

Are Securities Secure: Study of the Influence of the International Debt Securities on the Economic Growth

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Abstract. The paper studies the interdependence of the amount of international debt securities, amounts outstanding by country (borrowers) and the GDP growth by country. The author have chosen 34 countries, that represent every region included in the BIS classification, that is developed countries, offshore centers, developing Europe, Latin America, Asia and the Pacific and Africa. It was found that the excessive amount of such type of securities in comparison with GDP leads to slowdown in the economic growth next year.

Keywords. International debt securities, Economic growth, Financial crisis

Key terms. Development, MathematicalModel

1 Introduction

The last financial turmoil has revealed the drawbacks of the existing global financial system. Surprisingly, the worst crisis since the Great Depression has offered a range of opportunities to the world society: to examine the system, exclude “toxic” elements and introduce new methodology to financial regulation.

During the last decades new avenues for financing were creating, deepening the financial system aside from widening the choice of monetary instruments [1] that have caused overestimation of assets and, consequently, financial collapse.

Despite this issue is under thorough control of Bank of International Settlements, Securities and Exchange Committee, International Derivative and Swap Association, Securities Industry and Financial Market Association, every scientists, analyst, governor, outstanding person and a regular student has its own interpretation of how the crisis works, its causes and consequences.

One of the reasons for the growing financial instability was the excessive amount of various types of securities both in national economies and international arena as well as the complexity of the securities issued. New types of financial instruments usually at first are accepted as great invention of humanity, then, especially during recessions are usually blamed for crisis for speculation reasons [7]. After the recovery, they are still widely spread all over the world. Futures, options and other derivatives have experienced such an attitude [4]. International debt securities are considered to be a financial instrument. The amount of securities outstanding in 2007, i.e. country's liabilities, could prevent countries from sustainable growth in 2008.

To the author's point of view, it is reasonable to study the interdependence of the amount of International debt securities, amounts outstanding by country (borrowers) and the GDP growth by country. The presence of such interdependence can allow us to criticize this type of securities and advise the countries to minimize their usage for the sake of sustainable economic growth.

2 Results

The authors are analyzing the interdependence of the amount of international debt securities outstanding in 2007, and the economic growth, expressed in GDP index in the research.

Debt security is a negotiable financial instrument serving as evidence of debt [5]. The statistics on international debt securities issues cover long-term bonds, notes, short-term money instruments [2]. Debt securities include government bonds, corporate bonds, CDs, municipal bonds, preferred stock and collateralized securities (such as CDOs, CMOs, GNMA's). Debt securities may be protected by collateral or may be unsecured, which underlines the importance of scrutinizing them as one of the key instruments of securitization. Collateralized debt obligations are considered to be a risky instrument as far as their coupons and principal repayments are dependent on a diversified pool of loan and bond instruments, either purchased in the secondary market or from the balance sheet of an original asset owner (Handbook of Securities Statistics). Consequently, through assessing the value of underlying assets, collateralized debt obligation as well as other asset-backed securities spread risk while diversifying it, meanwhile creating a range of credit derivatives. These instruments are widely used to make the debt more liquid and make the money lent work as if they were not borrowed and, furthermore, get a margin. Therefore, the author finds it crucial to pay significant attention to this kind of financial instrument as a mean of spreading risk of insolvency of an entity within the international scale.

The BIS definition of international securities (as opposed to domestic) is based on three major characteristics of the securities: the location of the transaction, the currency of issuance and the residence of the issuer. International issues comprise all foreign currency issues by residents and non-resident in a given country and all domestic currency issues launched in the domestic market by non-residents [2].

GDP in current price, purchasing power parity, is the second element of the research. It was chosen as an indicator of the national output, combining real and finan-

cial sector, thus reflecting the size of the economy. The amount of international debt securities can be compared to the GDP, as both indicators reveal the capacity of the countries' economies.

In the figure 1 one can see historical correlation between the international debt securities and GDP in current prices (data from [1], [2], [3], [8]), which shows that the interdependence between 2 components really exists, in addition, during 2002-2008 the line shows different slope. In 2004 and 2005 the inclination is lower, which means the slowdown in GDP growth rate and IDS amounts and, on the contrary, in 2007 and 2008 the graph indicates the rise of the world economies.

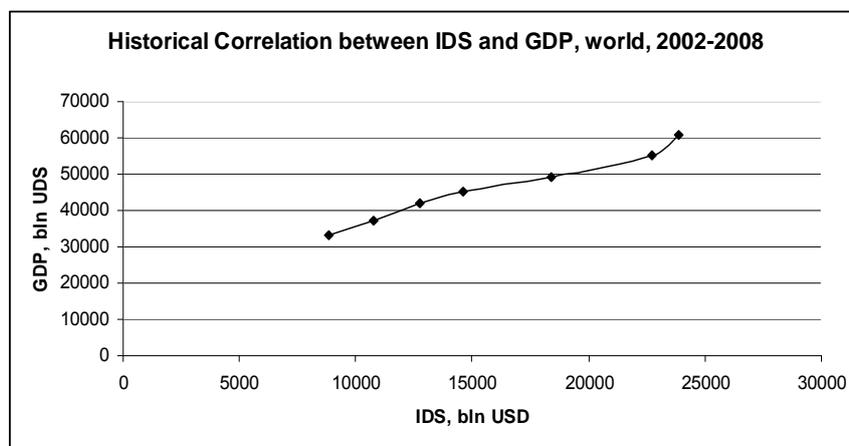


Fig. 1. Historical correlation between IDS and GDP, world 2002-2008

As mentioned in the title, the graph shows the world's tendency. The last economic crisis has damaged major economies leaving some small and developing economies untouched, despite of its scale. This means that by-country analysis is necessary to provide the real evidence of such correlation.

The authors have chosen 34 countries that represent every region included in the BIS classification that is developed countries, offshore centers, developing Europe, Latin America, Asia and the Pacific and Africa. Although the most variation in the amount of securities outstanding had been noticed while scrutinizing the data from developed countries the data utilized represents each continent. Africa is represented by Egypt, Lebanon, Saudi Arabia and UAE, Asia and the Pacific – the Philippines, Singapore, Japan and China, Developing Latin America – Argentina, Brazil, Colombia, Costa Rica, Developing Europe – Belarus, Bulgaria, Czech Republic, Estonia, Russia, Ukraine, offshore centers – by the Bahamas, Developed economies – by Australia, Austria, Belgium, Canada, Finland, France, Germany, Greece, Iceland, Italy, Norway, Spain, Sweden, the UK and US. The X, independent variable, is the amount of international debt securities by country outstanding in 2007 divided by the nominal GDP in billion of USD in 2007, whereas the dependent variable is GDP growth rate in 2008 in comparison with 2007. The linear regression is shown on figure 2.

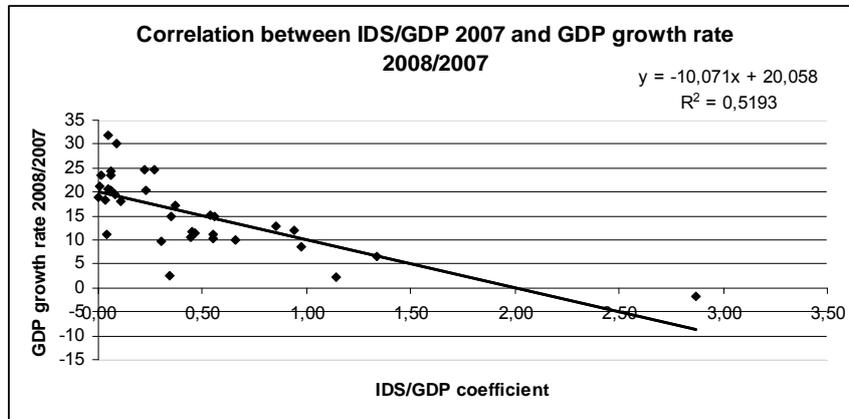


Fig. 2. Correlation between IDS/GDP 2007 and GDP growth rate 2008/2009

The model is described by formula 1:

$$GDP = 20,058 - 10,071 * COEF \tag{1}$$

where GDP – nominal growth rate in 2008 compared to 2007;
 COEF – IDS/GDP coefficient as a ratio of IDS amounts outstanding 2007 and GDP (in current prices, power of purchasing parity, 2007)

The slope is negative, which means the opposite correlation between variables, the bigger the coefficient in 2007, the lower the GDP growth rate in 2008, which makes sense and confirms the author’s theory. The correlation coefficient, which shows the fraction of relationship between variables is -0,72 or 72% of opposite relationship. Therefore, the relation is considered to be strong. The determination coefficient is 0,52 or 52%, which means the variation of the dependent variable is explained by 52% by the independent one.

The linear regression has been chosen because the goal of the author was to find the existence of the relationship between variables, and in addition, negative one, however, admitting the complexity of the relationship, not exactly finding the most appropriate one.

Among the obstacles which prevent linear model from being “best fit” are, first of all, the different level of financial market development and, thus, the vital need for specific financial instruments usage. For example, Belarus is not yet ready for developing credit derivatives, besides, the amount of the securities outstanding has been the same for a couple of years, that means that the amount of securities is not the principal reason for economic crisis. Another reason is overstated prices in some countries which result in the high inflation level, which increases the GDP index far too high to depict the precise relationship between variables. Examples can be Ukraine, Russia and Argentina. As far as offshore centers are concerned, their GDP doesn’t always

illustrate the real production but the value of financial operations, so they need individual approach. However, there are some deviations in the model: for example, Iceland – at the lowest point, because of negative GDP growth, or the US and The UK with the lowest GDP growth in 2008/2007 and highest amount of securities within examined countries.

In the real economic world one can hardly obtain “pareto efficient” outcomes, thus no sector of the economy can be better off without making another worse off [6]. Therefore, the increase of the international debt securities, i.e. rise in liquid liabilities, results in lowering the GDP growth rates. Even though the GDP measures only market production and cannot totally used as a measure of country’s well-being [6], a better measurement of economic activity hasn’t been offered yet. Thus, the influence of financial sector on the overall economy proves the existence of “systemic externality” [6] of the financial market.

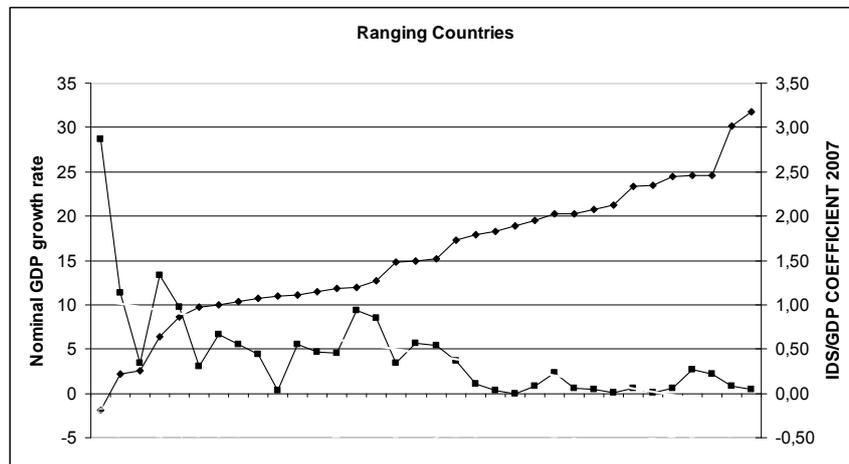


Fig. 3. Ranging countries

The figure 3 is built with the purpose to prove the main idea of the research: the bigger the volume of IDS outstanding (here IDS/GDP coefficient to make it adjustable to different economy sizes), the lower the GDP growth rate. Though, the graph doesn’t totally reflect the inverse dependence, it shows the tendency and proves the idea for the majority of countries: while the slope of the GDP growth rate curve is positive, the slope IDS/GDP coefficient curve is negative.

Among the factors that prevent the ideal illustration of the theory is the nominal character of the variables. One of the elements is the security market capitalization which can not possibly be turned into real one, therefore the usage of nominal GDP growth rate is reasonable. Another factor is the uniqueness of economic development of the countries, like the inflation and unemployment level and the unique interdependence of the economic sectors. Consequently, it is necessary for the countries to develop its own targeting rules, using its own IDS/GDP ratio and work out the model of the development that will be adequate for a single economy specifications.

Perhaps, it is quite possible to work out the limit in IDS/GDP ratio which countries shouldn't exceed in order not to affect sustainable development, but this work requires, first of all, individual approach and demands profound knowledge on economic development of each country.

3 Conclusions

The overall significance of the model is to show the impact of the issuance of international debt securities on the economic growth of the countries. Since the slope of the regression line is negative, the excessive amount of such type of securities in comparison with GDP leads to slowdown in the economic growth next year. Due to the fact that the issuance of securities is partly managed by governments and financial organizations (in case of the US – Securities and Exchange Committee (SEC), for example), the issuance of them can and should be regulated. After the first wave of financial crisis has gone some rating agencies, for example, S&P have offered downgrading system for some risky instruments, thus protecting the market from distributing of excessive risk, as well as SEC has been promoting a new bill to the White House for a while (Reuters). This information shows that global financial society is already trying to react and eliminate some of the causes of the financial crisis, however, not yet fruitful.

The global financial crisis has proved the necessity of the permanent monitoring and control of the financial system, especially with regard to financial architecture and innovations [6]. The research has revealed that the volume of the international debt securities should be a subject of the country's guideline to optimal control and efficient rules for financial policy. Increase in the IDS/GDP ratio may lead to financial instability and increased involvement in the global financial market. In addition, secure financial instrument usage with careful risk control limits allows financial and, therefore, the whole economic system to reach sustainable development.

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