermediaries contribute to the eradication of market imperfections between lenders and borrowers and to lower transaction costs and information as the presence of asymmetric information or transactions costs make difficult the optimal allocation of resources. Kroszner et al. (2007) support the hypothesis that financial intermediaries play an important role in reducing the moral hazard and adverse selection. It's very evident that a more developed stock market improves banking transparency and provides a better governance of banks activities. Aghion et al. (1999) argue that a more developed financial sector is able to absorb macroeconomic shocks.

Overall, both theoretical and empirical literature about the relationship between finance-growth proves that financial development can enhance economic growth both in the short-run and in the long-run in all countries and especially in developed economies.

This literature negligects the effect of financial and banking crises on growth because banking crises have a negative effect on the effectiveness of the financial intermediation process and on growth. This research will revisit this link between finance and growth with particular reference to banking crises in high income and MENA countries. In fact, an affected banking system by crises can not boost output growth

3. Econometric Methodology and Major Findings

Finance-growth has been recently tested empirically in many specific countries or country groups. Empirical analyses have provided conflicting implications about the repercussions of financial development on economic performance. Our study explores 29 high income and 7 Middle East and North Africa (MENA) countries affected by banking crises over the last two decades over the period 1980-2009. This period covers an era of many recurrent and severe episodes of banking crises, financial liberalisation, development and growth. Like many high income countries, over the last two decades, MENA countries have experienced many episodes of liberalisation in the financial system and underwent noteworthy many financial reforms in banks and domestic stock market. Also, in MENA region, empirical studies about finance-growth nexus are very limited. The model to be tested is the following:

$$y_{it} = \alpha y_{i\,t-1} + \beta_0 X_{it} + \beta_1 FD_{it} + \beta_2 bcrises_{it} + \varepsilon_{it}$$

Where y denotes the logarithm of real GDP per capita, FD is the measure of financial development. In this study, we will retain 9 indicators proposed in the literature, X represents the vector of explanatory variables (inflation, trade, government size and population), bcrises is the crisis dummy for country *i* at time *t* that takes a value of one when the country is experiencing a banking crisis, and zero otherwise (see appendix 1) and ε is the error term. A definition of all the variables and their sources is provided in Appendix 2. To estimate the model, we will use the GMM system method with instrumental variables to correct the biases of the presence of endogenous regressors.

Blundell and Bond (1998) build a system of two equations-the original equation as well as the transformed one-and is known as GMM system.

The test for AR (2) of Arellano and Bond (1991) in first differences is more important, because it will detect autocorrelation in levels. The validity of the instruments is tested using a Hansen test of over-identifying restrictions and a test of the absence of serial correlation of the residuals. Tables 1 and 2 summarize the results achieved.

Table 1. Banking Crises, Financial Development and Economic Growth: The Case of High Income Countries

	1	2	3	4	5	6	7	8	9
L.gdp	-0.300	-0.125	-0.379	-0.155	-0.125	-0.133	-0.118	-0.124	-0.061
	(2.23)**	(2.73)***	(2.16)**	(3.67)***	(2.55)**	(2.58)**	(3.60)***	(4.67)***	(3.38)***
size	0.044	0.116	-0.038	0.120	0.103	0.106	0.109	0.106	0.120
	(0.31)	(2.87)***	(0.57)	(2.90)***	(3.41)***	(3.55)***	(2.92)***	(3.00)***	(2.27)**
trade	0.018	0.039	0.020	0.027	0.029	0.026	0.038	0.038	0.019
	(1.40)	(2.21)**	(0.94)	(2.35)**	(2.51)**	(2.56)**	(2.11)**	(2.26)**	(1.69)*
Inf	-0.016	-0.037	-0.056	-0.033	-0.042	-0.044	-0.036	-0.036	-0.035
	(0.90)	(1.72)*	(1.10)	(1.37)	(1.75)*	(1.82)*	(1.65)*	(1.67)*	(2.11)**
Pop	-0.305	-0.225	0.646	-0.200	-0.265	-0.132	-0.123	-0.125	-0.353
	(0.84)	(0.49)	(0.52)	(0.35)	(0.47)	(0.19)	(0.25)	(0.24)	(0.66)
bcrises	-4.498	-5.799	-4.251	-4.235	-3.726	-2.845	-5.655	-5.093	-4.409
	(0.97)	(1.54)	(0.87)	(1.57)	(1.39)	(1.18)	(1.54)	(1.44)	(1.38)
dbacba	-1.941								
	(2.16) **								
llgdp		-11.114							
		(2.53)**							
cbagdp			-6.826						
			(2.31) **						
dbagdp				-9.087					
				(2.36)**					
pcrdbgdp					-9.355				
					(2.59)***				
pcrdbofgdp						-8.424			
						(2.60)***			
bdgdp							-11.357		
							(2.59)***		
fdgdp								-10.802	
								(2.58)***	
bcbd									-6.480
									(1.81)*
P-value AR(2)	0.102	0.176	0.237	0.086	0.248	0.265	0.195	0.192	0.062
	0.260	0.494	0.502	0.419	0.440	0.361	0.511	0.448	0.323
P-value	224.59***	27.41***	28.49***	47.78***	29.53***	32.16***	27.47***	27.78***	75.19***
Hansen	582	598	576	611	611	611	610	610	616
Wald χ^2 statistics									
N									

Estimation method is GMM-in-System estimator.

AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The null hypothesis is that errors in the first difference regression exhibit no second-order serial correlation. Hansen = Hansen test for validity of over-identifying restrictions, distributed as indicated under null. This test of over-identifying restrictions is asymptotically distributed as χ^2 under the null of instrument validity. The numbers in parentheses are t-statistics.

*, **, and *** indicate rejection of the null hypothesis at the 1, 5, and 10 percent levels of significance, respectively.

Table 2. Banking Crises, Financial Development and Economic Growth: The Case of MENA Countries

	1	2	3	4	5	6	7	8	9
L.gdp	-0.118	-0.232	-0.245	-0.234	-0.239	-0.238	-0.235	-0.237	-0.121
	(2.35)**	(3.45)***	(3.31)***	(3.12)***	(2.54)**	(3.07)***	(3.42)***	(3.47)***	(2.41)**
Size	0.584	0.430	0.422	0.423	0.401	0.419	0.429	0.428	0.562
	(2.95)***	(3.49)***	(3.39)***	(3.41)***	(3.86)***	(3.33)***	(3.36)***	(3.31)***	(3.10)***
Trade	-0.002	0.046	0.026	0.039	0.047	0.045	0.037	0.034	0.036
	(0.07)	(2.16)**	(2.49)**	(2.27)**	(2.92)***	(2.52)**	(1.73)*	(1.57)	(1.64)
Inf	0.022	0.024	0.046	0.025	-0.001	0.004	0.015	0.010	0.027
	(0.18)	(0.26)	(0.36)	(0.31)	(0.02)	(0.08)	(0.17)	(0.12)	(0.24)
Pop	-0.620	-0.290	-0.401	-0.453	-0.456	-0.449	-0.407	-0.420	-0.586
	(3.17)***	(0.59)	(1.89)*	(1.36)	(1.39)	(1.37)	(0.97)	(0.99)	(1.77)*
bcrises	-3.406	-4.318	-4.595	-4.799	-4.398	-4.738	-4.429	-4.313	-3.747
	(2.87)***	(4.97)***	(2.67)***	(3.86)***	(3.08)***	(3.12)***	(4.65)***	(4.18)***	(2.20) **
dbacba	-1.562								
	(0.55)								
llgdp		-3.348							
		(0.89)							
cbagdp			-4.160						
			(0.42)						
dbagdp				-2.401					
				(0.87)					
pcrdbgdp					-4.433				
					(1.74)*				
pcrdbofgdp						-3.552			
						(1.41)			
bdgdp							-2.352		
							(0.50)		
fdgdp								-1.853	
								(0.39)	
bcbd									-2.551
									(1.12)
P-value	0.369	0.273	0.442	0.439	0.481	0.502	0.332	0.334	0.268
AR (2)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
P-value	598.47***	258.89***	120.84***	298.22***	107.95***	127.82***	235.93***	268.43***	65.94***
Hansen Wald χ^2 statistics									
N	126	118	118	118	113	118	118	118	122

Estimation method is GMM-in-System estimator.

AR (2): test of null of zero second-order serial correlation, distributed N (0, 1) under null. The null hypothesis is that errors in the first difference regression exhibit no second-order serial correlation.

Hansen = Hansen test for validity of over-identifying restrictions, distributed as indicated under null. This test of over-identifying restrictions is asymptotically distributed as χ^2 under the null of instrument validity.

The numbers in parentheses are t-statistics.

*, **, and *** indicate rejection of the null hypothesis at the 1, 5, and 10 percent levels of significance, respectively.

The J statistics of Hansen are significant at 5% and the instrumental variables are valid for high income and MENA countries, lending support to our estimation results. Also, the regression is well-fitted with statistically significant Wald Chi-square χ^2 statistics. Overall, this empirical analysis does not provide strong evidence supporting the view that measures financial development are an important determinant of economic growth in the MENA countries but an important determinant of economic growth in the higher income countries. We can explain this by the significant cost of restructuring banking crises. Crises handicap efforts of stock markets and banks to finance the economy and efficient allocations of funds to entrepreneurs. Financial system can boost output growth in absence of financial and banking crises.

Results in table 1 about growth-finance nexus in the presence of banking crises in high income countries report a negative and not statistically significant coefficient between banking crises and economic growth. Also, similar to expectation, we find a negative and statistically significant coefficient between all measures of financial development and real GDP per capita growth. These findings confirm the belief that the presence of banking crises prevents the positive and the monotonic role of financial development on economic growth in short-term. For Baltagi et al. (2009) and Fowowe (2010), there is a long-term relationship between financial development and economic growth for OECD countries. In crises periods, the effectiveness of financial system is reduced leading to less growth.

Results in table 2 about growth-finance nexus in the presence of banking crises in MENA countries underline that the coefficient of banking crises is still negative and highly significant at the 1 % level in most cases in line with results of much of the literature on this topic (Edwards 2007, Dell'Aricia et al. 2008, Sufian 2009, Reinhart and Rogoff 2009). Similar to high income countries, the coefficient of financial development is negative and not statistically significant, except for the variable private credit by deposit money banks. We can explain this finding by the fact that, in lower and upper income countries, there is strong evidence that financial markets and banks are less developed and not sensitive to economic growth process. This outcome is consistent with findings of Boulila and Trabelsi (2004) where there is a little evidence that banks and financial markets are not a leading determinant of long-run growth. Also, the MENA region results may be explained by the weak financial systems of these countries and the State's intensive interventions in them. Such interventions tend to limit the contribution of the financial sector in the process of real sector. Abu-Bader and Abu-Qarn (2008) suggest for MENA countries the need to accelerate financial reforms to stimulate saving and to enhance economic growth.

4. Concluding Remarks and Policy Implications

This paper highlights the relationship between economic growth measured by the real GDP per capita growth and 9 measures of financial development in presence of banking crises for both high income and MENA countries over the period 1980-2009. The method applied here in the GMM system approach. We find in high income countries a negative and not statistically significant coefficient between banking crises and economic growth. Also, we find a negative and significant coefficient between all measures of financial development and real GDP per capita growth. In MENA countries, the coefficient of banking crises is still negative but significant in most cases. Similar to high income countries, the coefficient of financial development is negative and not significant, except for the variable private credit by deposit money banks. Overall, our findings show that an organized financial development system can foster economic growth, more so, in absence of banking crises.

To enhance academic understanding of this subject, this research can be extended by introducing other alternatives of crises (debt crises, systemic banking crises, economic and social crises).

Given the vital role of financial system in the economy, the policy implications of our findings are straightforward: MENA countries must strengthen the role of financial markets and banks in the processes of financing the economy. Also, these countries must liberalize completely the capital account. Overall, high income and MENA countries must enhance banking governance, rule of law, institutions, creditor rights, political stability, and macroeconomic conditions (inflation and budget deficits) because a well-functioning of the financial market and banks can positively lead to higher rate of economic growth. Future work with banking governance should be able to shed a light on the relationship of financial development and economic growth because good practices of banking governance and good institutions create an environment that promotes inventiveness, economic activity and economic growth for all economies.

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Appendix 1: Episodes of Banking Crises

High Incomes countries		**MENA countries**	
Australia	1989–92	Algeria	1990–92
Canada	1983–85	Djibouti	1991–93
Czech Republic	1989–91/ 1996	Egypt, Arab Rep.	Early 80 / 1991–95
Denmark	1987–92	Jordan	1989–90
Equatorial Guinea	1983–85	Lebanon	1988–90
Estonia	1992–95	Morocco	Early 1980s
Finland	1991–94	Tunisia	1991–95
France	1994–95/ 2008-09		
Germany	Late 1970s/2008-09		
Greece	1991–95		
Hong Kong, China	1982–86/1998		
Iceland	1985–86 / 1993/2008-09		
Israel	1977–83		
Italy	1990–95/2008-09		
Japan	1991/ 1997-2001/2008-09		
Korea, Rep.	1997–2002		
Kuwait	1980s		
Latvia	1995–		
Norway	1987–93		
Portugal	2008-09		
Singapore	1982		
Slovak Republic	1991		
Slovenia	1992–94	.	
Spain	1977–85/2008-09		
Sweden	1991–94		
Switzerland	1995		
Trinidad and Tobago	1982–93		
United Kingdom	1980s and 1990s/ 2007-09		
United States	1988-91/ 2007-09		

Source: Laeven and Valencia (2008); Caprio and Klingebiel (2003)

Appendix 2. Definitions of all Variables

Variable	Label	Description	Source
Gdp	Economic Growth	Logarithm of Real GDP per capita	WDI
inf	Inflation	Change in consumer price index	WDI
trade	Trade	Import plus export divided to GDP	WDI
size	Government size	Ratio of Government final consumption to GDP	WDI
pop	Population	Growth rate of total population	WDI
bcrises	Banking crises	Dummy variable : 1 if there is a crisis and 0 otherwise	Caprio and Klingebiel (2003); Laeven and Valencia (2008)
dbacba	DEPOSIT MONEY BANK ASSETS / (DEPOSIT MONEY + CENTRAL) BANK ASSETS	Ratio of deposit money bank claims on domestic nonfinancial real sector (as defined above) to the sum of deposit money bank and Central Bank claims on domestic nonfinancial real sector (as defined above)	IMF's International Financial Statistics, (IFS lines 12 and 22, a-d)
Llgdp	LIQUID LIABILITIES / GDP	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	IMF's International Financial Statistics, 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). For Eurocurrenycy area countries (BEF, DEM, ESP, FRF, GRD, IEP, ITL, LUF, NLG, ATS, PTE, FIM), liquid liabilities are estimated by summing IFS items 34A, 34B and 35.
Cbagdp	CENTRAL BANK	Claims on domestic real	IMF's International

	ASSETS / GDP	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	Financial Statistics, 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)
Dbagdp	DEPOSIT MONEY BANK ASSETS / GDP	Claims on domestic real nonfinancial sector by deposit money banks 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 deposit money bank claims, P_e is end-of period CPI, and P_a is average annual CPI	IMF's International Financial Statistics, Deposit money bank assets (IFS lines 22, 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)
Pcrdbgdp	PRIVATE CREDIT BY DEPOSIT MONEY BANKS / GDP	Private credit by deposit money banks 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	IMF's International Financial Statistics, Private credit by deposit money banks (IFS line 22d); 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)
Pcrdbofgdp	PRIVATE CREDIT BY DEPOSIT MONEY BANKS AND OTHER FINANCIAL INSTITUTIONS / GDP	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	IMF's International Financial Statistics, 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)
Bdgdp	BANK DEPOSITS / GDP	Demand, time and saving deposits in deposit money banks 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 demand and time and saving deposits, P_e is end-of period CPI, and P_a is average annual CPI	IMF's International Financial Statistics, Bank deposits (IFS lines 24 and 25); 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)
Fdgdp	FINANCIAL SYSTEM DEPOSITS / GDP	Demand, time and saving deposits in deposit money banks and other financial institutions 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 demand and time and saving deposits, P_e is end-of period CPI, and P_a is average annual CPI	IMF's International Financial Statistics, Financial system deposits (IFS lines 24, 25, and 45); 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)
Bcbd	BANK CREDIT / BANK DEPOSITS	Private credit by deposit money banks as a share of demand, time and saving deposits in deposit money banks.	IMF's International Financial Statistics, Private credit by deposit money banks (IFS line 22d); bank deposits (IFS lines 24 and 25).