Analysis of the Financial Deepening Of Macedonian Banking System during the Global Financial Crisis

Economy

Keywords: baking system, financial deepening, credit growth, credit, deposits.

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Abstract

Most of the contemporary literature had confirmed the importance of financial institutions and market, also the vital role they are playing in the process of economic growth and development of a country by facilitating savings and channeling funds from savers to investors. Financial intermediation of growth leads to financial deepening, which refers to the greater financial resource mobilization in the formal financial sector and the ease in liquidity constraints of banks and enlargement of funds available to finance. Without any doubt, the financial sector is very important factor of economic growth and household welfare. Without a developed financial sector, for example, domestic savers and foreign investors would be more hesitant to part with their money to otherwise sound investments, resulting in lower economic outputas measured by GDPand household welfare. A well-developed financial system enables firms to expand production and provides households with the ability to obtain essential assets like a house, insure against income shocks, start a company, receive cheaper remittances, and enjoy a pension when they retire.

Introduction

During the last decade many studies from both micro and macro perspectives have examined the link between financial deepening and economic development as well as the link between financial development and poverty reduction via economic growth, Levine (2004), Fitzgerald (2008) etc. The income growth through access to financial services leads to improvement in people’s lives. Increased income allows people to enhance their living standards and escape from extreme poverty. The literature review demonstrates the link between financial depth, approximated by private sector credit to GDP, on one hand, and long-term economic growth and poverty reduction on the other hand (e.g., Demirgüç-Kunt and Levine 2008). Indeed, cross-country regressions confirm a strong positive linkage between financial depth and economic growth. There is sizeable variation in private credit across countries. For example, averaging over 1980–2010, private credit was less than 10 percent of GDP in Angola, Cambodia, and Yemen, while exceeding 85 percent of GDP in Austria, China, and United Kingdom. The annual average value of private credit across countries was 39 percent with a standard deviation of 36 percent. Thus, in their work King and Levine (2003) have proposed the most important indicators of financial depth to measure the services provided by financial intermediaries:

1) Ratio of credit issued to the private sector to GDP
2) Money and quasi money (M2) as % of GDP,
3) Total savings and deposits / GDP

Financial depth alludes to the financial sector relative to the economy. It is the size of banking system, other non bank financial institutions, and financial markets in a country, taken together and compared to a measure of economic output. Hence, finance researchers use proxies to measure financial deepening. In this regard, a proxy variable that has received much attention in the empirical literature is private credit relative to gross domestic product (GDP). More specifically, the variable is defined as domestic private credit to the real sector by deposit money banks as percentage of GDP in local currency. Therefore, the private credit excludes credit issued by central banks, also excludes credit issued to governments, government agencies, and public enterprises. The second indicator of financial deepening is the ratio of a monetary aggregate M2 (money) to GDP.Financial depth, approximated by private credit to GDP, has a strong statistical link to long-term economic growth and it is also very closely linked to the poverty reduction. For example, the annual average value of private credit across countries was 39% with a standard deviation of 36%.

The third indicator used to analyze the financial deepening is total bank savings and deposits to GDP. A bank deposit is money placed for short term or long term into a banking institution for safekeeping. Bank deposits are made into deposit accounts at a banking institution, such as savings accounts, current accounts, or fixed deposits. The account holder has the right to withdraw any deposited funds, as set forth in the terms and conditions of the account. The "deposit" itself is a liability owed by the bank to the depositor (the person or entity that made the deposit), and refers to this liability rather than to the actual funds that are deposited. In the more developed economies, bank deposits are increasingly being replaced by alternative investments such as mutual funds. The data for this indicator are presented as a share of GDP. In the richest countries, the deposits value exceeds 100% the GDP value.

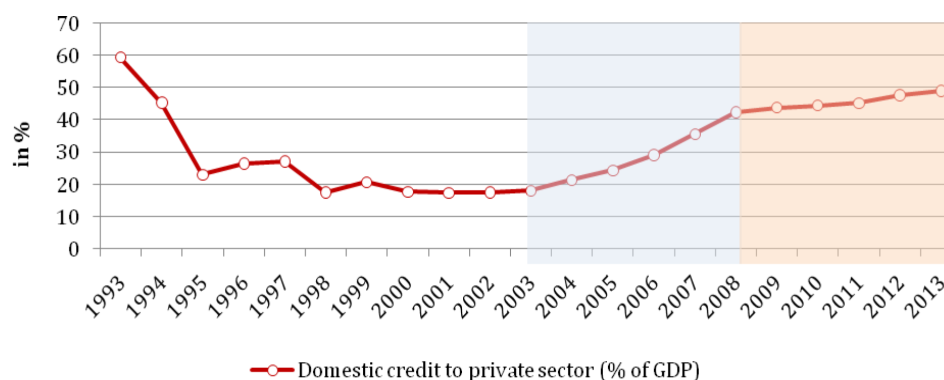
Based on the previous empirical research are studied only economies with high per capita incomes can experience rapid growth in financial assets. Such countries are none other than the developed countries in the world. But what is crucial here is what constitutes the financial assets that wealth-holders must have as a result of high per capita income. Only when we can identify those financial assets will we be able to approximate financial deepening adequately. In short, and for our purpose, we borrow a lift from in asserting that financial deepening simply means an increase in the supply of financial assets in the economy. Therefore, the sum of all the measures of financial assets gives us the approximate size of financial deepening. That means that the widest range of such assets as broad money, liabilities of non-bank financial intermediaries, treasury bills, value of shares in the stock market, money market funds, etc., will have to be included in the measure of financial deepening. It has to be noted that if the increase in the supply of financial assets is small, it means that financial deepening in the economy is most likely to be shallow; but if the ratio is big, it means that financial deepening is likely to be high. He further went on to stressed that developed economies are characterized by high financial deepening, meaning that the financial sector in such countries has had significant growth and improvement, which has, in turn, led to the growth and development of the entire economy. Republic of Macedonia, the past 20 years witnessed a positive trend towards increased financial deepening. Financial intermediation has grown and in that context bank credit has risen dramatically in relation to GDP. Given the positive relationship between financial development and economic growth, this trend has been a beneficial one. However, this process in Macedonia has not always been smooth. While in some countries, financial deepening it has been a bumpy process with sharp accelerations in aggregate credit, or credit booms, sometimes followed by episodes of financial distress and banking crises has, in Macedonia this process has followed an even path. Therefore, the widespread belief that credit booms are at best dangerous, and at worst a recipe for financial disaster contributed to the importance of a financial deepening. Yet, historically, only a fraction of booms ended in crashes, while many soft-landed without causing major disruption. This prompted the National Bank of Republic of Macedonia (NBRM) to come up with new banking reform policies in 2005 in a bid to strengthen and increase the financial assets of banks. Banking reforms are part of financial sector reforms, and financial sector reforms are propelled by the need to deepen the financial sector and reposition it for growth to become integrated into the global financial architecture and evolve a banking sector that is consistent with regional integration requirement, savings mobilization and international best practices. The recent banking sector reforms which experienced consolidation of banking institutions affected the level of financial deepening in the country. Consolidation of banks has been the major reform policy instrument being adopted recently in correcting deficiencies in the financial sector. The size of financial institutions relative to the size of financial markets is often called the financial structures. A large literature is devoted to the topic of whether and under which conditions the mixture of financial institutions and financial markets in an economy exerts an influence on economic development (for an overview, see World Bank 2012). Financial structure differs markedly across economies in the World. Over the full sample period, the annual average value of the financial structure ratio is 279. Countries such as Australia, India, Singapore, and Sweden have this ratio at or below 2.35 (10th percentile), while Bolivia, Bulgaria, Serbia, and Uganda are examples of countries where this ratio is over 356 (90th percentile). For financial markets, earlier work by Levine and Zervos (1998) indicates that the trading of ownership claims on firms in an economy is closely tied to the rate of economic development. To approximate the size of stock markets, a common choice in the literature is stock market capitalization to GDP. For bond markets, a commonly used proxy for size is the outstanding volume of private debt securities to GDP. The sum of these two provides a rough indication of the relative size of the financial markets in various countries. There is substantial variation in this indicator among countries, by size and by income level. For example, over the 2008-2010 periods, the world-wide average value of this ratio was 131 percent, but individual country observations ranged from less than 1 percent to 533 percent. The average for developed economies was 151 percent, while the average for developing economies was about a half, at 76 percent. Also, in bigger countries, financial markets tend to play a relatively larger role relative to the size of the economy. Countries in the highest quartile of the world-wide distribution include not only the USA, Canada, Japan, and other major developed economies, but for example also China and Malaysia. Thus, the goal of this paper is empirically measure of the important characteristics of financial system over a long time period. Specifically, this paper examines the depth like a characteristic of financial system and is focused in measuring financial characteristics of banking system of Republic of Macedonia.

Financial Depth of Macedonian Banking System

In the 1991's, Macedonia alongside other ex Yugoslavia countries experienced economic transition and widespread financial liberalization, interest rate deregulation, the entry of new banks and the likes, with the intention to deepen the financial sector but ended up producing financial openness without much financial depth. The banking system of Macedonia has undergone significant changes in terms of the policy environment, number of institutions, ownership structure, depth and breadth of markets, as well as in the regulatory framework. The financial system comprises of the

central bank, commercial banks, mutual funds, brokerage firms, discount houses, and stock exchange, to mention just few. These institutions trade in financial instruments such as domestic currency, foreign currency, stocks, bonds, derivatives and so on, and in the process mobilize funds from surplus unit (savers) to deficit unit (investors). Although a wide variety of financial institutions and markets exist, commercial banks overwhelmingly dominate the financial sector and traditional bank deposits (commercial banks) represent the major forms of financial saving. Therefore, the financial markets have been adjudged to be shallow when compared with advanced and emerging economies. In the previous researches is stressed that the legacy of financial liberalization in the country was the establishment of weak banking organizations that was unable to open up the opportunities created by the process of liberalization. Reflecting this in Macedonia saw the country being relegated to having less financial depth than other developing areas. As a result, banks were vulnerable to systemic crisis and the systemic risks in the country high. Thus, the Macedonian banking system was evidently limited in its resources mobilization with an adverse effect on the economy which hit more on the poor since they are the most vulnerable and hence financial deepening. For financial institutions, the variable that has received much attention in the empirical literature on financial development is private credit, defined as deposit money bank credit to the private sector as a percentage of GDP. Despite the literature‘s focus on banks, the recent crisis has highlighted issues in non-bank financial institutions (NBFIs). The coverage of NBFIs by data is much less comprehensive than that of banks.

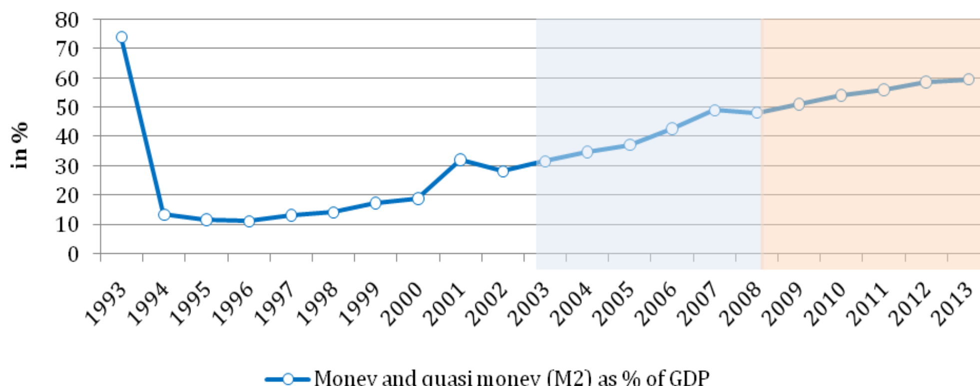
Figure 1: Credit to private sector (% of GDP)Average 2004-2008 Average 2009-2013



Source: National Bank of Republic of Macedonia

Domestic credit to private sector in percent of GDP (PSC/GDP) is the ratio of private sector credit to gross domestic product. It also measures the financial depth, but captures only the flow of credit to the private sector, i.e. it concentrates on credits issued by intermediaries other than the central bank. The logic is that the more private credit is available to an economy the more opportunities exist for continued growth. Bank financing of the economy measured by the ratio of private sector credit to GDP stood at 17.6 per cent (2001) though lower than that 49.1 per cent of 2013.
Ratio of domestic bank credits to GDP - Credit expansion follows financial deregulation and cyclical “overheating”. The ratio of domestic bank loans to GDP usually rises in the months preceding a banking crisis or in the early phase of a banking crisis. As the crisis unfolds banks’ credit activity decreases sharply, banks become more cautious, and total economic growth slows. Second the most frequently used conventional proxy to measure the degree of financial intermediation is the ratio of a less liquid monetary asset, normally M2 or M3, to the level of nominal GDP. Because of the rising trend in financial innovation in the various financial systems, a broader measure of money stock (M3) should be employed in order to capture the extent and the degree of financial intermediation in Republic of Macedonia. However, none of the countries in this study publish data on M3. Therefore, the first proxy of the degree of financial deepening is the ratio of the stock of broad money (M2) to GDP.
Money and quasi money (M2) as a percent of GDP (M2/GDP) is the ratio of currency outside bank to money supply, it measures the intermediation rate (the banking habit). Below is a chart showing the ratio of deposit banks assets to GDP and a graph showing the ratio of broad money (M2) to GDP, private sector credit to GDP. Throughout the process of development, the ratio M2/GDP has a tendency to rise as access to banking and alternative instruments of store of value (investment and savings) spread. Therefore, an increase in this variable signifies a larger financial sector and therefore an expansion in the financial intermediary sector relative to the rest of the economy. However, as markets mature, the ratio M2/GDP tends to decline as other financial instruments not included in M2 are developed and become increasingly available.

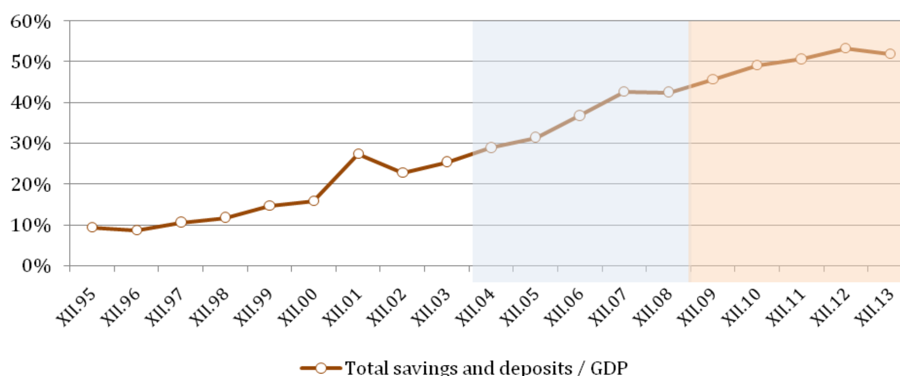
Figure 2: M2 as a % of GDP Average 2004-2008 Average 2009-2013



Source: National Bank of Republic of Macedonia

Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This definition of money supply is frequently called M2. A review of the financial deepening indicators show that, the depth of the financial sector as measured by the ratio of M2 to GDP even though has been fluctuating but has increased more than previous years. For the period of the study the ratio at the end of 2000 stood at 18.9 per cent and 59.6 per cent for the year 2013. The ratio of **bank deposits to GDP (BD/GDP)**refers to the total deposit, which is made up of all checking, savings, time deposits of the banking system to economic activity. This measure serves as a proxy for the supply of funds to banks, and it provides an indication of the amount of funds that are available to the banking sector for its lending activities. This ratio captures the liability side of the banks' balance sheet. These ratios tend to higher for high-performing banks. **BD/GDP** is the ratio of total savings and time deposit with commercial banks to gross domestic supply. Decline in total bank deposits to GDP - When a banking crisis is looming, domestic residents, who are usually better informed than foreigners, slowly loose faith in the stability of the banking sector and begin to withdraw their savings. Therefore, a drop in bank deposits can be expected before a crisis (Demirguc-Kunt and Detragiache, 1999).

Figure 3: Total savings and deposits / GDPAverage 2004-2008 Average 2009-2013



Source: National Bank of Republic of Macedonia

To capture the key features of financial systems, one would ideally like to have direct measures of how well financial institutions and financial markets (a) produce information ex ante about possible investments and allocate capital; (b) monitor investments and exert corporate governance after providing finance; (c) facilitate the trading, diversification, and management of risk; (d) mobilize and pool savings; and (e) ease the exchange of goods and services. But,

obtaining such direct measures of these financial functions is a major challenge. Levine (2005) points out that such empirical proxy variable often do not accurately measure the concepts emerging from theoretical models.

Methodology and Data

This paper uses a descriptive financial ratio analysis to measure, describe and analyze the financial deepening of the Macedonian banking system during the period 2004-2013. Hence, the paper examines whether the difference in the deepening of the banks in the period2004-2008 is statistically different from that of a 2009-2013 period. A student's *t*-test is employed to test the hypothesis that the means of the two periods are the same on the three variables as detailed in Table.1. The following hypothesis has been tested:

H0: $\mu 1 = \mu 2$,

H1: $\mu 1 \neq \mu 2$.

Where μ1 is the mean for 2004-2008 and μ2 is the mean for 2009-2013. Inferences about the hypothesis are made by looking at test statistics and critical values associated with the mean.

Table 1: The main indicators of financial deepening

Deposit banks institutions	**Indicators**
	Private sector credit to GDP
FINANCIAL DEPTH	M2 to GDP
	Deposits to GDP

If P-value ≤ α, reject the null hypothesis. If P-value > α, do not reject the null hypothesis. The results of the test are to be handled with caution as there are very few observations and the statistical tool might not be very effective when the sample is small.For characteristics, this paper presents measures for financial institutions (in particular banks). Table 1 provides a summary representation of financial system characteristics, building on a review of empirical literature on financial systems.

Results Obtained from the Analysis of the Financial Deepening for the Macedonian Bankig System

The selection of the financial ratio analysis (FRA) method for this study is motivated by the fact that from the review of past studies on banking in Republic of Macedonia and to the researchers' knowledge, no researcher has used FRA to measure the deepening of commercial banks in Macedonia during 2004-2013. FRA permits a historical sketch of bank returns and risks which Hempel *et al*, (1994) suggests presents an opportunity to evaluate the past performance of the bank which is an important step for planning for future performance. Financial ratios can be used to identify a bank's specific strengths and weaknesses as well as providing detailed information about bank profitability, liquidity and credit quality policies (Hempel *et al*, 1994: Dietrich, 1996). Additionally, one other advantage of FRA is its ability and effectiveness in distinguishing the banks deepening level between two periods being analyze target.
Based on realized researches were it's highlighted that the recent financial global crisis has brought to the fore the importance of financial stability and how it may affect the overall Macedonian economy (Petrovska and Mihajlovska, 2013).

Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of non equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises. The financial corporations include monetary authorities and deposit money banks, as well as other financial corporations where data are available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies. The range of financial assets to be considered in this study as measures of financial deepening include, the ratio of private credit to GDP, ratio of broad money (M2) to GDP, and the ratio of bank deposits to GDP.

Table 2: Results of the analyzed variables

	Indicator	Mean 2004-2008	Mean 2009-2013	p - value	Decision
Financial deepening	PSC/GDP	30.3780	45.9560	0.012	Reject H_0
	M2/GDP	42.4300	55.8600	0.003	Reject H_0
	BD/GDP	.3660	.5020	0.003	Reject H_0

With regard to the deepening indicator PSC/GDP shows banks high level of financial deepeningin the period 2009-2013 compared to the period 2004-2008. As shown in Table 2, the meanfor PSC/GDPwas 30.378 for 2004-2008 compared to the 45.956 for 2009-2013. The second indicator M2/GDPshows a similar trend with the mean for 2004-2008 being 42.430 comparedto 55.860 for 2009-2013. Furthermore, according to the mean values of the third indicator BD/GDP being 0.366 for the period 2004-2008 in comparison with the value 0.502 for 2009-2013, it can be highlighted the similar trend. This indicates that the banks have significantly deepened their system during 2009-2013. The P- values for PSC/GDPand M2/GDPare 0.012and 0.003 respectively, and, for BD/GDP the p-value is 0.003. Therefore the differences between the deepening forthe two periods are statistically significant as the P-values are below 0.05 andtherefore the null hypothesis has to be rejected leading to the conclusion thatthe financial deepeningextended during 2009-2013.
From the results of the student *t*-test, it can be argued that despite thefinancial turmoil that engulfed the global economy and affected financialinstitutions around the world, statistically significant differences were observed in the financial deepening of the banking system of Macedonia during the second time period, respectively during 2009-2013.

Conclusions

This paper, according to the determined research objectives measured the financial deepening of Macedonian banking sector over the period 2004-2013. The results indicate that the overall financial deepening bank in terms of credit to private sector to GDP, money and quasi money and GDP and bank deposit to GDP ratios has been deepened since 2009. Although the banks aggressively increased their loan portfolios, sound andeffective credit risk management policies have been in place so that the lendingbehavior could still be contained. This is reflected in the downward trend innonperforming loans.We also found significant differences in credit to private sector to GDP ratio, money and quasi money to GDP and bank deposits to GDP ratio for the period 2004-2008 and the period 2009-2013.

The Financial Sector has an essential role in economies most especially in developing economies. Developing the financial sector means improving the functions, structures, and the human resource, to ensure efficient delivery of services to the private sector. Policymakers should design the policies which will promote the financial and capital markets, remove the obstacles that impede their growth and strengthen the health and competitiveness of the banking system. They must introduce measures that increase accountability and autonomy of financial institutions as well as restructuring and recapitalization of financial institutions. The Government must also ensure efficiency in its regulation and supervision of all financial institutions in allowing more private banks and non-bank financial institutions to broaden their financial market to accelerate financial development and improve the financial structure that leads to increase economic growth of Macedonia. These will boost private sector development and investments which is the engine of growth and development.

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