# FINANCIAL DEVELOPMENT MEASUREMENT: COMPARISON OF THE HIGH- AND LOW-INCOME COUNTRIES

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## Abstract

The literature that treats financial sector development and its impact on various economic phenomena does not recognise a single indicator of financial development measurement, nor do the various regulators of the financial sector have a single indicator to measure its development. Divergencies in financial development proxies used have prompted the International Monetary Fund (IMF) staff to create an indicator that includes all aspects of financial sector development (Čihák, Demirgüç-Kunt, Feyen, & Levine, 2012). The purpose of this paper is to show the main indicators of the financial development measurement and the gap between high- and low-income countries' financial systems using the financial development index (FD index) developed by the IMF. This paper introduces the financial development indicator and uses it to compare different income group countries. The results show differences in the levels of financial development across countries. We also notice an improvement of the overall financial system in all of the groups of countries, showing an increasing trend in the last 10 years compared to the previous 10 years, but the desperate fact is that low-income countries have a long way to go to reach the level of financial development of high-income countries.

**Keywords:** Financial Development, Financial Indicators, High- and Low-Income Countries

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## 1. INTRODUCTION

For researchers aiming to reveal the impact of the financial sector on economic growth or any other economic phenomena, the first question to think about is which indicator should be used to estimate the development of the financial sector. The literature shows divergences in financial development proxies used which have prompted the International Monetary Fund (IMF) staff to create an indicator that includes all aspects of financial sector development. A financial development index (FD index) or an index of development of the financial sector is an index developed by the IMF staff which shows the level of development of financial institutions and financial markets in terms of depth, accessibility, and efficiency. This index includes all aspects of the development of the financial sector such as financial institutions and financial markets.

There is extensive literature that explores the impact of the development of the financial sector on various economic phenomena focusing on a specific country or region. During the analysis of the literature, we notice the application of different methodologies, but what interests us, in this case, is the variability in terms of the variable which expresses the development of the financial sector or

any aspect of it. Financial development, respectively banking sector development is measured by different proxies, but the most frequently used one is Private Credit as % of GDP (Rajan & Zingales, 1998; Caporale, Rault, Sova, & Sova, 2009; Hagmayr, Haiss, & Sümegi, 2007). On the other side, the most used indicator for financial markets development is the stock market capitalisation to GDP (Rajan & Zingales, 1998; Asteriou & Spanos, 2019; Asafo-Adjei et al., 2021).

The primary aim of this paper is to present the problem of the lack of a financial development measurement single indicator and then using a single indicator, such as the FD index and its sub-components, a financial institutions index (FI index) and a financial markets index (FM index), to compare the financial development of high- and low-income countries. As to the main aim presented above the objectives of this research are to show the different indicators used to estimate the development of the financial sector, which are the most used in the literature, and the final and most important objective is to compare the financial development of high- and low-income countries by using the FD index and some other indicators.

To assess whether a financial system is sound and stable as well as to compare financial systems of developing countries and those of developed countries, this paper presents some characteristics of financial institutions, especially banks. For comparison of the groups of countries and indicators, we also used the indicators analyzed by Čihák, Demirgüç-Kunt, Feyen, and Levine (2012) using data which are available in the Global Financial Development Database. These indicators include four aspects of the financial sector: depth, accessibility, efficiency, and stability. Each of these characteristics is measured by certain indicators, some of which we will analyze in the following sections. The analysis intends to compare the last decade capturing the period of 2009–2019 with the previous one 1998–2008. The intention is to show whether there is an improvement with time varying between different income countries and within the groups of countries. Data comparisons between different groups of income countries and different periods reveal a huge gap in financial development between high- and low-income countries, and that the structure of financial systems of low-income countries consists mainly of financial institutions, confirming once again that financial markets in these countries play a small role.

The remainder of this paper is structured as follows. Section 2 presents the literature review about the main financial development indicators used. Section 3 presents the research methodology. Section 4 presents and discusses the results of the main indicators enabling a comparison between high- and low-income countries. Section 5 presents a summary and findings of the paper.

## 2. LITERATURE REVIEW

### 2.1. Preliminary remarks

A vast part of the literature shows that different authors have estimated the development of the financial sector in different ways, measuring it by the depth of its development, efficiency, stability, access to finance, size, etc. Measuring the development of the financial sector becomes even more difficult when we take into account that this sector includes financial markets and financial institutions. There are some countries in which financial markets are not developed at all, therefore some authors have analyzed the impact of a financial structure on economic growth (Levine, 2000; Back & Levine, 2002; Demirgüç-Kunt, Feyen, & Levine, 2012).

To assess whether a financial system is based on a banking system or that of capital markets, an indicator called the financial structure report is used. The financial structure is composed of financial institutions (banking and non-banking) and financial markets. It is also considered that it is important to assess the effective structure of the financial system, although in many studies it has been concluded that the economic growth of a country is not impacted by the financial structure, or whether the financial system is based only on banks or even capital markets, findings of such have been achieved by Back and Levine (2002) according to whom the financial structure has no significant impact on the growth of industries. Levine (2000) also states that the financial structure does not explain the patterns of industrial growth or efficient capital allocation, which shows that the quality of financial services provided by the entire financial system has a greater impact on the economic growth rather than the financial structure. On the other hand, Demirgüç-Kunt et al., (2012) find that as the economy grows, the services provided by capital markets become more important for boosting economic growth, while the importance of the banking products decreases.

Delving into the literature of this field we find different financial development indicators used by different authors. King and Leavine (1993), as a measure of financial sector development, used the variable which represents the ratio between the assets of commercial banks and total assets, i.e., commercial banks and the central bank. This indicator is especially useful in countries where the financial sector consists only of banks because it does not express the development of capital markets as part of the financial system. Back and Levine (2002) examine various indicators related to the development of the financial sector. One used indicator expresses the activity of the financial sector by measuring it through private sector lending to GDP plus the value of trading in the capital markets, while the other indicator used is the size of the financial sector which is expressed by the total amount of private lending and market capitalization. Similarly, Dermirgüç-Kunt and Maksimovic (1998) for measuring the size of the banking sector use the indicator that expresses the assets of the banking sector to GDP, while Rajan and Zingales (1998) estimate the development of the banking sector through two variables: 1) the amount of domestic loans and stock market capitalization to GDP and 2) country accounting standards, with the rationale that the higher these standards are the easier it is to borrow funds from a wide circle of investors. Also, Caporale et al. (2009) in the absence of a single indicator, as an indicator of the financial development, use several proxies such as private sector lending (loans granted by banks to enterprises and individuals) to GDP,

the size of the stock market capitalization, liquid liabilities to GDP and net interest margin as a measure of the efficiency of the financial sector. While Hagmayr et al. (2007) express the development of financial markets in two ways: TFI1 (the first measure of total financial intermediation) represents the amount of domestic lending, stock market capitalization, and the residual value of bonds, while the other indicator; TFI2 (the second measure of total financial intermediation), represents the amount of private lending, stock market capitalization and the residual value of bonds. According to the authors, the difference between domestic and private lending is that domestic lending includes loans to all local residents, while private lending includes only private sector lending.

Recent literature also shows the lack of a single indicator of financial sector development. In this regard, Paun, Musetescu, Topan, and Danuletiu (2019) measure the financial system development by the following variables: commercial bank branches (per 100,000 adults), domestic credit provided by the financial sector (% of GDP), domestic credit to the private sector by banks, market capitalization of listed domestic companies to GDP, net foreign assets to GDP and stocks traded, total value (% of GDP). While Asafo-Adjei et al. (2021) for the same purpose use a financial sector index (FSI). Whereas, Dalloshi and Badivuku-Pantina (2018) test different banking sector development indicators on the financing of businesses with loans. For financial sector development, they use different indicators. They conclude that taking into account all aspects of banking sector development, i.e., depth, access, and efficiency, is the best model to be used.

Considering what is presented above, we can freely say that there is no single indicator or proxy through which we can measure the development of the financial sector, considering that in relation to this issue, different authors have used and suggested different indicators. In this regard, Back and Levine (2002) argue that there is no single indicator that generally measures the financial development of a country, therefore they suggest that the development of the financial sector could be estimated through the general activity of financial intermediaries and capital markets, respectively the total lending to the private sector by financial intermediaries to GDP plus the value of trading in capital markets. Similarly, Hagmayr et al. (2007) point out that financial intermediation represents the amount of private lending, stock market capitalization, and the outstanding amount of bonds. Whereas, Rajan and Zingales (1998) emphasize that the development of the financial sector should be measured by the ease of connection between savers and borrowers which is enabled by the variety of financial institutions, efficiency in their performance, and the legal system which ensures their functioning and performance.

In the following, some indicators measuring different aspects of the development of the banking sector will be presented. These aspects include financial size, depth, efficiency, and stability. Coming next, the literature review of these aspects is presented and discussed in more detail considering that they are components of the FD index and also to show the consequences of not having a single indicator of financial sector development.

## 2.2. Indicators of financial size, depth, efficiency, and access

As we have already shown above, the main and most widely used variable to show the impact that the financial system has on economic growth, especially to express the depth or the size of the development of the banking sector is lending to the private sector to GDP (Berkes, Panizza, & Arcand, 2012; Dabla-Norris & Srivisal, 2013; Wen, Mahmood, Khalid, & Zakaria, 2021). However, this is not the only indicator of the size of the financial sector. The size of the banking sector is often expressed by a number of banks or their concentration, this shows the impact that banking sector competition has on increasing access to finance (Cetorelli & Gambera, 2001; Drakos, 2003; Claessens & Laeven, 2005). Banking sector concentration is defined as the degree to which the financial sector is controlled by the largest financial institutions in the market. The inclusion of this indicator in the analysis is important as some authors think that the high concentration of banks reduces competition and makes it difficult to access finance (Drakos, 2003; Claessens & Laeven, 2005). Thus, Drakos (2003) in his research argues that the high concentration of the banking market negatively affects the economic growth of countries in transition. A negative link between the concentration of banks and lending to the private sector is also found by Berger and Udell (2005) or looking at the other way Claessens and Laeven (2005) show that the industries that most use the external financing grow faster in countries with more competitive banking systems.

In addition to lending to the private sector to GDP, the size of the financial system is also expressed through the total assets of the financial sector which include the assets of the central bank, commercial banks, and other financial institutions to GDP (Beck & Demirgüç-Kunt, 2009), however, this indicator is not widely used (see Dermirgüç-Kunt and Maksimovic, 1998 for the use of this variable).

Another aspect of financial development is efficiency. World Bank and IMF (2005) define efficiency as "the ability of the financial sector to provide high-quality products and services at the lowest cost" (p. 19). Several indicators are used to measure the efficiency of the banking sector, but the most used are return on assets (ROA) or return on equity (ROE) (Ekinci & Poyraz, 2019), net interest margin (NIM) (Caporale et al., 2009), bank lending-deposit spread as well as indirect costs to total assets (Beck & Demirgüç-Kunt, 2009). While high values of ROA and ROE indicate a higher level of efficiency, higher values for NIM, bank lending-deposit spread, and indirect costs to total assets show the inefficiency of the banking sector. High NIM rates and indirect costs are characteristic of poor countries (Beck & Demirgüç-Kunt, 2009). This is due to the fact that high rates are usually associated with the so-called "agency costs" introduced by Jensen and Meckling (1978) according to which banks should cover the costs associated with monitoring managers as well as the costs associated with moral hazard.

ROA and ROE as indicators of the efficiency of the banking sector respectively are measures of profitability (Ekinci & Poyraz, 2019) and represent the ratio between profit and assets, and profit and equity, respectively. The challenge of using this indicator lies in the fact that when comparing

the ROA and ROE indicators of one country with another, the user should take into account the changes in the regulation of the banking sector, respectively provisioning rates which have a direct impact on the net profit of banks and thus affect the value of these indicators. In addition, when comparing these indicators between different countries, it is preferable to use pre-tax profit due to different tax rates applied in different countries. Both of these indicators prove the trust of citizens in the banking sector and the growth of economic activity over time.

Another important indicator of the efficiency of the banking sector is the net interest margin (NIM) which is calculated as the difference between interest earned on interest-bearing assets and interest paid on liabilities to the average value of interest-bearing assets. Also, an alternative indicator of the efficiency of the banking sector is the difference between the interest rates applied for loans and deposits, because it shows the level of financial intermediation between savers and borrowers. These two indicators are usually high in high-risk countries. Caporale et al. (2009) find that the NIM was negatively linked to economic growth, as observed for the 10 new EU member states, thus indicating high-interest rates applied in these countries. In addition, Koivu (2002) shows a negative and significant result of banking efficiency measured by NIM and economic growth for 25 transition countries for the period 1993–2000. These findings can be argued by the fact that transaction costs, tax advantages, and asymmetric information are considered to be the main reasons for the increase in the cost of external financing. This is because banks when monitoring a loan cannot monitor the progress of an investment (Stiglitz & Weiss, 1981), as consequence, banks face costs that are directly related to the operational work of the bank and those which come as a result of the institutional environment which is generally the legal system and the accounting system. Therefore, the high values of the interest rate differential between lending and deposits indicate high borrowing costs and are negatively related to economic growth and access to finance.

Related to external financing costs, as an efficiency indicator, it is considered that with the introduction of foreign capital banks in the market the cost of financing decreases. In this regard, Beqiri, Casu, and Fabbri (2014) researching the effect that foreign banks have on the level of NIM for Southeastern European (SEE) countries found that the entry of foreign banks had no effect on reducing the cost of intermediation in host countries. Meanwhile, according to Bigsten et al. (2003), the cost of capital includes not only the amount of direct interest paid on loans but also the opportunity cost of alternative financing sources as well as factors that have a direct impact on the demand for external financing in terms of imperfect markets such as collateral requirements and transaction or loan application costs. In this point, Almeida and Campello (2008) emphasize that an impact on the financial constraint of the firm, in addition to the interest rate paid for the use of external funds, are also agency problems, asymmetric information, implementation of contracts, and lack of collateral, which they call "financial constraint costs". Hence, as a result, for firms that face financial constraint costs, investment and financing decisions are interrelated.

Access to finance is considered as one of the main problems of the private sector, especially for underdeveloped countries, and mainly refers to the ease of borrowing financial funds at reasonable costs. Thus, a developed financial system should have the capacity to identify profitable projects, finance them, track their implementation, and provide these funds at a lower cost to the borrower. Access to finance is sometimes constrained since the banking sector is not always willing to offer loans to some borrowers; this is especially true for transition countries due to some macroeconomic characteristics where the most important is the legal system that does not protect creditors' rights (Qian & Strahan, 2007). Another factor is the level of supervision of the accounting standards that is one more barrier to access to finance especially for small firms (Oum, Harvie, & Narjoko, 2011) which therefore face the problem of asymmetric information and moral hazard.

It is crucial to differentiate access to financial services from access to finance or access to funds. Access to finance is a broader concept and captures the ease and cost of getting a loan. There are some indicators used to capture access to finance, based mainly on firm-level data, such as percentage of firms with a bank loan or line of credit, percentage of firms using banks to finance investments, or percentage of firms using banks to finance working capital (Fowowe, 2017), while for a capital market segment we can use the indicator such as investments financed by equity or stock sales. The usage of the specific indicator will depend on the researcher's objective.

On the other side, we have access to financial services. In many pieces of research, access to financial services is measured by using some indicators which capture the physical presence of banking services such as bank branches per 100,000 adults or ATMs per 100,000 adults (Svirydzenka, 2016). These indicators capture more the usage of financial services than access to finance. Nowadays a question to be raised is whether these indicators are still adequate considering the digitalization of banking services. The increase of usage of e-banking and online payment and communication channels decreases the importance of physical interaction.

## 3. RESEARCH METHODOLOGY

This paper used data from two databases. The first dataset is taken from IMF databases. The dataset consists of FD index (financial development), FI index (financial institutions index), and FM index (financial markets index) for 186 high- and low-income countries. The dataset consists of 39 years of annual data, respectively the period of 1980–2019 for which the average of respective indexes is calculated. For robustness check, the second database is used. These data are taken from World Bank databases called the Global Financial Development Database. This database contains data of the main indicators of the four financial development aspects such as depth, access, efficiency, and stability. Data clean policy is applied for two used datasets. We removed some countries for whom the income category could not be defined or the data for that country was missing. Also, some

outlier countries were removed because of their impact on descriptive statistics.

This paper follows to some extent an approach used by IMF staff (Barajas, Beck, Belhaj, & Naceur, 2020) to show the gaps of financial inclusion that have arisen across regions, income levels, among others. This paper uses descriptive statistics and a comparison methodology to analyze the gap between high- and low-income countries' financial systems by using ready-made financial development indicators such as FDI, FII, and FMI. To reach more valuable comparisons the data are divided into two periods, the last decade or the period 2009–2019 and the previous one 1998–2008. This splitting intends to analyze the trend of growth between two decades. Comparative analyses of different periods and groups of countries according to income category have been used according to the main aim of the paper.

## 4. RESULTS AND DISCUSSION

### 4.1. The gap between high- and low-income countries' financial systems

Comparison and interpretation of financial sector development indicators require extra care and it is especially important that when interpreting and comparing the banking sector of different countries to take into account the macroeconomic factors which impact the development of this sector in the respective countries as different countries may have been influenced by different factors in achieving the respective values. Regarding this issue, Sahay et al. (2015) point out that it is important to analyze all financial development sub-components and their overall impact since levels of financial development cannot be attributed to one segment of financial development. Barajas et al. (2020) in their paper, using the Global Findex, show that countries can differ in their level of financial inclusion and that such differences are due in part to structural differences between, among others, poor and rich countries. This paper shows that like any other financial development proxy, the Global Findex does not reveal the reason for such differences, therefore when interpreting the "gaps" there are some other relevant factors to be considered.

Considering the above-mentioned facts in the following we try to analyze the gap between high- and low-income countries' financial systems. The country income group is defined based on the World Bank definition and it is split into four categories: high income, upper middle income, lower middle income, and low income.

Table 1 provides descriptive statistics, such as the average of the three indexes categorized by level of income.

**Table 1.** Descriptive statistics of FD, FI, and FM indices based on country income group

| | *Obs.* | *1980–2019* | | | *1998–2008* | *2009–2019* | *1998–2008 vs. 2009–2019* |
|---|---|---|---|---|---|---|---|
| | | *Mean* | *Min* | *Max* | *Mean* | *Mean* | *Change in %* |
| ***High income*** | | | | | | | |
| **Financial development index** | **53** | **0.45** | **0.14** | **0.86** | **0.53** | **0.56** | **5%** |
| **Financial institutions index** | **53** | **0.55** | **0.25** | **0.90** | **0.61** | **0.64** | **6%** |
| Financial institutions access index | 52 | 0.53 | 0.25 | 0.99 | 0.60 | 0.63 | 5% |
| Financial institutions depth index | 53 | 0.42 | 0.08 | 0.92 | 0.47 | 0.51 | 11% |
| Financial institutions efficiency index | 53 | 0.58 | 0.36 | 0.75 | 0.63 | 0.64 | 1% |
| **Financial markets index** | **51** | **0.36** | **0.00** | **0.80** | **0.46** | **0.48** | **5%** |
| Financial markets access index | 49 | 0.39 | 0.03 | 0.88 | 0.48 | 0.51 | 6% |
| Financial markets depth index | 51 | 0.34 | 0.01 | 0.77 | 0.45 | 0.51 | 12% |
| Financial markets efficiency index | 44 | 0.42 | 0.00 | 0.95 | 0.53 | 0.50 | -5% |
| ***Upper-middle income*** | | | | | | | |
| **Financial development index** | **50** | **0.23** | **0.06** | **0.63** | **0.26** | **0.31** | **20%** |
| **Financial institutions index** | **50** | **0.32** | **0.10** | **0.66** | **0.34** | **0.43** | **27%** |
| Financial institutions access index | 49 | 0.26 | 0.04 | 0.69 | 0.26 | 0.41 | 58% |
| Financial institutions depth index | 48 | 0.20 | 0.02 | 0.79 | 0.21 | 0.26 | 21% |
| Financial institutions efficiency index | 50 | 0.53 | 0.23 | 0.76 | 0.56 | 0.60 | 7% |
| **Financial markets index** | **46** | **0.15** | **0.00** | **0.58** | **0.18** | **0.19** | **7%** |
| Financial markets access index | 33 | 0.23 | 0.00 | 0.55 | 0.27 | 0.28 | 4% |
| Financial markets depth index | 45 | 0.13 | 0.00 | 0.65 | 0.16 | 0.19 | 22% |
| Financial markets efficiency index | 26 | 0.29 | 0.03 | 0.84 | 0.34 | 0.31 | -6% |
| ***Lower-middle income*** | | | | | | | |
| **Financial development index** | **53** | **0.14** | **0.03** | **0.33** | **0.15** | **0.18** | **20%** |
| **Financial institutions index** | **53** | **0.21** | **0.07** | **0.42** | **0.22** | **0.28** | **30%** |
| Financial institutions access index | 53 | 0.12 | 0.02 | 0.49 | 0.11 | 0.21 | 90% |
| Financial institutions depth index | 52 | 0.08 | 0.00 | 0.23 | 0.08 | 0.11 | 38% |
| Financial institutions efficiency index | 53 | 0.50 | 0.01 | 0.72 | 0.52 | 0.56 | 7% |
| **Financial markets index** | **44** | **0.08** | **0.00** | **0.36** | **0.10** | **0.09** | **-6%** |
| Financial markets access index | 26 | 0.12 | 0.00 | 0.43 | 0.14 | 0.14 | 3% |
| Financial markets depth index | 44 | 0.08 | 0.00 | 0.44 | 0.08 | 0.10 | 23% |
| Financial markets efficiency index | 18 | 0.21 | 0.00 | 0.63 | 0.30 | 0.20 | -35% |
| ***Low income*** | | | | | | | |
| **Financial development index** | **23** | **0.08** | **0.02** | **0.14** | **0.08** | **0.09** | **18%** |
| **Financial institutions index** | **23** | **0.15** | **0.08** | **0.22** | **0.15** | **0.17** | **16%** |
| Financial institutions access index | 22 | 0.03 | 0.00 | 0.07 | 0.02 | 0.05 | 166% |
| Financial institutions depth index | 23 | 0.05 | 0.00 | 0.19 | 0.04 | 0.06 | 37% |
| Financial institutions efficiency index | 23 | 0.47 | 0.12 | 0.77 | 0.48 | 0.50 | 4% |
| **Financial markets index** | **18** | **0.01** | **0.00** | **0.08** | **0.01** | **0.02** | **39%** |
| Financial markets access index | 4 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 17% |
| Financial markets depth index | 18 | 0.04 | 0.00 | 0.22 | 0.03 | 0.05 | 40% |
| Financial markets efficiency index | 1 | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 29% |

Looking at Table 1 horizontally, we can see that all three indices show an increasing trend in the last 10 years compared to the previous 10 years or even compared to the whole period of 39 years. This shows an improvement in financial development all over the world. If we look at the column that represents the change (increase/decrease) of the percentage of FD for each group of countries, we can notice that FD for high-income countries comparing the last 10 years to the previous decade is increased by 5%, while this percentage is 20% for upper-middle- and lower-middle-income countries and 18% for low-income countries. Analyzing the trend of component indices of FD, we notice an improvement of financial institutions development in all groups of countries. The improvement of financial market development is noticed also in all categories of income countries, except the lower-middle-income which show a negative value. Analyzing the structure of financial development, we notice a lower development of financial markets compared to institutional development. The indices show that this is true for all groups of countries and this deepens even further by going from high- to low-income countries.

Analyzing Table 1 vertically, or comparing the countries based on their income level, we see a huge gap between high- and low-income countries, for all of the three indices, but what stands out is the low level of development of financial markets in low-income countries, confirming once again the literature findings. Even though the gap is still high, we can notice a decline in the last decade. The data confirms that the banking sector is the genesis of financial development, showing that the benefits of financial market development increase with economic development.

Considering that a broad indicator such as FD, FI, and FM cannot capture all the functions of the financial sector (Sahay et al., 2015), we continue to analyze some indicators separately. In the following, we present some analysis of representative indicators for depth and efficiency.

Private credit by deposit money banks to GDP (%) defined by World Bank as the financial resources provided to the private sector by domestic money banks as a share of GDP used as depth indicator shows a huge gap between high- and low-income countries. Based on our datasets and calculation the average of this indicator for high-income countries goes up to 82.90% of GDP, even though there are countries that exceed 100% of GDP, and the maximum average for the period 1998–2017 is 167.9% (see Table 2). According to Sahay et al. (2015), this value is 130% of GDP, while according to Čihák, Demirgüç-Kunt, Feyen, and Levine (2013) in high-income countries the average is 103%.

**Table 2.** Banking sector depth indicator — Private credit by deposit money banks to GDP (%)

| | *Obs.* | *1998–2008* | *2009–2017* | *1998–2017* | |
|---|---|---|---|---|---|
| | | *Average* | *Average* | *Min* | *Max* |
| High income | 56 | 66.96 | 82.90 | 13.50 | 167.9 |
| Upper-middle income | 49 | 33.33 | 46.15 | 5.78 | 115.09 |
| Lower-middle income | 44 | 20.48 | 31.60 | 3.27 | 70.22 |
| Low income | 26 | 9.68 | 15.29 | 2.29 | 41.08 |

Table 3 presents the data on bank interest margin and bank lending-deposit spread as two chosen indicators of efficiency. The higher the level of NIM and bank lending-deposit spread the lower the interaction between borrowers and financial institutions. The data show a moderate decrease in the whole group of countries but still high in low-income countries.

**Table 3.** Banking sector efficiency indicators — Bank net interest margin (%) and bank lending-deposit spread

| *Bank net interest margin (%)* | | | | | |
|---|---|---|---|---|---|
| | *Obs.* | *1998–2008* | *2009–2017* | *1998–2017* | |
| | | *Average* | *Average* | *Min* | *Max* |
| High income | 63 | 2.69 | 2.64 | 0.77 | 6.48 |
| Upper-middle income | 45 | 5.92 | 4.84 | 1.00 | 10.73 |
| Lower-middle income | 39 | 6.05 | 5.62 | 2.38 | 11.89 |
| Low income | 25 | 9.12 | 6.53 | 2.04 | 24.43 |
| *Bank lending-deposit spread* | | | | | |
| | *Obs.* | *1998–2008* | *2009–2017* | *1998–2017* | |
| | | *Average* | *Average* | *Min* | *Max* |
| High income | 27 | 4.47 | 4.38 | 1.31 | 8.63 |
| Upper-middle income | 40 | 8.55 | 6.41 | 2.77 | 18.75 |
| Lower-middle income | 31 | 11.43 | 8.20 | 3.40 | 26.87 |
| Low income | 11 | 13.46 | 12.06 | 8.17 | 23.37 |

As we already pointed out above, higher values for NIM, bank lending-deposit spread, and indirect costs to total assets, show the inefficiency of the banking sector. The data presented in Table 1 reveal that the efficiency of financial institutions is lower in the low-income group compared to the high-income one. This conclusion is supported by data presented in Table 3 showing that financial institutions apply high-interest rates for the funds provided to the borrowers, therefore we have a low value of financial access index.

A question to be asked is: *when were the high-income countries at the level of the low-income countries?* Or looking the other way, *how long does it take for low-income countries to reach the level of financial development of high-income countries?* Based on our data, the FD of low-income countries from decade to decade increases by 18%, if it goes with this trend, to reach the FD of high-income countries of 0.56 they need a century.

### 4.2. The gap of financial development between Europe and SEE countries: Geographical determination

This section presents data on comparison between Europe and Southeastern European (SEE) countries. The dataset consists of 31 European countries and 6 SEE countries such as Croatia, Slovenia, Bulgaria, Albania, Serbia, and Bosnia and Herzegovina. The data for other SEE countries such as North Macedonia, the Republic of Kosovo, and Montenegro are missing therefore are not included.

The findings of this comparison are quite important to show the differences in financial development even though the countries may belong to the same group of income. All European countries, including SEE, belong to the high or upper-middle-income category, but looking at the financial development indices, we reveal that this indicator for SEE is half of that of European countries. We notice a higher development of financial institutions, which in the last decade is closer to that of European countries. The main difference remains regarding the depth as the index shows a huge gap, while access to finance and efficiency is closer to that of European countries.

**Table 4.** Descriptive statistics of the FD, FI, and FM indices — European vs. SEE countries

| *Europe* | | | | | |
|---|---|---|---|---|---|
| | *Obs.* | *1980–2019* | *1998–2008* | *2009–2019* | *Change in %* |
| | | *Average* | *Average* | *Average* | |
| **Financial development index** | **31** | **0.45** | **0.55** | **0.52** | **-5%** |
| **Financial institutions index** | **31** | **0.56** | **0.63** | **0.60** | **-5%** |
| Financial institutions access index | 31 | 0.54 | 0.63 | 0.58 | -7% |
| Financial institutions depth index | 31 | 0.43 | 0.51 | 0.47 | -8% |
| Financial institutions efficiency index | 31 | 0.58 | 0.60 | 0.61 | 2% |
| **Financial markets index** | **31** | **0.34** | **0.46** | **0.43** | **-5%** |
| Financial markets access index | 31 | 0.33 | 0.43 | 0.40 | -7% |
| Financial markets depth index | 31 | 0.31 | 0.48 | 0.43 | -10% |
| Financial markets efficiency index | | 0.49 | 0.59 | 0.61 | 4% |
| *SEE* | | | | | |
| | *Obs.* | *1980–2019* | *1998–2008* | *2009–2019* | *Change in %* |
| | | *Average* | *Average* | *Average* | |
| **Financial development index** | **6** | **0.27** | **0.32** | **0.28** | **-13%** |
| **Financial institutions index** | **6** | **0.45** | **0.54** | **0.40** | **-26%** |
| Financial institutions access index | 6 | 0.54 | 0.69 | 0.47 | -31% |
| Financial institutions depth index | 6 | 0.19 | 0.23 | 0.15 | -33% |
| Financial institutions efficiency index | 6 | 0.54 | 0.59 | 0.53 | -10% |
| **Financial markets index** | **6** | **0.11** | **0.10** | **0.15** | **51%** |
| Financial markets access index | 6 | 0.30 | 0.32 | 0.44 | 35% |
| Financial markets depth index | 6 | 0.08 | 0.09 | 0.09 | -3% |
| Financial markets efficiency index | 6 | 0.18 | 0.07 | 0.23 | 230% |

Undertaking comparative analysis within the group of SEE countries the highest financial index is noticed in Croatia with an average of 0.39 for the period of 1980–2019, followed by Bulgaria and Slovenia, while Albania is the last with an index of only 0.15. Croatia, Bulgaria, and Slovenia are at the same financial institutions and markets development, while Albania and Bosnia and Herzegovina are the last. As we see from the sub-indices, we can notice that the financial development of all of the SEE countries comes from their access and efficiency, rather than the depth.

The data reveal also huge differences regarding the financial markets index. The SEE financial markets seem to be lagging behind the more developed Western European markets. This difference is due to financial markets depth and efficiency, rather than access. There are many macroeconomic and institutional factors that determine the level of financial market development. Macroeconomic factors are related to income level, gross domestic investment, banking sector development, private capital flows, and stock market liquidity (Yartey, 2008), while institutional factors are related to political risk (Erb, Harvey, & Viskanta, 1996), legal system (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997, 2000), corruption (Pham, 2020), etc.

### 4.3 Discussion

The literature review section confirms once again the lack of a single indicator of financial sector development, although there are some indicators most used by the academic world. The introduction of the FD by IMF staff indicates the continuous efforts to build indicators for the overall measurement of the development of the financial sector. Using a single indicator of financial development whether from the academic community or also the regulatory one will ease the cross-country comparisons which will lead to an approximation of attitudes on the importance and impact of the financial sector on economic development.

The results of comparisons between the high- and low-income countries' financial development, show that financial structure differs. The data presented above reveal that unlike the financial system of developed countries, which in addition to the banking sector also has developed capital markets, the financial sector of the developing countries mostly consists of the banking sector as the capital markets are not sufficiently developed. Similar conclusions are also reached by Beck and Demirgüç-Kunt (2009) who conclude that the large participation of the banking sector within the financial system is a feature of developing countries. This structure of the financial sector, among others, may have been influenced by the fact that in these countries small and medium businesses make up the largest part of the private sector, while large companies that trade in the stock market are in a minority.

After the results presented above, one question to be raised is: *when do we consider a financial system as a developed one?* According to Levine

(2005), "financial development occurs when financial instruments, markets and financial intermediaries improve, although not necessarily, the effects of information, contract enforcement and transaction costs by providing the five financial functions of the financial sector" (pp. 869–870). Meanwhile, regarding the main functions of the financial system, she lists: providing information regarding potential investments; investment monitoring; trade facilitation, diversification, and risk management; mobilizing savings, and facilitating the exchange of goods and services. In the same contexts, to assess whether a financial system is developed or not, Čihák et al. (2012) say that "financial development occurs when financial instruments, markets, and intermediaries mitigate — though do not necessarily eliminate — the effects of imperfect information, limited enforcement, and transactions costs" (p. 4) which means that a developed financial system should facilitate access to finance for borrowers. How can we measure Levine's five financial functions to argue that a financial sector is a developed one? There is no broad indicator to capture all these functions but it is argued that the developed financial sector offers more efficient products and operational processes which enable the performance of the above-mentioned functions.

## 5. CONCLUSION

This paper presented a financial development comparison between high- and low-income countries as well as the comparison between European countries and its part, SEE. The compared indicators used are those of literature suggested and as well as the financial development indices constructed by the IMF staff. We used the financial development index and its sub-indices to do the comparisons because it makes more sense for different countries to be analyzed with the same indicators. However, considering the multicomplex nature of financial development, researchers can still use other indicators depending on their research objective.

Data comparisons between different groups of income countries and different periods reveal a huge gap between financial development between high- and low-income countries, and that the structure of financial systems of low-income countries consists mainly of financial institutions, confirming once again that financial markets in these countries play a small role. We also notice an improvement of the overall financial system in all of the groups of countries, showing an increasing trend in the last 10 years compared to the previous 10 years, but the desperate fact is that low-income countries have a long way to go to reach the level of financial development of high-income countries.

Moreover, we concluded that there should be specific country factors that affect the financial development, considering the differences between European countries and SEE countries. It means that geography or belonging to the same region does not mean much in this aspect. The cross-country heterogeneity arises due to many economic and financial factors. The economic factors may be related among others to the region, political system, legal system, etc. While the financial development heterogeneity may be also due to different financial regulations, competition index, the level of financial markets development, etc. To further advance the comparative analysis of financial sector development between countries with different incomes we suggest the application of other more advanced statistical methods, with a special focus on revealing those country-specific factors which impact the financial development.

Researchers in this field still have a long way to go to analyze the impact of different financial segments on macro and micro variables. Using a single indicator of financial development whether from the academic community or also the regulatory one will ease the cross-country comparisons which will lead to an approximation of attitudes on the importance and impact of the financial sector on economic development. The limitation of this paper is that it does not use empirical methods to investigate the impact of financial development on economic growth or other economic phenomena, and does not discuss the methodology used to construct the FD, FI, and FM indices.

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