DOES INSURANCE PROMOTE ECONOMIC GROWTH?
EVIDENCE FROM BRICS COUNTRIES

Srijanani Devarakonda, PhD, Associate Professor
Jyothi Chittineni, PhD, Senior Assistant Professor
Vignana Jyothi Institute of Management, India

Abstract
The influence of economic growth is realized through the functions of financial intermediaries – the mobilization of savings, the reduction in the cost of capital through economies of scale and specialization, the provision of risk management and liquidity, the improvement of resource allocation. Given the vast body of research on the relationship between bank/capital market – finance and economic growth, there is definitely a need for more empirical work on the insurance-growth nexus. Insurance companies play a major role in these functions and thus should also play a major role in economic growth, as they are the main risk management resource for companies and individuals. Therefore, according to the theory, the insurance sector is one of the factors contributing to economic growth. This paper examines the short- and long-run dynamic relationships exhibited between economic growth and growth in the insurance industry for BRICS countries. This is achieved by conducting a co-integration analysis on a unique set of annual data for GDP per capita and total insurance penetration, life insurance penetration and non-life insurance penetration in each country from 1990 to 2014. The results from the tests suggest that in these countries, the economic growth Granger causes insurance development and the relationship is unidirectional. Moreover, the results indicate that these relationships are country specific and any discussion of whether the insurance industry does promote economic growth will be dependent on a number of national circumstances.

Keywords: insurance development, economic growth, insurance penetration, co-integration, Granger causality

JEL Codes: G22, O47, C12

Received: September 12, 2019
Revised: September 24, 2019
Accepted: September 30, 2019

Introduction
Theoretical studies and empirical evidence have shown that countries with better-developed financial systems enjoy faster and more stable long-run growth. According to the finance-growth nexus theory, financial development (through financial intermediaries) promotes economic growth (Levine, 1997). Among financial intermediaries, the insurance companies play an important role as they are the main risk management tool for companies and individuals. Over the years insurance sector has witnessed significant growth worldwide and BRICS nations are no exception to this phenomenon.

Literature shows three schools of thought on the nature of relationship between insurance and economic growth. The first school of thought postulates that insurance leads to economic growth, the second school of thought says that economic growth leads to development of insurance sector (Patrick, 1966). The third school of thought...
suggests bidirectional relationship between insurance development and economic growth (Haiss and Sumeigi, 2008).

The growing links between the insurance and other financial sectors also emphasize the possible role of insurance companies in economic growth (Rule, 2001). Understanding the fact that insurance not only facilitates the economic transactions through risk transfers and indentation but also provide financial intermediation. Keeping this in mind the main objective of the study is to examine the relationship between insurance development and economic growth in BRICS countries (Dash et al., 2016) for the period 1990-2014 and thus fill the gap in the literature.

The paper is organized in four sections. Section 2 gives theoretical approach to finance and economic growth. Section 3 provides the review of literature of the empirical studies on relationship between insurance and economic growth. Data and methodology is presented in Section 4. The last section gives the summary and conclusion.

**Theoretical Approach to Finance and Economic Growth**

Finance is developing very rapidly. This has been due to many factors, including, globalization, liberalization, deregulation, and the financial innovations. According to the finance-growth nexus theory financial development promotes economic growth through channels of marginal productivity of capital, efficiency of channeling saving to investment, saving rate and technological innovation (Levin et al., 2002).

Many theories and have shown that countries with better-developed financial systems enjoy faster, more stable and long-term growth. Well-developed financial intermediaries and financial markets have a significant positive impact on higher long-run growth. Financial development contributes to an increase in the efficiency of the use of savings through investments, which in turn would favor economic growth.

Economic growth is the result of various factors. There are two main approaches:
- classical and neo-classical theory (supply-side factors – long-term analysis);

The assumption of the relative isolation of the markets, according to which what happens to the money market does not influence the goods market, derives from the classical idea of an economy. According to classical theory, finance is neutral to the real economy. According to Walras’ theory of general equilibrium, financial intermediaries can neither contribute to the acceleration nor to the slowdown of the growth-rate of an economy. There is no need for functioned intermediation in hypothetical ideal environments such as those in the models of Arrow et al. (1958).

Schumpeter (1949) wrote that a well-functioning financial system plays an essential role in promoting economic development. He argued that the services provided by financial intermediaries – mobilizing savings, evaluating projects, managing risks are essential for economic development. Merton (1990) wrote that “... in the absence of financial systems ... technical progress will not have significant and substantial impact on economic development and growth” (Haiss and Sumeigi, 2008).

Several economists opined that finance is a relatively unimportant factor in economic development. Recent literature emphasizes the role of financial intermediaries in improving the allocation of resources. Authors like Greenwood and Smyth (1997), and also King and Levine (1993), have developed financial models in
which financial sector services contribute to economic growth.

Many empirical studies with respect to economic growth have generally dealt with the impact of the banking sector and the capital market on the economic growth (Levin et al., 2002). Even though the potential contribution of the insurance markets on economic growth has been recognized, the assessment of the potential causal relations between the insurance business and economic growth has not been studied in as much as that of banks (Arena, 2008).

In 2008 the World Economic Forum undertook a research initiative aimed at providing business leaders and policymakers with a common framework to identify and discuss the key factors in the development of the global financial systems and markets. For the purposes of the Financial Development Index (FDI), financial development was defined as the factors, policies and institutions that lead to effective financial intermediation in markets, and deep and broad access to capital and financial services.

Since 1964, in the context of the UNCTAD conferences, the importance of insurance in the process of economic growth of a country has been fully recognized, being regarded as a very important national sector, which is an essential feature of a suitable economic system, at the same time contributing to the economic growth and the promotion of employment.

Webb et al. (2002) carried out an empirical analysis between several countries (cross country) and have concluded that the development of the insurance sector and of financial intermediation increases the total productivity of the production factors by facilitating the efficient allocation of capital.

Financial development is measured by factors such as size, depth, access, efficiency and the stability of a financial system, including its markets, intermediaries, range of assets, institutions and regulations. One of the components of this index is insurance development, measured by the following indicators: (1) Life and Non-life insurance penetration – insurance premium per capita; (2) Real growth of direct insurance premiums, (3) Life and Non-life insurance density – relative insurance premiums to GDP (4) Relative value added by insurance to GDP, which measures the contribution of the insurance sector in the development of GDP.

### Table 1. Selected Data from the Ranking of Countries in Terms of Financial Development during 2008-2013

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>32</td>
<td>30</td>
<td>31</td>
<td>31</td>
<td>34</td>
<td>40</td>
</tr>
<tr>
<td>Russia</td>
<td>39</td>
<td>39</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>India</td>
<td>40</td>
<td>36</td>
<td>37</td>
<td>37</td>
<td>38</td>
<td>31</td>
</tr>
<tr>
<td>China</td>
<td>23</td>
<td>19</td>
<td>22</td>
<td>22</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>South Africa</td>
<td>28</td>
<td>29</td>
<td>32</td>
<td>32</td>
<td>32</td>
<td>25</td>
</tr>
</tbody>
</table>


World Economic forums first Financial Develops Report was published in 2008. The analysis of the financial development summary in Table 1 gives important insights, firstly of all the BRICS nations China (Li and Zheng, 2017) is the most financially developed as we can see from Table 1 from 2008 to 2013. South Africa (van Rooyen, 2014) moved from 25th rank to 28th rank in 2012. India (Dash, 2019)
moves from 31st rank to 40th rank because of the lower levels of financial sector liberalization. In 2008 the world was amidst of financial crisis that posed one of the greatest threats to the world economies. The growth and stability of emerging market economies has been the bright spot. But these economies in turn were dependent on their financial system.

The role of financial sector in economic growth has become a major topic of empirical research in the last few years and the work by King and Levine (1993) elaborated this. With the use of Granger causality test for a number of time series, Rousseau and Watchel (1998) confirmed that relationship exists between financial development and economic growth.

A large number of empirical studies have shown that financial development has an important impact on growth. Many studies have given the relationship between development of the banking sector and economic growth. Although insurance companies are growing in the importance in financial intermediation but they have not received much attention as not more work is there in this area.

Among financial intermediaries, insurance companies play an important role in the functioning of financial systems. They are the main risk management tool for companies and individuals. Since insurance companies act as financial intermediaries it connects their function with economic growth. Therefore, according to the theory, the insurance sector is one of the factors contributing to the long-term economic growth. The importance of the insurance industry in the economics of a country was already studied as early as in 1964, at the first UNCTAD conference: “a robustly national insurance and reinsurance sector represents an essential feature of a proper economic system, contributing to economic growth and fostering high employment”.

Insurance development is a part of financial development. In this study we accept the definition of insurance development (as analogous to financial development) as a long-term process of growth and improvement of the insurance market, institutions and instruments (qualitative changes), oriented to increase the effectiveness of their operations and increase the volume of insurance transactions (quantitative changes).

This study discusses possible contributions of insurance development to economic growth, based on the theories of financial intermediation and growth. The aim of the study is to examine the relationship between insurance and economic growth occurring because of the interdependencies of development of finance and insurance, and economic growth (finance-insurance-growth nexus theory).

The main research hypothesis is as follows: insurance development does not have a positive effect on long-term economic growth. The study also examines the short term relationship by studying if insurance development granger causes economic growth and vice-versa.

Review of Literature

Growth theory accords no special role to services activities with the exception of financial services. Many studies have shown that financial services can affect growth through enhanced capital accumulation and technical innovation. King and Levine (1993) identified five major functions that financial systems perform in reducing transaction costs and improving the allocation of real resources: facilitating the trading of risk, allocating capital to productive uses, monitoring managers, mobilizing savings through the use of innovative financial instruments and easing the exchange of goods.
and services. It is also argued by Rugiero (1998) that there is positive impact of financial services liberalization on economic efficiency. Banik and Bhaumik, (2014) suggested that, a competitive and well-regulated financial sector leads to the efficient transformation of savings into an investment which is one of the essential features of growth to occur.

The insurance facilitates not only economic transactions by transferring risks and granting insurance benefits should risks occur, but it is also regarded as a promoter of financial intermediation (Ward and Zurbruegg, 2000). Furthermore, the insurance may have an effect along the line of maintaining financial stability, of mobilizing savings, of facilitating trade and industry; it allows for the risk to be managed more effectively, helps reduce losses, allocate capital more efficiently, and it can also be a substitute or complement for government security programs (Skipper, 2001).

Despite the prominence of financial and insurance development in discussions on economic growth, there is still surprisingly little agreement on how to measure this development. Financial development is generally identified with the growth of the real size of the financial sector and in relation to GDP, i.e. financial deepening. The traditional measures of financial development and deepening are quantity indicators based on monetary and credit aggregates. The simplest indicator is the money/GDP ratio, which measures the degree of monetization in the economy. The ratio M2/GDP measures the overall size of the financial intermediary sector and is strongly correlated with both the level and the rate of change of the real GDP per capita (Outreville, 2011).

Beenstock et al. (1988) applied pooled time series and cross-section analysis on 1970-1981 data, covering mainly 12 countries. They regress premiums for property liability insurance (PLI) onto gross national product (GNP), income and interest rate development. They find that premiums are correlated to interest rate and GNP; marginal propensity to insure (short- & long-run) rises with income per capita and is always higher in the long run. Beenstock et al. (1988) argued that insurance consumption is not affected by economic cycles or cyclical income variations.

Holsboer (1999) focused on the recent changes in the external environment for insurance companies in Europe. He argues that the change of importance of insurance services in the economy is dependent on the growing amount of assets and the increasing competition between the financial sectors, but the author emphasis the prominent role in the services industry and denotes insurance sector development as a determinant for economic growth.

Ward and Zurbruegg (2000) examined the potential causal link between economic growth and the insurance market activity for nine OECD countries, between 1961 and 1996, employing the yearly real rate of GDP growth, as a measure of economic activity, as well as the yearly real rate of gross written premiums increase, as a measure of the insurance business. On the other hand, the insurance is most often regarded as an item of expenditure which is not required by potential buyers, particularly if they are not informed. Economists regard it as a top need that becomes fully available only after various other needs are satisfied, which is totally wrong (Liedteke, 2007).

Albouy and Blagoutine (2001) presented an analysis of the Russian insurance industry from the perspective of a transition to a market economy and of its integration into the world economy the premium-to-GDP ratio in Russia is no more than 1.27 per cent, a very low figure when compared with EU Member States and Eastern European
Countries. In the absence of a mass market due to the absence of a compulsory TPL automobile insurance, the Russian insurance market suffers important infrastructure problems and has not reached maturity.

Beck and Webb (2003) applied a cross-country and a time-series analysis for the relation between life insurance penetration, density, and percentage in private savings and in force to GDP as the dependent variables and GDP, real interest rate, inflation volatility and others the explanatory figures. Strong evidence was found for GDP, old dependency ratio, inflation and banking sector development.

Webb et al. (2002) examined banks, life and non-life insurers. In particular, they examined how banks and insurers contribute to economic growth individually and together. Their findings indicate that financial intermediaries are significant and synergy exists between banks and insurers. Furthermore, results show that a combination of banking and one insurance type has the strongest impact on growth. Conclusions indicate a supply-leading causality link.

Das et al. (2003) in the model they proposed identified contagious functions and properties of insurances. They further develop new financial soundness indicators for insurance companies by joining their experiences gained under the Financial Sector Assessment Program31 (FSAP) and from a review of recent failures in the sector.

Kugler and Ofoghi (2005) examined the long-term relationship between the size of the insurance market and economic growth in the United Kingdom. Using Johansen’s cointegration tests, they found a long-term relationship between the development in the size of an insurance market and the economic growth. The results show that for most cases there is a bilateral long-term relationship between the development of the size of an insurance market and economic growth. He concludes that causality runs in both directions.

Arena (2008) provides a systematic assessment of the impact of insurance market activity (life and non-life insurance) on economic growth. Both life and non-life insurance premiums have a positive and significant causal effect on economic growth, but life insurance is, according to Granger, the cause of economic growth in high-income countries. The impact of the development of non-life insurance was confirmed in both developing and developed countries, it is greater in developed countries than in developing ones. Conclusions regarding a causality link show that it is supply leading, both in life and non-life sectors. Life insurance is more important for high-income countries.

Haiss and Sumegi (2008) examined whether insurance influences economic growth and if it influences how it does. They developed a modified production function to empirically investigate the endogenous insurance-growth model. Their research produced mixed results. Their results show no evidence of a correlation between aggregate insurance premium income and GDP growth. However, strong evidence of the impact of life insurance on economic growth has been found.

Besides, Haiss and Sumegi (2008) investigated both the impact of insurance investments and premiums of life and non-life segments on GDP growth in Europe. Their findings emphasize the impact of the real interest rate and the level of economic development for the insurance-growth-nexus. They argued that the insurance sector needs to be paid more attention in financial sector analysis and macroeconomic policy. They concluded that it is a supply leading causality link. Life insurance is more important for high-income countries and non-life is more important for emerging EU
countries.

Ortyński (2010) studied the relationship in Poland. The results show that there is a positive and statistically important relationship between the development of the insurance market and economic growth in Poland. A strong relationship was observed between the development of the non-life insurance market and the value of the real GDP.

Bednarczyk (2012) examined in her work the long-term relationship between insurance development and economic growth in Poland. Insurance development is measured by the growth-rate of insurance density and the economic growth by the GDP per capita. Three different insurance variables were used – life insurance premium per capita, non-life insurance premium per capita, and total insurance premium per capita. Econometrics tests were used for cointegration and Granger causality. The estimation method used the Ordinary Least Square (OLS) for time series, with data on a quarterly basis. Using Johansen’s cointegration tests and the Engle-Granger procedure, the author finds a long-term relationship between insurance development and economic growth. Both methods gave similar results. There was no causality proven by the Granger causality test. It was conclude that there were no significant causality links between insurance and growth in Poland.

Ul Din et al. (2017) examined the relationship between insurance and economic growth in 20 countries for the period 2006–2015. The study used fixed effect model and found a positive and a significant relationship between life insurance and economic growth for developed and developing countries. The results revealed that the role of non-life insurance is more significant for developing countries as compared to developed countries.

Cavalcante et al. (2018) analyzed the relationship of economic growth and financial development as determinants of non-life insurance (NLI) premium consumption, using data from a highly volatile economic environment. The empirical results revealed a positive relationship among economic growth, credit, and the NLI market in Brazil. Results also suggest Granger bi-causality between economic growth and NLI premiums in Brazil.

Under these circumstances, our research methodology is based on the indicators that show the size of the insurance market in BRICS Countries. The most used indicators in the literature and international statistics are: the annual amount of the insurance premiums, the share of Gross written premiums within the GDP - also known as the insurance penetration degree, and the average of the insurance premium paid per capita during a year - known as the degree of density in the field of insurance. In order to uncover the relation between insurance and economic growth in BRICS, we have used Panel Co-integration and Grangers Causality test to analyze the GDP indicators and those of the insurance market. The conclusion will show to what extent economic growth and insurance growth have a long run relationship in BRICS countries, within both the field of life insurance and that of non-life insurance.

The strength of the link between the insurance sector and economic growth, however, is not static. As the relationship between bank, capital market finance and economic growth varies with the level of economic development, so does the insurance-growth nexus. The potentiality of growth contribution is much higher than in developing countries where the insurance sector hardly reaches the same importance and evolutionary stage.
Data and Methodology
This research estimates and analyses the relationship between insurance sector development and economic growth of BRICS countries i.e., Brazil, Russia, India, China and South Africa are chosen. The Life insurance penetration, Non-Life insurance penetration and total insurance penetration are variables taken for insurance development and GDPP (GDP per capita) is taken for the economic growth. Therefore time series of five countries for 25 years i.e., from 1990-to 2014 is considered for four variables.

$H_0$: There is no co-integration between insurance development and economic growth.

$H_1$: Co-integration exists between insurance development and economic growth.

Pedroni co-integration (Pedroni, 1999) was conducted to check the long run relationship and Grangers causality tests were conducted to check the short run relationship between insurance and economic growth.

Results and Findings
Pedroni panel co-integration (Pedroni, 1999) is carried out to examine the long run equilibrium relationship between insurance development and economic growth. The panel Cointegration test results are presented in Table 3.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDPP</td>
<td>3.31667</td>
<td>3.93852</td>
<td>-3.93285</td>
<td>-3.30247</td>
</tr>
<tr>
<td></td>
<td>(0.9995)</td>
<td>(1.000)</td>
<td>(0.0000)*</td>
<td>(0.0005)*</td>
</tr>
<tr>
<td>Life Insurance penetration</td>
<td>-0.03601</td>
<td>0.70046</td>
<td>-4.54151</td>
<td>-3.56999</td>
</tr>
<tr>
<td></td>
<td>(-0.4856)</td>
<td>(0.7582)</td>
<td>(0.0000)*</td>
<td>(0.0002)*</td>
</tr>
<tr>
<td>Total Insurance penetration</td>
<td>-0.55162</td>
<td>0.76022</td>
<td>-5.50308</td>
<td>-3.76301</td>
</tr>
<tr>
<td></td>
<td>(0.2906)</td>
<td>(0.7764)</td>
<td>(0.0000)*</td>
<td>(0.0001)*</td>
</tr>
<tr>
<td>Non-Life Insurance</td>
<td>-0.33734</td>
<td>1.05317</td>
<td>-5.41024</td>
<td>-3.91312</td>
</tr>
<tr>
<td></td>
<td>(0.3679)</td>
<td>(0.8539)</td>
<td>(0.0000)*</td>
<td>(0.0000)*</td>
</tr>
</tbody>
</table>

Note: *indicate the rejection of null hypothesis at 1% significance level. Probability values are presented in parenthesis.

Pedroni’s panel co-integration results (Pedroni, 1999) found long run association between economic growth and insurance sector development. Thus, it shows the
relationship between insurance development and economic growth of an economy. The results show that as the economy grows the insurance market (both life and non-life) also grows. Finding long run equilibrium necessitates understanding the causal relation between economic growth and insurance sector growth.

To estimate the causal relation between the development of insurance sector and economic growth Grange causality test (see in Dash, 2014; Dash, 2015; Dash, 2017) has been employed and the results are presented in Table 4.

Table 4. Granger Causality Test

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life insurance penetration does not Granger Cause GDP per capita growth</td>
<td>1.94987</td>
<td>0.1475</td>
</tr>
<tr>
<td>GDP per capita growth does not Granger Cause Life insurance penetration</td>
<td>8.51822</td>
<td>0.0004*</td>
</tr>
<tr>
<td>Total insurance penetration does not Granger Cause GDP per capita growth</td>
<td>1.07151</td>
<td>0.3463</td>
</tr>
<tr>
<td>GDP per capita growth does not Granger Cause Total insurance penetration</td>
<td>8.45609</td>
<td>0.0004*</td>
</tr>
<tr>
<td>Non-Life insurance penetration does not Granger Cause GDP per capita growth</td>
<td>1.06169</td>
<td>0.3496</td>
</tr>
<tr>
<td>GDP per capita growth does not Granger Cause Non-Life insurance penetration</td>
<td>8.18867</td>
<td>0.0005*</td>
</tr>
</tbody>
</table>

Note: rejecting the null hypothesis at 1% level of significance

The test accepts the null hypothesis and proves that development in the life insurance, non-life insurance and total insurance does not granger cause the economic growth. The test results reject the null hypothesis and suggest that the GDP per capita growth causes life insurance penetration, total insurance growth and non-life insurance growth. The causality test results suggest that there exists a unidirectional relation between Economic growth and Insurance sector development. It also shows that there is no relation between insurance development and Economic Growth.

Conclusion

The aim of this paper was to provide a systematic assessment, which is based on statistical methods and on a series of data gathered along 25 years, of the impact of the insurance business both on the entire market and in its structure, on the life insurance and non-life insurance, in relation to the economic growth in BRICS countries. Thus, it is established that there is stable long-run relationship between insurance development and economic growth.

The study also examines the causal link between the insurance market, measured by the degree of insurance penetration, and the degree of density and the economic growth, measured by GDP per capita. Regarding the results of the panel causality tests, we found a uni-directional causal relationship between economic growth and insurance development for all BRICS countries of the panel. This result is consistence with Akinlo (2015) that found uni-directional relationship between economic growth and insurance development and is also a confirmation of Outreville (2011) statement that insurance development is very important for the economic development, as it makes long-term investments available for economic growth, and also concurrently reinforcing the risk-taking abilities.

Moreover, it is observed that the profile of the potential insured in BRICS countries is defined and shaped by the society, by the factors which are in close connection with the income of the population, their way of life, the degree of
knowledge, the degree of civilization and culture. As such, as highlighted by Liedtcke (2007) in his book, the insurance should not be regarded by the potential insured as an unnecessary expenditure, which would only be done once their basic needs would be satisfied, but as a form of effective protection and saving money. It is observed that the level of insurance penetration and density is in line with the development in the BRICS countries. Given the huge body of research on the relationship between bank/capital market – finance and economic growth, there is a need for more empirical work on the insurance-growth nexus.

References

VOLUME 8 NUMBER 3 SUMMER 2019


performance: historical evidence from five industrialized countries”, *Journal of Money, Credit and Banking*, Vol. 30 No. 4, pp. 657-678.


