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## **Essay on Finance-Growth Nexus**

**Abstract:** There is a long tradition in literature that banks can play a special role in the propagation of economic fluctuations. Theory suggests many channels through which financial system affects, and is affected by, economic growth. One of the most important empirical studies on this topic shows a strong positive relation between financial development and economic growth. However, the hypothesis that credit expansion is the main development instrument was challenged in the Asian crisis in the second half of the 1990s, and then even more strongly in the crisis after 2008 which was followed by almost a decade of economic stagnation. Development of the banking sector in Southeast European countries in the pre-crisis period was characterized by relatively high credit growth rates and, consequently, with an increase of the credit-to-GDP ratio. Some authors argue that the marginal effect of financial depth on economic growth becomes negative when credit to the private sector reaches about 100% of GDP. Taking into account relatively low level of credit-to-GDP ratio, we may assume that there is still enough room for finance to contribute to economic growth in Southeast European countries.

**Key words:** finance-growth nexus, credit-to-GDP ratio, Southeast European countries

**JEL Classification:** E44; O16

### **1. Introduction**

Economic growth has always been one of the most inspiring research topics for many economists. In the second half of the 18th century, Adam Smith believed that many banks in Scotland at that time were a key factor which led to the rapid development of the Scottish economy (Blum,

et al, 2002). Therefore, possibility of a link between the development of financial and real sector exists since the economics itself. At the beginning of the 20th century, Schumpeter (1911) claimed that loans are an essential source of funds that enable entrepreneurs to contribute to economic growth. An integral part of Schumpeter's theory is the thesis that financial intermediaries enable technological innovations and economic development.

Although the list of possible determinants of economic growth is continually expanding, there is a significant theoretical and empirical material on the impact that financial development has on strengthening economic growth and development. Regardless of the extensive research on the role of the financial sector in economic growth and development, many issues still remain unresolved. This is the topic on which economists have completely different opinions, from Robert Lucas (1988) who dismisses finance as an "over-emphasized" determinant of economic growth to Merton Miller (1998) who argues that "the idea that financial markets contribute to economic growth is too obvious for serious discussion" (Levine, 2005). However, in general, it is acknowledged that financial markets and the banking system both positively contribute to economic growth, at least at the initial stage of a country's development and when the financial system efficiently manages financial risks (International Monetary Fund, 2015).

As Driscoll (2003) emphasizes, there is a long tradition in the literature on monetary policy starting with Brunner and Meltzer (1963) and later revived by Bernanke (1983) and many other authors, that banks may play a special role in the propagation of economic fluctuations. This role arises from the fact that there are many firms which are dependent on bank loans since they do not have enough own funds accumulated or any other possibility to finance themselves than bank loans. According to Driscoll (2003), there are several difficulties in testing for the presence of the lending channel. Also, it is very demanding to find the answer on the related question whether bank loans have effects on output. There is also a reverse causality problem: loans may be endogenously rising in response to expected future increases in output.

The hypothesis that credit expansion is the main development instrument had been challenged in the Asian crisis in the second half of the 1990s, and then even more strongly with the 2008 crisis which was followed by almost a decade of economic stagnation. However, one of the most important studies on this topic shows a strong positive relation between financial development and economic growth and development. This study has included a sample of even 80 countries during the period from 1960 to 1989 (King & Levine, 1993). Based on the results of their research, authors concluded that Schumpeter might have been right when it comes to the importance of financial system for economic development.

A significant number of scientific papers show that relevant arguments are in favour of the thesis that the causal link between financial and real sector goes in both directions. This interaction can be simultaneous, which means that the developed financial market leads to real growth, while the growing needs of the economy for financial resources are fulfilled by the advancement of financial sector. This relationship can largely depend on the level of economic development at a given moment. Therefore, countries that have not yet reached their full potential for economic development can have significant benefits in terms of economic growth through financial sector development, while in highly developed countries the financial system increasingly begins to follow development of real sector (Patrick, 1966). Although there are also different opinions, the foregoing is the most prominent hypothesis about the linkage between financial and real sector.

Theoretical approach on finance-growth hypothesis is given in the first part of the article and followed by the empirical evidence on finance-growth nexus. The third part provides an overview on the finance-growth nexus in Southeast European countries, while the concluding remarks give the author's position on the issue.

## 2. Theoretical approach on finance-growth hypothesis

According to Graff & Karmann (2006), theoretical models give sophisticated rationales for the assumption that well-functioning monetary and banking systems and capital markets may be of crucial importance for economic growth. Some authors stress the banking system's ability to create money and to channel it into productive and innovative uses while others claim that it is the information gathering and processing, which is accomplished by professional actors on credit and capital markets, that helps to improve the efficiency of capital allocation.

Among theories related to long-term economic growth, neoclassical theory and endogenous growth theory are distinguished. Neoclassical theory emerged in the middle of the previous century and points out three well-known elements of long-term economic growth: technology, capital, and labour. Thus, this theory emphasizes that economic growth, beside changes in the amount of engaged capital and labour, is a consequence of technological progress that is exogenously determined. It is regarded that the modern theory of economic growth begins with the neoclassical Solow's model, whose main deficiency is that technological progress is considered an exogenous category. Even the author of this model Robert Solow was aware of this shortcoming but was not able to overcome it given the analytical apparatus that he had at his disposal.

According to endogenous growth theory, which emerged in the 1980s, economic growth is the result of factors acting within the economic system itself, and not beyond it. Actually, there are several models within endogenous growth theory that try to make technological progress endogenous in different ways. In line with Solow's growth model, convergence occurs as a process of catching up between countries of different levels of economic development due to the faster growth of developing countries in relation to developed countries, which is a consequence of the law of diminishing returns on capital. Endogenous growth models leave the assumption of convergence that exists in neoclassical model, i.e. convergence does not even have to happen. In other words, less developed countries do not necessarily have to reach developed countries, but can remain at the same level of economic development. However, empirical testing of endogenous growth models is still at a relatively low level, with results that are often contradictory.

Both neoclassical and endogenous growth theories put the emphasis on the so-called primary determinants of economic growth, and these are capital accumulation and technological innovation. It is common to these theories that they are based on the assumption that savings are equal to investments. Given that investment entities do not have enough of their own funds, but they take loans or issue securities, the savings would be equal to investments in the conditions of a perfect financial market. However, due to asymmetric information and transaction costs, a financial market does not function perfectly.

Nowadays, increasing importance is attributed to human capital as a factor of economic growth. Improving the educational structure of the population contributes to increasing labour productivity, expanding of scientific research potential, developing of creativity and more efficient production of goods and services. In order to achieve these effects, investments in education are necessary.

There are five hypotheses on the type of relationship between financial system and economic growth and development (Blum et al, 2002):

1. Economic growth is driven by the development of financial system (supply-leading approach). According to this approach, financial system affects economic growth by increasing the supply of financial services, which leads to the growth of economic activity. This means that an underdeveloped financial system can represent the main obstacle to economic growth, while a highly developed financial system can contribute to achieving high and sustainable economic growth rates, provided that there are no restrictions in other factors. Particular emphasis is put on the ability of the banking system to create and direct money into productive and innovative projects, which stimulates economic growth.

2. Development of the financial system is initiated by economic growth (demand-following approach). This approach implies that economic growth leads to an increase in demand for financial services, which leads to development of financial markets and financial institutions.
3. There is a mutual causality between development of financial system and economic growth (feedback-causality approach). This approach implies a two-way causal link between financial development and economic growth. This relation indicates a return feedback between financial and real sector.
4. Development of financial system in certain circumstances can negatively affect economic growth. This approach is based on the negative effects of financial crises.
5. Development of financial system and economic growth are not causally connected. This view implies that the presence of a positive correlation is only a consequence of a random and simultaneous positive or negative trend in financial and real sector.

Early work by McKinnon (1973) and Goldsmith (1969), among others, highlighted the key role in economic development that could be played by a banking system (Barajas, Chami & Yousefi, 2013). According to theory, there are four basic functions essential to economic development and growth: mobilization of savings, allocation of resources to productive uses, facilitating transactions and risk management, and exerting corporate control. Through these functions, a country providing an environment conducive to greater financial development would have higher growth rates, with much of the effect coming through greater productivity rather than a higher overall rate of investment (Barajas, Chami & Yousefi,).

### **3. Empirical evidence on finance-growth nexus**

According to Levine (2005), there is a growing body of empirical analyses that includes firm-level studies, industry-level studies, individual country-studies, time-series studies, panel-investigations, and broad cross-country comparisons, which demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. The econometric research so far suggests that both financial intermediaries and markets matter for economic growth and that reverse causality alone is not driving this relationship. Also, microeconomic-based evidence is consistent with the view that better developed financial systems ease external financing of firms, which illuminates one of the mechanisms through which financial development influences economic growth. As Levine

(2005) points out “theory and evidence currently make it difficult to conclude that the financial system merely and automatically responds to economic activity, or that financial development is an inconsequential addendum to the process of economic growth”.

The empirical literature provides widespread evidence that financial depth is associated with higher rates of economic growth (Barajas, Chami & Yousefi, 2013). Financial depth relates to the extent to which an economy is making use of bank intermediation and financial market activity. Despite the large volume of empirical research, many questions still remain unresolved and there is still no consensus on the direction of the relation between financial and real sector. According to Nyasha & Odhiambo (2017) studies of Schumpeter (1911), Goldsmith (1969), McKinnon (1973), Shaw (1973), and King & Levine (1993), Levine & Zervos (1996), Adjasi & Biekpe (2006), Akinlo & Akinlo (2009), Kargbo & Adamu (2009), Hassan et al (2011) and Adu et al (2013) support a positive relationship between financial development and economic growth.

Various sources of economic growth have been considered over the past decades, including: investments, human capital, innovation and research and development activities, economic policies and macroeconomic conditions, trade openness, foreign direct investments, institutional framework, political factors, geographical characteristics and demographic trends. In addition, lately there is an increasing interest in how different socio-cultural factors can influence growth. According to some authors, trust is an important determinant within this category, and economies of trust are expected to have stronger incentives for innovations, capital accumulation and richer human resources, which all contribute to economic growth (Petraikos, Arvanitidis & Pavleas, 2007).

In one of the most well-known recent studies on the impact of finance on economic growth and development, a sample of 21 OECD countries for a period of 140 years is included (Madsen & Ang, 2015). Unlike the most studies in this field, which mainly focus on savings and investments as the main transmission channels through which financial system affects economic growth and development, this study also takes into account ideas (through investments in research and development) and education. The results of this research show the significance of these determinants for economic growth.

As Levine (2005) emphasized in his paper, all methods have their shortcomings but that one common problem relates to the proxies for financial development. Theory suggests that financial systems influence growth by easing information and transactions costs and thereby improving the allocation of capital, corporate

governance, risk management, resource mobilization, and financial exchanges while the empirical measures of financial development, however, generally do not directly measure these financial functions. According to Levine (2005) there is a growing body of research that examines direct laws, regulations, and macro-economic policies shaping financial sector operations (LLSV (1997, 1998), Beck, Demirguc-Kunt, & Levine (2003), Barth, Caprio, & Levine (2003), Bencivenga & Smith (1992); Huybens & Smith (1999); Roubini & Sala-i-Martin (1992, 1995), Boyd, Levine, & Smith (2001)).

Also, in accordance with Levine (2005) there is another research area that studies the political, cultural, and even geographic context shaping financial development (LLSV (1998), (Glaeser & Shleifer, 2002), Haber (2003), Pagano & Volpin (2001), Rajan & Zingales (2003), and Stulz & Williamson (2003)). He emphasizes that finance may be influenced by political, legal, cultural, and even geographical factors and that much work is required to better understand the role of financial factors in the process of economic growth.

According to Bijlsma, Kool & Non (2017) the results of a meta-analysis they performed on in total 551 estimates from 68 empirical studies that take private credit to GDP as a measure for financial development, show that there is evidence for positive but decreasing effect of financial development on growth. They distinguished between linear (302 estimates) and logarithmic (249 estimates) specifications. Also, they noted that effect they found is substantially smaller than suggested by much-cited studies such as Levine (2005). In that sense, their analysis supports recent research that argues that the pre-crisis estimates of the sizeable positive effect of more developed financial markets on economic growth were overly optimistic.

#### **4. Finance-growth nexus in Southeast European countries**

Financial systems of Southeast European countries are mainly bank-dominated and largely foreign-owned by banks from the euro area, primarily from Austria, France, Italy, Greece, and Slovenia. Increased financial globalization has helped in creating a more developed financial system and has contributed to reducing the cost of borrowing, higher quality financial services that have become widely available, risk diversification, technological and institutional spillover. But the region has thus become more vulnerable to external shocks. It should be noted that there are papers on financial stability indicators and early warning systems for financial crises related to some of these countries (e.g. for Croatia see Dumičić, 2016; Ahec Šonje, 1999 and 2002, for Montenegro see Asanović, 2017) as well

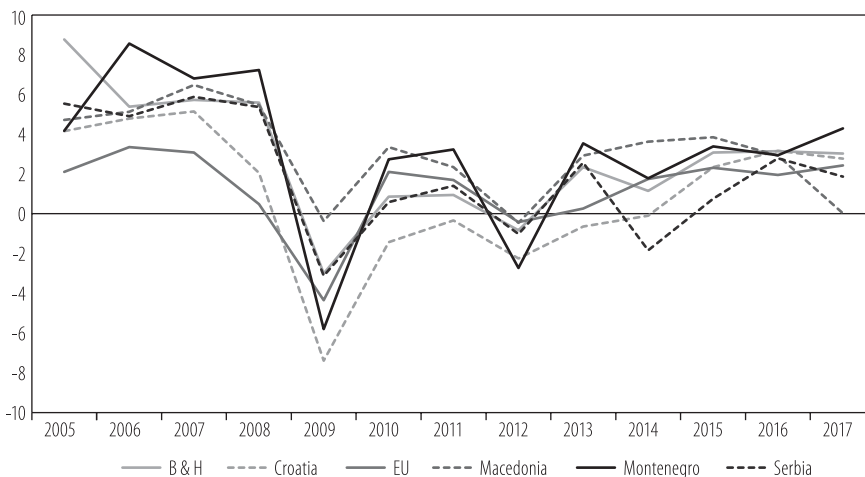


as the paper related to 5 Southeast European countries (i.e. Montenegro, Serbia, Bosnia and Herzegovina, Macedonia, and Croatia, see Asanović, 2018).

A relatively simple structure of financial system is a common feature of Southeast European countries. Development of the banking sector in these countries during the pre-crisis period was characterized with relatively high credit growth rates. Economic slowdown and sudden stop of lending activity supported by the global economic crisis has led to much more deepening of the crisis in these countries at the time. According to Fabris & Galić (2015), during the expansion period, we should turn to saving to protect the economy from overheating and price bubble bursting, and that is exactly what was missing on the eve of the global financial crisis and what could have prevented or mitigated its impact.

Foreign direct investments led to high growth rates in the pre-crisis period in the countries of the region. The drying up of foreign direct investments, primarily caused by the global economic crisis, also reflected on the rate of economic growth. Countries of the region face numerous challenges due to specific constraints on macroeconomic policies, since they have very limited monetary policies in combination with relatively limited fiscal policies. According to Fabris (2018), the global financial crisis has posed numerous challenges to the traditional monetary policy. Also, high degree of euroisation significantly complicates the efficiency of monetary policy instruments in these countries. Recently, austerity measures have mostly been implemented throughout the region.

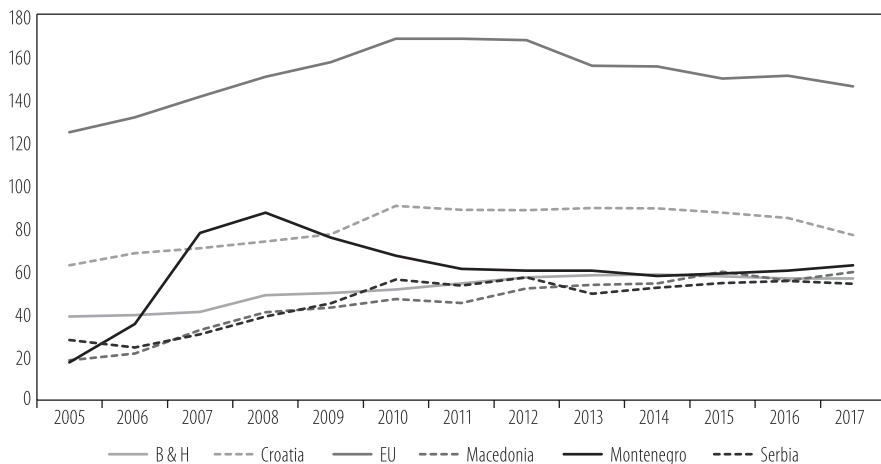
**Graph 1: GDP growth (annual %)**



Source: World Bank

As we may see in Graph 2, the credit-to-GDP ratio in SEE countries is significantly lower in comparison to the EU. Namely, at the end of 2017, this ratio ranged from 54% in Serbia to 63% in Montenegro, with the exception of Croatia where this ratio stood at 77%. There is a growing number of studies that point to the existence of a threshold for the growth enhancing impact of financial development, particularly when taking into account data after global financial crisis (Iwanicz-Drozdowska et al, 2018). As Iwanicz-Drozdowska et al emphasize, some authors even calculated the marginal effect of financial depth on output growth becomes negative when credit to the private sector reaches 80-100% of GDP (Arcand, Berkes & Panizza, 2015) or 100% of GDP (Dabla-Norris & Srivisal, 2013). After that threshold, instead of smoothing, the financial system amplifies cyclical swings in economic growth and increases the vulnerability of the economy to financial crises.

**Graph 2: Credit-to-GDP ratio (%)**



Source: World Bank

Iwanicz-Drozdowska et al (2018) found evidence of a negative impact of bank credit on economic growth and the significance of cyclical fluctuations of bank credit. On the contrary, a higher market share of loans granted by foreign-owned banks in a cyclical upswing and stock market capitalisation are found to have a proactive effect on growth. Their findings indicate that the development of the banking sector (measured by the bank credit-to-GDP ratio) harms economic growth, while the development of the capital market (measured as the stock market capitalisation-to-GDP ratio) enhances it.

Sachs, Tornell & Velasco (1996) are among the first ones that popularized the measure of credit growth to GDP (Frankel & Saravelos, 2010; p. 14). They consider it a good indicator of increased vulnerability of the banking system since accelerated credit expansion probably happened due to a decrease in lending standards implemented by banks. When loans are growing faster than GDP, debt for the overall economy is increasing faster than funds for the repayment of the debt. This might be a sign that the banking sector is becoming more vulnerable. When volume of loans is increasing significantly faster than GDP, then the debt falls on the household and corporate sectors.

However, not every period during which loans to private sector are growing faster than the nominal GDP is considered a credit boom (Ottens, Lambregts & Poelhekke, 2005; pp. 1-3). One very important reason why loans can temporarily grow faster than GDP is that companies' investments in working capital when funds have to be paid in advance in order to get inputs for production often fluctuate in front of the business cycle. Therefore, deviation that can exist between credit and GDP is not unusual. Also, credit growth can be above GDP growth during a longer period of time due to financial development, reflecting the growing importance of financial intermediation. A more developed financial system can contribute to economic growth, while credit boom is an episode of excessive credit expansion that is unsustainable.

Schularick & Taylor (2009) argued that financial system is not only amplifier of the economic shocks in terms of financial accelerator, yet financial system is fully capable to create shocks itself. They state that their conclusions confirm the ideas represented by Minsky (1977) and Kindleberger (1978) that financial system is prone to generating economic instability through endogenous credit booms. However, as Schularick & Taylor state, some authors emphasize that high credit growth is not an independent source of shocks (Borio 2008, Hume & Sentance 2009), i.e. that "credit channel is an enhancement mechanism, not a truly independent or parallel channel" (Bernanke & Gertler, 1995).

## 5. Concluding remarks

The relationship between financial intermediation and economic growth is highly complex since it depends on numerous factors. However, it is acknowledged that the financial market and the banking system positively contribute to economic growth, at least at the initial stage of a country's development.

Development of the banking sectors in SEE countries during the pre-crisis period was characterized by relatively high credit growth rates and, consequently, by

increase of the credit-to-GDP ratios. There is a growing empirical research suggesting that the marginal effect of financial development on economic growth becomes negative when credit to the private sector reaches about 100% of GDP. Taking into account relatively low levels of the credit-to-GDP ratio in SEE countries (approximately 60%), we may assume that there is still enough room for finance to contribute to economic growth in these countries.

Therefore, in accordance with the literature on financial development and economic growth and growing evidence in other developing countries, it is expected to find a positive relationship between banks and their credit activity and sustainable growth and development in SEE countries. While it is to be expected that lending activity indeed contributes to economic growth in these countries, it is also necessary to empirically test this hypothesis. Hence, further research on this topic is needed.

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