The impact of non-banking financial markets on economic development

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Abstract. *The interaction between financial markets and the real economy is fundamental, considering the several channels through which financial system drives economic growth. While previous studies focused mainly on the correlation between banks, stock markets and economic growth, this study brings a new perspective by adding the bond market and insurance industry to the analysis. Main findings confirm the existence of a positive significant link between capital market and economic development, simultaneously providing new evidence about the positive impact of insurance and bond markets on economic growth, using a panel data set of 32 countries.*

Keywords: financial markets, stock market, bonds, insurance, economic development.

JEL Classification: O16, E44, G15, C33, G22.

1. Introduction

The question whether financial markets drive economic development has not found its answer yet, as divergent results were found on different country samples or time spans. The theoretical presumption asserts that well developed financial markets might not only enhance the growth perspectives but also decrease the vulnerability to economic crises. This makes the starting point of this research paper, which will investigate the causality relationship between the non-banking financial markets and economic development, using an empirical approach that includes OLS regressions and Granger causality tests, on a sample of 32 countries, between 2010-2019.

This paper extends the precursory studies by introducing a new perspective on some previously ignored sectors of the financial market that might have a contribution to economic growth. As prior research focused particularly on equity markets and banking sector, this paper brings under spotlight evidence of the impact of bond and insurance markets, along with stock market, on the degree of economic development.

The capital market has a well-established position in the financial system, providing access to financing, exit strategies and risk diversification options. More recently, insurance industry became an essential part of the economy given its critical social and economic role to cover and transfer risks. Likewise, the bond market experienced a significant growth, almost reaching the size of the stock market in some countries. Main findings of this study show that all three components of the financial markets have a positive impact on economic development.

Further, the paper is structured as follows. The second section present a brief survey of the main findings of the literature, along with a preliminary description of the financial markets and their role in the economy overall. Section 3 provides the research methodology, definitions of key variables and descriptions of data used in the study. The panel data analysis and empirical results are discussed in Section 4, while section 5 stipulates the concluding remarks and future research directions.

2. Literature Review

The financial system plays a key role in the economy. Its main functions are to generate information ex ante potential investments and contribute to capital allocation, to monitor the investments after financing has been provided, to facilitate access to trading and provide ways for risk management and diversification, to ensure the mobilization of savings and to ease the trade of goods and services.[1] Given those critical functions of the financial system, there is no doubt that it can be called the engine of the economy.

In order for economic development to happen, sustainable economic growth must occur. This will further lead to wealth creation and benefits for the overall community. How can this happen? The mechanism is quite simple. The governing body creates a better framework to redirect the allocation of resources – land, labor, capital and technology - to the most efficient investments. This will further lead to more lucrative opportunities for business environment, higher employment rates, higher tax revenues and better income distribution patterns, in order to assist the continued growth.

One of the best ways to quantify the degree of economic development is GDP per capita. By dividing a country's output by its population, it can be tracked how much economic benefit can be attributed to each person. Therefore, the higher the GDP per capita, the more wealth and prosperity can be attributed to that country, so a higher growth rate of GDP per capita indicates a faster growing country. This indicator has been broadly used in studies regarding economic development (King and Levine 1993, Arena 2008, Beck and Levine 2004).

The topic of correlation between financial markets and economic development has been widely studied in the literature, with studies dating back to the 1910s (Schumpeter 1911). Most opinions state that developed financial markets contribute to an efficient allocation of resources to the highest yield returning investments, enhancing technological innovation and therefore, leading to more significant growth rates (Alfaro et al. 2004). Notable early advocates of this view include Schumpeter (1911), Goldsmith (1969) and Shaw (1973).

Further important evidence on this issue was provided by King and Levine (1993) in their cross-country study on 80 countries. They used a series of variables to measure financial depth - which was further used as a proxy for the financial system. To compute the degree of economic development, GDP per capita growth rate was chosen as key variable. Their measurements of financial development were a starting point for many subsequent studies, like Atje and Jovanovic's (1993) who found a positive impact of the stock market on economic expansion. These results were also approved by Levine and Zervos's (1998) study.

Another significant contribution on literature was brought by Beck and Levine (2004) who applied a generalized method of moments estimation technique for dynamic panels to study the impact of capital markets and banking system on economic development. Their study covered the timespan between 1976-1998 and 40 countries and used turnover ratio, total value traded to GDP ratio and market capitalization to GDP ratio as proxies for stock market development, size and liquidity. They also monitored other possible determinants of economic growth like average years of schooling, inflation, trade openness, government consumption and banking system to better estimate the intensity of the independent correlation between stock markets and economic growth. A similar approach was followed by Loayza and Ranciere (2006) and Rajan and Zingales (2003). Real GDP per capita growth rate was used as proxy for economic development. Their findings show that both banks and stock markets have a significant positive impact on economic growth.

Similar financial indicators were used by Rousseau and Wachtel (2000) in their cross-country study on 47 countries. Their empirical analysis employed Granger causality techniques and provided evidence that equity market development is a good predictor for economic growth, corroborating Levine and Zervos's (1998) findings about the positive correlation between the two. Another indicator was introduced by Filer et al (2000), who measured the financial deepening of the market through the percentage change in the number of listed companies, although the correlation proved to be insignificant. Moreover, he also conducted Granger causality tests to fill the previous lacuna about the existence of a true causality framework between stock market development and economic growth, but little evidence was found in this regard.

Furthermore, Levine and Zervos (1998) also took into account the stock price volatility and found that it can positively influence the economic development. Volatility is a very important component of the stock market, given it is indeed one of the most important risk indicators that is available to market participants, but excess volatility is the real concern as financial volatility can trigger output volatility, thus adversely impacting the real economy. Moreover, Armeanu et al. (2017) proved that the volatility of a developed capital market can spread towards the less developed capital markets, thus influencing their economy as well.

On the other hand, recently a number of skeptics and divergent opinions emerged in regards to the existence of a positive relationship between financial markets and economic development (Favara 2003). Although there appears to be a broad agreement that an efficient financial intermediation mechanism is essential for efficient capital allocation, savings mobilization and risk management, literature also provides strongly divided views on the precise direction of causality between financial markets and economic development. Moreover, Ergungor (2008) demonstrates that the effects of economic growth and financial system enhancement are bidirectional and contingent, so the structure of a country's financial system has little bearing on growth. Other authors that deny the positive relationship between the two are Shyn and Oh (2008) who point out the fact that some countries, like China and South Korea, experience fast economic growth in spite of a not so seasoned financial system. Similar results were found by Allen et al. (2005) and Rajan and Zingales (2003) in the case of Argentina.

However, more recent studies took into consideration another component of the financial system: the bond market. This was previously ignored because it was considered a way of financing debt, which was mostly attributed to banks (Thumrongvit et al. 2013). One of the first studies involving bonds was conducted on the US market by Harvey (1989) who found out that the bond market, rather than the stock market, is a greater predictor of economic development.

Furthermore, Thumrongvit et al. (2013) also added the bond market component to their panel data analysis on 38 countries. To quantify it, they used the ratio of outstanding amount of domestic bonds to GDP as a proxy for market size and the ratio of total value traded of bonds to GDP as a measure of liquidity. Their findings firstly confirmed the previous evidence that stock market has a positive effect on economic development. Afterwards, they added bond market variables in the analysis and their results show a positive correlation with economic growth. Another interesting finding of their study is the switch from positive to negative effect of banking system on economic growth as the bonds market extends.

Mahara (2018) divided the bond market into local currency and foreign currency bonds and her findings reveal a positive and significant link to economic growth. Fink et al. (2006) reached similar results, showing that economic growth can be caused by the net issuance of corporate bonds.

Moreover, another component of the financial system whose effect on economic growth was barely analysed by literature due to the lack of publicly available data is the insurance market. Researchers like Arena (2008) took into consideration the potential impact of the

insurance sector by measuring the ratio of life and non-life insurance premiums to GDP. This way, he found empirical evidence that stock market liquidity and insurance market expansion positively contribute to economic growth, whereas the banking sector was found to have an insignificant effect. What is surprising about his findings is that it seems like the inclusion of insurance sector mitigates the positive impact of the banking system on economic development. The same results were found by Chen et al. (2012) who confirmed the weakening of the finance–growth relationship when the insurance sector was introduced in the analysis.

Another recent study involving the insurance market was conducted on a sample of 31 countries from 1981 to 2008 by Hou and Cheng (2017). Their findings show that the effect of financial system on economic development can vary over time, depending on a series of other factors, like the timespan or the degree of development of the countries selected in the sample. This makes the previous results inconsistent and leaves space for further directions of research.

3. Methodology

3.1. Sample

This section provides an outlook on the research methodology, definitions of key variables and descriptions of data used to analyse the relationship between stock market, insurance market, bond market and economic development. The sample consists of 32 developed countries with the biggest capitalization of the stock market according to The Global Economy[(2)]. The period under review is 2010-2019 and it was chosen this way in order to minimize the potential anomalies generated by the impact of the financial crisis. The empirical analysis was conducted on 320 observations using cross-country ordinary least squares regression in order to see the linear relationship between financial markets and economic growth. Further, Granger causality tests were conducted in order to determine whether there is a bidirectional causality, unidirectional causality or no causal relationship between variables. Bond market data was collected from Thomson Reuters Eikon database[(3)], stock market data was obtained from World Bank, World Federation of Exchanges and The Global Economy database, while the other macroeconomic variables were provided by World Development Indicators database (World Bank).

3.2. Key variables definition

Table 1 summarizes the definitions and formulas of the variables as well as the data sources. The dependent variable of the model is GDP per capita growth rate, which shows the degree of economic development and the level of the prosperity of a nation. To quantify the amplitude of the stock market, five key variables were used. The ratio of total value traded to GDP and the turnover ratio were used to seize the liquidity of the market. A more liquid market allows investors to exit quickly, reducing the disincentives of long-term investment (Beck & Levine, 2004). Market capitalization of listed shares to GDP ratio and the change in the number of listed companies show the size of the equity market, while the stock price volatility shows the risk of the market and the opportunity of obtaining abnormal returns as well.

The ratio of life insurance and non-life insurance premium volume to GDP was used to compute the activity of the insurance system relative to the size of the economy, following the example of Beck and Webb (2003) and Arena (2008). Further, the number of new debt securities issued annually, the amount outstanding of domestic debt to GDP ratio and the amount of new issued debt to GDP ratio were used as proxy for bond market.

Moreover, controlling variables were introduced in the model to oversee other possible determinants of economic growth. As summarized by Loayza and Ranciere (2006), Rajan and Zingales (2003), we employ trade openness, inflation rate, the ratio of investment to GDP, human capital and the ratio of government consumption to GDP to better estimate the intensity of the independent correlation between stock markets and economic development.

Table 1. *Table of independent variables definition and data source*

Variable	Definition and construction	Source
Value Traded	The total value of shares traded during the period divided by GDP	World Bank database (WDI)
Market Capitalization	The share price multiplied by the number of shares outstanding as a percentage of GDP	World Bank database (WDI)
Turnover Ratio	The ratio of total value traded to market capitalization	World Bank database (WDI)
Stock price volatility	The 360-day standard deviation of the return on the national stock market index	The Global Economy database
Listed companies (Δ%)	The annual percentage change in the number of listed companies	Calculated with the data from World Federation of Exchanges.
Issues	Number of new debt securities issued annually	Thomson Reuters Eikon
Outstanding %GDP	The outstanding amount of bonds in the period divided by GDP	Calculated with the data from Thomson Reuters Eikon and WDI
Issued %GDP	The amount of new issued bonds in the period divided by GDP	Calculated with the data from Thomson Reuters Eikon and WDI
Life insurance	The ratio of life insurance premiums to GDP	Calculated with the data from World Bank database
Non-life insurance	The ratio of non-life insurance premiums to GDP	Calculated with the data from World Bank database
Inflation rate	The annual percentage change in CPI	World Bank database (WDI)
Trade	The sum of imports and exports of goods divided by GDP	World Bank database (WDI)
Government consumption	The ratio of general government expenditure to GDP	World Bank database (WDI)
Population Growth	Annual population growth rate expressed as a percentage	World Bank database (WDI)
Human Capital	The average schooling years in the total population age 25 and over	World Bank database (WDI)
Investment	The ratio of annual gross investment to GDP	World Bank database (WDI)

*GDP per capita growth rate, calculated as percentage change of GDP per capita year to year, was used as dependent variable. Data provided by World Bank database – The World Development Indicators (WDI).

3.3. Descriptive statistics

Descriptive statistics are shown in Table 2. As it can be seen, GDP per capita growth has a wide variation range, from countries who experienced negative growth rates to countries who accomplished fast growth, like Ireland in 2015. Same happens when it comes to the stock market. Despite the fact that selected countries are the top 32 biggest by market capitalization, when we divide it by GDP we get a wide range of values, starting from 10,02% in Egypt to 1274% in Hong Kong. This value comes from the fact that Hong Kong is a very actively traded market while its GDP is very small, given its size. Further, when it comes to stock price volatility, we can see a high variation which is not far from expectations given the country – specific risks of each country from the sample.

Table 2. *Descriptive statistics*

	Mean	Median	Stdev	Range	Min	Max
GDP per capita growth (%)	2,217	1,691	2,889	29,9	-5,915	23,986
Value Traded (%GDP)	59,13	42,02	59,69	354,21	1,31	355,52
Capitalization (%GDP)	113,66	66,54	180,78	1264,87	10,02	1274,9
Turnover Ratio (%GDP)	63,68	50,19	46,46	228,02	4,4	232,43
Stock price volatility (%)	20,56	19,23	7,84	40,94	7,5	48,44
Listed companies (Δ%)	0,01	0	0,08	1,38	-0,64	0,73
Issues	811,31	270,5	1899,31	15680	0	15680
Debt Outstanding (%GDP)	4,26	3,45	3,6	18,53	0	18,53
Debt Issued (%GDP)	24,38	15,47	27,33	127,88	0	127,88
Life insurance (%GDP)	3,28	2,79	2,67	12,5	0,03	12,53
Non-life insurance (%GDP)	1,57	1,57	0,76	2,97	0,28	3,26
Inflation	2,99	2,09	3,32	31,6	-2,09	29,51
Trade (%GDP)	0,0076	0,0051	0,0069	0,0402	0,0017	0,042
Government consumption (%GDP)	16,85	17,99	4,6	22,34	7,66	30
Population Growth (%)	0,98	0,87	0,8	9,54	-1,85	7,69
Human Capital	10,8	11,5	2,21	8,7	5,4	14,1
Investment (%GDP)	24,45	23,22	6,13	34,37	13,64	48,01

Source: calculated with data from World Bank, the Global Economy, Thomson Reuters and World Federation of Exchanges.

The characteristics of the bond market varies widely across the sample due to the difference between financing politics of each country. While some countries have very developed bond markets, like the United States, where the bond market is comparable to the stock market in terms of size (Thumrongvit et al. 2013), other emerging economies have just recently started using debt securities for financing. As we can see from table 2, some countries have zero new debt securities issued and zero amount of debt outstanding. This generally happened in the first years of the analysis. Further, we can see that the insurance market is relatively small in most countries, when measured as relative percentage to GDP. The highest value relative to GDP was recorded in the UK in 2010 and the lowest in Saudi Arabia in 2015.

3.4. Research hypotheses

Subsequently, to analyze the correlation between stock market and economic development, we formulated the following working hypothesis, in accordance with the results provided by Atje and Jovanovic (1993), Levine and Zervos's (1998), Beck and Levine (2004) who found a positive significant stock market - economic growth nexus.

H1: There is a positive correlation between stock market and economic development.
Furthermore, recent studies considered another component of the financial system: the bond market. A positive correlation between bond market and GDP per capita growth rate was found by Thumrongvit et al. (2013) in their study on 38 countries, as well as by Mahara (2018) and Fink et al. (2006). According to this, the following hypothesis was formulated:

H2: Bond market and economic development are positively correlated.
Lastly, some studies took into account the potential impact of the insurance sector by measuring the ratio of life and non-life insurance premiums to GDP. Empirical evidence to support the hypothesis that insurance market expansion positively contribute to economic

development was found by Arena (2008), Chen et al (2012), Hou and Cheng (2017). This leads to the third research hypothesis:

H3: Insurance system can have a positive impact on economic development.
This section provided an overview of the research methodology, variables and data used, whereas the following section will use empirical analysis to test the previous hypotheses.

4. Panel data analysis and results

Table 3 exhibits the results of the linear OLS regression model for the 320-observations panel data between 2010-2019. The cross-country multiple regression is described by the following equation:

$$G_i = \alpha + \beta * F_i + \gamma * C_i + \varepsilon_i$$

where G is the growth rate of GDP per capita for period i, the dependent variable of the model, F represents the financial non-banking set of indicators for each period i, C is the set of controlling variables and ε is the error term. Before estimating the regression equations, the correlation matrix was built, considering a limit threshold of 0.4 and -0,4 for the correlation coefficient. Therefore, multiple equations have been estimated in order to test all variables without including two strongly correlated ones in the same regression. The investment to GDP ratio was strongly correlated to GDP per capita growth rate so it was excluded from the regression equations.

Data series were tested with Redundant fixed effects likelihood ratio, Omitted random effects Lagrange Multiplier and Hausman test to determine the most suitable type of effects. The results were consistent, showing that fixed effects are fitting for this panel data. All regressions passed the test for serial correlations of error terms. Stationarity was tested using ADF and PP Unit Root tests and series were found level stationary at the 5% significance level.

Table 3. *OLS regression estimated results*

Variable/ Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Value Traded	0,0103** (2,0652)							
Market Cap		0,0848** (2,2557)						
Turnover Ratio		0,0217*** (3,0767)	0,0182*** (2,6088)					
Stock price volatility	0,0367** (2,4382)	0,0421** (2,4589)	0,0197 (1,0304)					
Δ Listed companies	1,1390 (1,1345)	0,5835 (0,4238)	0,5391 (0,3878)					
Issues				-0,0018 (-1,4427)	-0,0014 (-1,1634)	-0,0019 (-1,4938)		
Outstanding % GDP				0,0756* (1,7282)		0,0743* (1,6988)		
Issued % GDP				-0,0144 (-0,8842)	-0,0134 (-0,8210)			
Life insurance							0,4604** (2,1982)	

Variable/ Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-life insurance								-0,1467 (-0,1881)
Inflation rate		-0,1140* (-1,9319)		-0,1199* (-1,8503)	-0,1246* (-1,9174)	-0,1299** (-2,0366)	-0,1517** (-2,4544)	
Trade	14705,70 (0,9936)			30490,44*** (2,5893)	29198,67*** (2,4759)	32124,70*** (2,7634)	43032,02*** (3,5718)	36315,25*** (3,1185)
Government expenditure	-0,8024*** (-3,2848)	-0,8387*** (-7,6228)	-0,8553*** (-7,5505)	-0,6351*** (-5,5256)	-0,6646*** (-5,8273)	-0,6491*** (-5,7045)	-0,8877*** (-7,7521)	
Population Growth	-1,1757*** (-,0910)	-1,1385*** (-4,9479)	-1,1997*** (-5,1342)				-1,1097*** (-4,8167)	-0,6823*** (-2,7709)
Human Capital			-0,6133 (-1,4826)					
c	14,3411*** (2,9751)	14,5406*** (6,9945)	22,8050*** (4,2069)	11,0799*** (4,9231)	11,9589*** (5,4350)	10,8793*** (4,8606)	13,8594*** (6,1280)	0,2871 (0,1870)
R-squared	54,45%	55,78%	54,63%	50,65%	50,13%	50,52%	54,27%	44,01%
Number of observations	320	320	320	320	320	320	320	320

Notes: Authors' computations. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels. t-statistic values are in parentheses.

Most results are consistent with the ones in the literature, showing a positive correlation between financial markets and economic development, at the statistical significance levels of 1%, 5% or 10%.

To begin with, four out of the five indicators of stock market are statistically significant and positively correlated to GDP per capita growth rate, confirming the first research hypothesis. These results are consistent with Levine and Zervos (1998) who found a positive impact of turnover ratio on economic growth. Beck and Levine (2004) arrived to a similar result in their empirical analysis on 38 countries. The turnover ratio is a good indicator for how actively traded a market is. The higher the turnover ratio, the better the liquidity of the market, which means a lower risk for investors because they can exit the market whenever they wish to. A more liquid market provides a better access to financing options and thus can lead to economic growth.

To add more points, a positive correlation between market capitalization of listed shares and economic development was confirmed by King and Levine (1993) and Atje and Jovanovic's (1993). Looking at total value traded and stock price volatility, we can see that both are statistically significant and positively correlated to economic development, in accordance with Levine and Zervos (1998). Market capitalization emphasizes the role of financing through equity issues in capital allocation process, while total value traded is a measure of both liquidity and size. The positive correlation between these variables and economic growth is readily explained since a more developed market raises investors trust, offers enough liquidity for risk diversification and exit strategies and provides access to long-term capital resources that can be invested in larger, multiannual projects. Change in the number of listed companies was used as a measure of financial deepening, following Filer et al (2000). Results were similar with theirs, proving that there is no link between this indicator and economic development. With regards to stock price volatility, the result can be explained through the positive correlation between risk and rentability. A higher

level of volatility can be translated not only into higher risk, but also better chances of achieving abnormal returns. Especially, investors who focus on long-term investments tend to be less concerned about volatility.

Further, looking at table 3, an expected positive correlation between bonds market and economic development is displayed among our results, although not all considered variables are statistically significant. The number of new debt securities issued annually, as well as the amount of newly issued bonds seem to have no impact on economic growth, invalidating the second hypothesis. This may happen because the effects of new bonds issued in year *t* will be felt in the following years, from year *t+1* on. However, the outstanding amount of bonds is positively correlated to economic development, confirming previous findings of Thumrongvit et al. (2013) and Fink et al (2006). Also, Harvey (1989) in his early study involving bond markets found that they are a better predictor for economic development than equity market. Bond markets are increasingly getting recognized as a significant component of the financial system. An important characteristic of well-performing bond markets is that they establish a benchmark interest rate for all debts, no matter their risk or maturity, which favors the efficient use and allocation of resources to assist the continued growth of the economy. For this reason, long before the financial crises in Asia, Russia, and Latin America in the late 1990s, World Bank urged emerging countries to expand their domestic bond markets (Dalla et al., 1995).

Additionally, looking at the third hypothesis, we can see that it was partially confirmed. Results show a positive significant correlation between life insurance and economic growth, confirming the findings of Webb et al. (2002) and Arena (2008). Non-life insurance was found statistically insignificant, in accordance with Hou and Cheng (2017), who showed that the effects of financial system on economic development can vary over time, depending on a series of other factors, like the time stamp or the degree of development of the countries selected in the sample. However, according to Beck and Webb (2003), life insurance products are ministerial to more efficient risk transfer and compensation, thus contributing to the development of the economy.

Taking a look at the controlling variables, we can notice that there are some other factors that can influence economic development, besides the financial system. As shown in table 3, trade openness and economic development are positively correlated, in accordance with Beck and Levine (2004). Trade openness provides new opportunities for local enterprises, boosts the foreign direct investment inflows, thus contributing to increased productivity and innovation among domestic firms. This way, trade openness leads to poverty reduction and provide geopolitical advantages as a result of greater economic integration. On the other hand, we can see a strong negative link between government consumption, population growth and economic development. Similar results were found by Law and Singh (2014). The negative correlation in case of population growth can be explained by the fact that GDP per capita experienced growth during the analysed period, coming after a financial crisis, while world population encounters negative growth rates. When it comes to government consumption, an increase in this indicator is usually seen during recession, when the private economic activity slows down and the government has to intervene to reconcile the situation. As previously mentioned, 2010-2019 was a blooming period, which

explains the negative correlation between government consumption and GDP per capita growth rate. The negative inflation-economic growth nexus is quite intuitive and results are consistent with findings of Arena (2008), Beck and Levine (2004). When it comes to human capital, results show that the average years of schooling has an insignificant impact on a nation's prosperity.

The final step of the analysis was running a Granger causality test, which is the most widely known approach used to answer the question of causality, despite its several limitations. First, data were tested for stationarity using ADF and PP Unit Root Tests and were found level stationary at the 5% significance level. Further, Granger causality test was run, allowing us to identify the causal short-run relationships between the series, which, according to Granger (1969), occurs when a particular variable in the present or in the past helps predict future values of another variable. In other words, it must be emphasized that Granger causality does not mean causation; rather, it indicates that there is a correlation between past values of one variable and the present value of another. Granger causality was detected for the pairwise variables, as shown in Table 4.

Table 4. *Granger causality test results*

Causality Direction	Lags	Obs	F-Statistic	p-value
Capitalization *to* GDP per capita gr	2	256	361.889	0.0282
GDP per capita gr *to* Capitalization	2	256	183.438	0.1618
Turnover Ratio *to* GDP per capita gr	2	256	162.596	0.1988
GDP per capita gr *to* Turnover Ratio	2	256	428.454	0.0148
Value Traded *to* GDP per capita gr	2	256	0.459	0.6323
GDP per capita gr *to* Value Traded	2	256	0.208	0.8120
Volatility *to* GDP per capita gr	2	256	146.632	0.2327
GDP per capita gr *to* Volatility	2	256	184.526	0.1601
Listed Companies *to* GDP per capita gr	2	256	196.729	0.1420
GDP per capita gr *to* Listed Companies	2	256	0.809	0.4462
Issued%GDP *to* GDP per capita gr	1	288	103.573	0.3097
GDP per capita gr *to* Issued%GDP	1	288	0.388	0.5336
Issues *to* GDP per capita gr	1	288	603.536	0.0146
GDP per capita gr *to* Issues	1	288	810.997	0.0047
Outstanding%GDP *to* GDP per capita gr	1	288	0.163	0.6860
GDP per capita gr *to* Outstanding%GDP	1	288	472.177	0.0306
Life Insurance *to* GDP per capita gr	1	288	255.080	0.1113
GDP per capita gr *to* Life Insurance	1	288	0.488	0.4852
Non-life Insurance *to* GDP per capita gr	1	288	582.280	0.0165
GDP per capita gr *to* Non-life Insurance	1	288	594.490	0.0154

The results shown in Table 4 confirm the causality relationship between market capitalization and economic development and also provide evidence that economic development can predict future movements in the turnover ratio. When it comes to insurance industry, results show a bidirectional relationship between non-life insurance and GDP per capita growth rate. We can also notice a bidirectional causality between the number of new issued bonds and GDP per capita growth rate, despite the previous insignificant correlation between the two; and a unidirectional causality between GDP per capita growth rate and the outstanding amount of bonds to GDP ratio. Overall, the Granger causality test results strengthen the previous findings, while they also add to the analysis the fact that the past evolution of economic development can be correlated with the present values of some financial market sectors such as bonds or insurance industry.

5. Conclusion

The aim of this research paper was to answer the question whether financial non-banking markets contributes to economic development or not. Using previously conducted research as a starting point, this paper analysed the impact of the stock market, bond market and insurance market on economic development. The contribution of this study was to bring together in the same analysis the three markets listed above, to fill the existing loophole, as previous research focused particularly on capital markets and banking sector, ignoring the other components of the financial system. As the bond market is growing to about the size of the stock market in some countries, and the insurance market is slowly following it, a closer look needs to be taken in this direction due to the fact that the previous findings might start to become obsolete.

In order to examine the stock market, a couple of variables were used to cover four dimensions of the market: size, liquidity, volatility and depth. Results showed that three out of these four proved to have a significant impact on economic development. More precisely, size, liquidity and volatility, measured through the ratio of total value traded to GDP, market capitalization to GDP ratio, turnover ratio and stock price volatility were found to contribute to economic development. By providing access to financing, readily available exit strategies and risk diversification options, stock market promotes investments, allowing companies to grow and expand their operations, thus creating jobs and stimulating the economy. Those investments are a key driver for economic trade, development and prosperity.

Additionally, the positive significant link between bond markets and economic development shows the importance of financing through debt securities as bond markets complement the banking system and the stock markets in deepening the financial system of an economy (Thumrongvit et al. 2013). Given their important characteristic of establishing the benchmark interest rate for other debts, bond markets favor the efficient use and allocation of resources, assisting the continued growth of the economy. Moreover, a component of the financial system that has been broadly ignored by literature is the insurance industry. The aforementioned empirical analysis showed that there might exist a positive significant link between insurance market and economic development, given the functions that insurance carries: risk transfer and compensation.

Furthermore, to have a broader view on the issue, Granger causality techniques were used to fill the previous lacuna about the existence of a real causality framework between financial markets and economic development. Regarding this, results have shown that the causality relationship can be bidirectional: past growth of the insurance industry can explain economic development while economic growth can also be a good predictor for the expansion of the insurance market. Same bidirectional causality was noticed between the number of new issued bonds and GDP per capita growth rate. In the absence of bond markets, banks tend to become overcapitalized, which can lead to suboptimal or unsound lending decisions. With well-developed bond markets, banks invest in bonds, reducing information asymmetries which further promotes the efficient uses of resources. On the other hand, an economy needs large investments in infrastructure, education, health, national defense and other government initiatives to keep the growth pace. In order to

finance these investments, the government will borrow money by issuing new bonds. Overall, the Granger causality tests results strengthen the previous findings, while adding to the analysis the fact that the past evolution of economic development can be correlated with the present values of the performance of the financial markets.

This research paper focused on the largest countries in terms of stock market capitalization. This is the reason why results might alter as the sample shifts from developed to emerging countries with relatively small market capitalization. Besides, further research directions can consider a deeper look at insurance specific variables and bond market variables, if the availability of the data will offer the possibility of doing so. As literature has previously shown, this topic of research is sensitive to the selection of a certain timespan and sample, therefore rising the need for more advanced research technique to be used for empirical testing, in order to solidify the consistency of such findings. These results are of interest for a large area of users, as they reveal the need of paying attention to all financial sectors in order to predict the overall direction of the economy.

Notes

[1]   The World Bank - Global Financial Development Report 2013: *Rethinking the Role of the State in Finance*. World Bank, Washington, DC
[2]   https://www.theglobaleconomy.com
[3]   https://eikon.thomsonreuters.com/index.html

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