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### CORPORATE AND SOVEREIGN FINANCING IN THE EUROBOND MARKET: SOME KEY ISSUES

#### FINANSIRANJE KOMPANIJA I DRŽAVA NA TRŽIŠTU EUROOBVEZNICA: NEKA KLJUČNA PITANJA

**Summary:** *In this article the author considers the previous importance of the Eurobond market for corporate and sovereign financing, corporate and sovereign Eurobonds issuing process, as well as costs and effects of corporate and sovereign financing in the Eurobond market. These four issues associated with corporate and sovereign financing in the Eurobond market are studied through exposing the relevant theoretical knowledge and results of empirical research. According to author's findings, in developed countries the Eurobond market is more important for corporate than for sovereign financing. On the contrary, in developing countries the Eurobond market is more important for sovereign than for corporate financing. Most theoretical attitudes associated with the influence of different factors are grouped in three categories: issue characteristics, market factors and macroeconomic factors, as well as the influence of contagion on the cost of sovereign and corporate financing in the Eurobond market were empirically confirmed. Benefits of corporate and sovereign financing in the Eurobond market are certainly large and risks can successfully be managed.*

**Keywords:** *sovereign financing; corporate financing; the Eurobond market*

**JEL classification:** *G15, G32, H63*

**Režime:** *U ovom članku autor razmatra dosadašnji značaj tržišta euroobveznica za korporativno finansiranje i finansiranje države, proces izdavanja korporativnih i državnih euroobveznica, kao i cijenu i efekte korporativnog finansiranja i finansiranja države na tržištu euroobveznica. Ova četiri pitanja vezana za korporativno finansiranje i finansiranje države na tržištu euroobveznica razmatraju se kroz navođenje relevantnih teorijskih saznanja i rezultata empirijskih istraživanja. Prema nalazima autora, u razvijenim zemljama tržište euroobveznica je važnije za korporativno finansiranje nego za finansiranje države. Nasuprot tome, u zemljama u razvoju, tržište euroobveznica je važnije za finansiranje države nego za korporativno finansiranje. Većina teorijskih stavova vezanih za uticaj različitih faktora grupisanih u tri kategorije: karakteristike emisije, tržišni faktori i makroekonomski faktori, kao i uticaj širenja zaraze na cijenu finansiranja države i korporativnog finansiranja na tržištu euroobveznica je empirijski potvrđena. Koristi od korporativnog finansiranja i finansiranja države na tržištu euroobveznica su neosporno velike, a rizicima se može uspješno upravljati.*

**Ključne riječi:** *finansiranje države; korporativno finansiranje; tržište euroobveznica*

**JEL klasifikacija:** *G15, G32, H63*

## 1. INTRODUCTION

Bonds issued in international markets are an increasing source of debt financing for all entities both in developed and emerging market economies. For example, according to data gathered by Fuertes and Serena (2018), in international markets total amount of bonds issued by non-financial corporate borrowers from emerging market countries increased from 15.33 to 129.89 billion US dollars in the period between 2000 and 2014. The largest total value of bond issuance was reached by issuers from Latin America, followed by issuers from emerging markets from Asia and Europe, then from Africa and Middle East, respectively. Using database comprising 3,944 debt securities that make up a total amount of 1.2 trillion US dollars, which is issued by 1,584 non-financial firms headquartered in 36 emerging economies (except China) from four emerging market economies regions: emerging Asia, Latin America, emerging Europe and Africa and Middle East and that were active in international markets during the period of 2000-2014, Fuertes and Serena researched how non-financial corporate borrowers of emerging market economies made a choice among the existing international bond markets: global, US144A and Eurobond markets. They also analysed if there were

any changes in the debt-choice behaviour of firms after the global financial crisis. Among emerging market corporate borrowers, the Eurobond market is of the utmost importance, the US144A bond market is of the second importance and the global bond market is the last one. Corporate borrowers issuing bonds in the Eurobond markets have the lowest credit quality and the lowest ability to absorb high flotation costs and exhibit the highest informational asymmetries. On the contrary, corporate borrowers issuing global bonds have the highest credit quality and the highest ability to absorb high flotation costs and exhibit the lowest informational asymmetries. Firms issuing bonds under Rule 144A are somewhere in the middle. Dominance of the Eurobond market among emerging market economies corporate borrowers has sustained and additionally increased after the global financial crisis.

The Eurobond market is the largest international capital market in the world. It is largely a wholesale market in which investors are large sophisticated institutional investors, following “buy and hold” strategies. Therefore, the Eurobond market is less liquid. In the Eurobond market it is traded by Eurobonds. A Eurobond has a confusing name. It does not refer to bonds issued in Europe or bonds denominated in the euro currency, nor does it refer to possible European sovereign bond underwritten jointly and severally by all Eurozone governments, which was considered as a solution to a fiscal deficit problem after global financial crisis in Eurozone. Actually, a Eurobond is sovereign or corporate bond denominated in Euro-currency. It is simultaneously issued in several markets and sold to investors in a number of countries other than the country from which the Eurobond denomination currency originates. For example, Eurobond is American corporate bond denominated in US dollar that is issued and sold outside American financial market. Eurobonds are largely bearer, middle-term, with maturity between 5 and 7 years and denominated in US dollar. Although American dollar is the most frequently used currency for Eurobond denomination, it is expected that the importance of euro as a Eurobond denomination currency will increase in the future. Eurobond issuance is not under the jurisdiction of any single country. Since Eurobonds are not subject to any local regulation, issuers face the lightest regulatory requirements. Eurobonds cannot be sold in the US capital markets because they do not comply with US securities laws.

The most important issuers of Eurobonds are financial institutions. In addition to financial institutions, Eurobonds are also issued by leading multinational companies, national and regional governments and their agencies, and international organizations, such as the World Bank, the Asian Development Bank and EU-related organizations. We will put focus on Eurobonds issued by corporations and sovereigns. Specifically, we will consider theoretical knowledge and empirical evidence associated with the importance of the Eurobond market for corporate and sovereign financing, corporate and sovereign Eurobonds issuing process, the cost of corporate and sovereign financing in the Eurobond market and the effects of corporate and sovereign financing in the Eurobond market. Those four key issues will be elaborated in the next four sections of the article. Finally, we come to the conclusion.

## **2. THE IMPORTANCE OF THE EUROBOND MARKET FOR CORPORATE AND SOVEREIGN FINANCING: HISTORICAL REVIEW**

A Belgian petroleum company Petrofina completed the first Eurobond issuance in 1957. The issue amount was small i.e. US\$5 million. Since then, the Eurobond market has grown and became the largest international capital market in the world, “with approximately \$20trn equivalent of bonds outstanding as at mid-2013. For many years it grew at a compound rate of 20%. The market has played a pivotal role in the worldwide flow of capital” (O'Malley 2014, XII).

Although any segmentation of the Eurobond market development is hardly feasible and inevitably arbitrary, there is consensus among theorists and practitioners about stages in the development of market. Namely, the Eurobond market has developed through three phases. The first phase was from the establishment of the market until 1984. That period was marked by the gradual opening up of the international markets and deregulation of financial system. During that period, interest equalization tax and withholding tax, imposed by American government, contributed to development of the Eurobond market. Although the interest equalization tax was abolished in 1974 and the withholding tax in 1984, the Eurobond market continued to evolve.

The second phase of the Eurobond market development was from 1984 until the introduction of the euro, i.e. until 1999. From the beginning of that development market phase the Eurobond

market had a steady increase. As Melnik and Nissim (2003) reported, total annual value of new issues of Eurobonds grew from about 20 billion dollars in the mid-seventies to more than 800 billion dollars by the end of the nineties. “The Eurobond market growth in the 1980s was partly stimulated by the fact that corporations found banks increasingly reluctant to lend funds due to problems stemming from the third world debt crisis. Furthermore, many corporations realised that they could exploit their credit ratings which were often good, if not better than some of the banks that they had traditionally borrowed funds from, particularly as they increasingly deemed the rates of interest and security requirement of banks to be excessive. In addition, many corporations found that banks were reluctant to lend at fixed rates of interest over a longer time horizons that corporations were interested in.” (Pilbeam 2006, 315) “The Eurobond market saw rapid expansion in the 1990s, averaging an annual growth of 18.4% from 1990 to 2000” (Kollo 2005, 9). “While only 1,206 Eurobonds with total face value of US\$169.8 billion were issued in 1990, 3,716 Eurobonds with a face value of US\$857.3 billion were issued in 1999” (Claes et al. 2002, 373-374).

“Originally, the main borrowers in the Eurobond market were international agencies, sovereign governments of developed countries and major banks. After the mid 1980s, high quality corporate borrowers also entered the market. In the mid 1990s, corporate borrowers became dominant. Most corporate Eurobonds are issued by firms from the financial services sector. Other important corporate participants, on the supply side, are industrial conglomerates, utilities and firms from diverse sectors such as food, chemicals and communication equipments. Most of the bonds are issued by entities from highly developed countries such as the USA, the UK, Netherlands, Japan, France and Germany, which together account for about 53% of the total nominal value of new issues. International agencies, such as the European Investment Bank and the International Bank for Reconstruction and Development, collectively issue around 9% of the total value. The remaining 38% are issued by firms and government units from other countries” (Melnik and Nissim 2004, 3-4).

Regional and sector structures of the Eurobond market were researched by Claes et al. (2002). As well as Melnik and Nissim (2004), the authors found that the Eurobond market was geographically concentrated. The six biggest issuing nationalities (the USA, the UK, Netherlands, France, Germany and Japan) issued more than 50% of all Eurobonds. Tax haven countries such as the Cayman Island, the Netherlands Antilles and the Channel Islands issued approximately 10% of all Eurobonds. Supranational issuers issued nearly 8% of all Eurobonds. The majority of Eurobonds were issued by the corporations from financial industry. Together, issuers both from the banking industry and from the financial services industry and financial corporates issued nearly 70% of all Eurobonds. States and governments issued on average the largest amounts of Eurobonds. Generally, “sovereign borrowers rank as one of the most important categories participating in the Eurobond market. They tap this market to fund specific projects, to finance balance-of-payments shortfalls, or to boost foreign exchange reserves important to countries’ transfer risk assessment” (Amira 2004, 795-796).

The Eurobond market was affirmed among emerging market countries since the mid 1990s, too. The issuance of Eurobonds denominated in the currencies of emerging market countries was facilitated by deepening integration of the financial markets during that period. Issuers of Eurobonds denominated in the currency of small and open economies were well-capitalised entities with high, often AAA ratings, primarily international (supranational) financial institutions (World Bank, European Bank for Reconstruction and Development, European Investment Bank), as well as national development institutions and global banks. Among the Eurobonds denominated in the currencies of emerging market countries the largest amount of Eurobonds was issued in Turkish lira, South African rand and Australian and New Zealand dollar. In spite of the above mentioned trends associated with Eurobond market development in emerging market countries, “in the case of most emerging countries, the aggregate value of the portfolio of Eurobonds issued in their domestic currency is marginal compared to the net external debt of the subject-matter country. However, in some countries – for example, New Zealand, Australia and South Africa – Eurobond-type issues have reached a level where the foreign agents can make a considerable contribution to financing the net external debt” (Gereben and Mák 2010, 30).

The introduction of the euro represented the beginning of the third phase of Eurobond market development and of the modern era of the market. That phase of Eurobond market development has been very turbulent, especially due to global financial crisis. Despite the financial disturbances so far, the Eurobond market has survived. The main reasons for the market survival are its unique characteristics; remaining largely unregulated and untaxed, as well as flexible and open to innovation and change. Contrary to certain domestic markets, the Eurobond market has responded to threats to

survivability by offering an ever-increasing range of instruments, currencies and innovative product structures. During this period the Eurobond market grew both in developed (see more: Claes et al. 2002) and developing countries, but rapidly grew in developing countries. Apart from others, Presbitero et al. Gevorkyan and Kvangraven, Masetti, Senga and Cassimon. Bunescu, and Gereben and Mák wrote about rapid growth of the Eurobond market in developing countries.

According to the data presented by Presbitero et al. (2016), since the beginning of 2000s a number of low-income developing countries have issued sovereign bonds denominated in foreign currencies in the international capital markets. African frontier markets have contributed significantly to the growth of amount of international sovereign bonds issued by low-income developing countries (Gevorkyan and Kvangraven 2016). During 1995 to 2014 15 low-income developing countries issued international sovereign bonds, 11 of which were in Sub-Saharan Africa. In 2013 and 2014 low-income developing countries issued bonds amounting US\$4 and US\$8 billion, respectively. In 2015 and 2016, due to worsening global economic conditions and the lower commodity prices, the number of international sovereign bond issues was decreased and countries that were able to issue sovereign bonds (Cameroon, Cote d'Ivoire, Ghana and Zambia) did so at higher yields (see more about Eurobond issuance by Sub-Saharan African sovereigns in 2015 and 2016: Masetti 2015; Senga and Cassimon 2018). In order to identify drivers of international sovereign bond issuance in emerging market and developing economies, Presbitero et al. (2016) examined the experience of 105 countries, 52 of which were issuers, i.e. they issued sovereign bonds in the international capital markets at least once, and the rest were non-issuers, i.e. they never issued these bonds during the period 1995–2014. They found that “issuers typically have higher per capita real GDP, deeper financial markets, stronger external positions, greater government effectiveness and are more likely to have had an IMF program in place over the previous 3 years (compared to non-issuers)” (Presbitero et al. 2016, 3). When the sample of issuers was divided into regular (those issuers that issued in 5 or more years during 1995–2014) and occasional issuers, the authors found that regular issuers had higher per capita real GDP, stronger external reserve positions and more effective governments than occasional issuers. Contrary to African frontier markets, European emerging market and developing economies have contributed, to a lesser degree, to growth of amount of international sovereign bonds issued by low-income developing countries.

The Eurobond market growth in some European emerging market and developing economies was researched by Bunescu (2016) and Gereben and Mák (2010) and others. In Romania, for example, “until 2008 bonds were sold on foreign markets, after 2008 the focus is on domestic bonds issues and their values exceed the annual amount of Eurobonds. Also, a constant annual growth of Eurobonds and domestic bonds can be noticed since 2009.” (Bunescu 2016, 19) According to Bunescu (2016), in 2015 bonds had the largest share in government public debt. Bonds were followed by Eurobonds. Bonds and Eurobonds represented more than one-third and a quarter of government public debt, respectively. If government public debt is viewed according to residency of creditors and debt instrument, it can be seen that more than 80% of domestic government public debt were domestic bonds and about 50% of external government public debt were Eurobonds. The Ministry of Public Finance plans to maintain Romania’s presence in the international capital markets through issuances of Eurobonds denominated mainly in euro. Then, the issuance of Eurobonds denominated in US dollar or in other currencies on external markets will be considered, as it brings benefits that are manifested in longer maturities, increased capacity of absorption of new issuances and a diversified investor base.

During the first 10 years of this century euroforint bond market slightly developed. According to the data presented by Gereben and Mák (2010), the portfolio of bonds denominated in forint and issued by foreign economic entities abroad amounted to just approximately 520 billion forints at the end of March 2010. Euroforint bond market development was primarily stimulated by the appearance of supranationals issues. Issuers of euroforint bonds were international organisations, financial institutions operating in Hungary as a subsidiary of some foreign financial institutions, and banks pursuing business operations independently from Hungary. Euroforint bonds issued by those institutions accounted for 55, 10 and 35 percent of entire market, respectively. An average maturity of issued bonds was 3 years. The average amount of the individual issues was 7 billion forints. That average was resulted by combination of a bit higher average amount of supranational banks’ issues and lower average amount of the other issues.

### 3. CORPORATE AND SOVEREIGN EUROBONDS ISSUING PROCESS

Eurobond issuing process starts with contracting issuing terms such as issue size, years of maturity, denomination currency, interest and repayment structure, credit quality, embedded options and so on, between issuer and the first investors. The interrelationships between contract feature choices are important aspects of contract design. Do Rosário Correia et al. (2004) and Do Rosário Correia (2008) by herself provide a comprehensive analysis of the determinants of debt contract terms and of the interrelationships between contract feature choices in their studies. For the research the authors used sample of 377 Eurobond issues offered by 109 non-financial UK companies distributed across 25 different industries during the period 1986–1999. Do Rosário Correia (2008) found that debt contract features are interrelated. The author found a strong direct relation between the choice of maturity and the inclusion of a call option or of protective covenants. Furthermore, the author found that the inclusion of convertible option was inversely related with the inclusion of a protective covenants. Also, the author discovered a complementary relation between the inclusion of a call option and the inclusion of a convertible option. According to the evidence associated with the determinants of debt contract terms, maturity of assets in place, the firm's credit quality, the firm's growth and liquidity risk considerations are important for manager's decision making. Positive relation was found between the Eurobonds maturity and the maturity of assets in place. Inverse relation was found between the firm's credit quality and the inclusion of protective covenants. Positive relation was also found between the firm's growth and the inclusion of a call option. Evidence that the Eurobonds maturity and the maturity of assets in place, as well as that the firm's growth and the inclusion of a call option are positively related, suggests that liquidity risk considerations are also important for manager's decision making. Do Rosário Correia et al. (2004) found interrelationship between the Eurobonds maturity and the inclusion of a call option, on the one hand, and between the inclusion of a convertible option and of protective covenants, on the other hand. Choice of maturity and callability structures is determined by the fundamentals, while inclusion of a convertible option and protective covenants in Eurobond contracts is affected by equity agency costs rather than debt agency costs. The influence exerted by equity agency costs "is likely to be exacerbated by the particular characteristics and relationships established between a Eurobond issuer's claimants. The fact that a relatively high proportion of Eurobond creditors are also shareholders of the issuer company (e.g. insurance companies and mutual funds) together with the premise that managerial perquisite incentives tend to be particularly important in firms with a typically large and diffuse base of equity-holders can explain the higher impact of equity rather than debt agency costs on the choice of Eurobond covenants." (Do Rosário Correia et al. 2004, 24) Finally, the authors also noticed that the inclusion of protective covenants in Eurobond contracts was motivated by liquidity risk of issues. Based on everything previously mentioned we can conclude that firms facing high default risk tend to issue Eurobonds with no protective mechanisms in order to avoid excessive financial distress or inefficient liquidation.

When the borrower decides to obtain additional funds through the issuance of Eurobonds, he chooses an investment bank that will assume the role of the lead manager (arranger or bookrunner) of the underwriting syndicate. The lead manager is chosen through a competitive tender to sell the issue. Underwriters from the country of Eurobond's denomination currency are more likely to have competitive advantage based on greater expertise and placement capacity when competing to underwrite the issue, in comparison to underwriters outside the country of Eurobond's denomination currency. It is likely that there will be significant difference between underwriting fees charged for executed services by "local" and non-"local" underwriters. "The introduction of the Euro in 1999 reduced the level of competitive advantage enjoyed by European underwriters by (i) amalgamating the investor base for Euro denominated Eurobonds and (ii) increasing the entry of non-European underwriters into the Eurozone currency segments of the Eurobond market" (Kollo 2005, 12).

The lead manager acts as an agent of both the client and the other syndicate members. It negotiates Eurobond issuance conditions with the borrower. Furthermore, it prepares a "term-sheet" or "information memorandum" about the issue that is circulated to potential syndicate participants and that is used by them for making a decision whether to participate in underwriting syndicate. It also prepares, together with the client, the documentation necessary for Eurobond issuance. When borrower and underwriters through the lead manager agree to issue the Eurobonds, and borrower and the lead manager register issuance, the lead manager draws up the distribution agreement. The lead manager collects underwriting fees which it shares with other syndicate members. It handles the

clearing arrangements related to the collection and distribution of the periodic interest payments, as well as to principal redemption.

The lead manager can invite the co-managers to form a managing group that will assist him in negotiating with the borrower in terms of lending, getting to know market opportunities and managing the issuance. In the Eurobond market underwriting syndicate structure is usually “flat” and consists of one lead manager and several “regular” members. Occasionally, in the underwriting syndicate there are two or three co-managers for issues that are particularly large or complex and also several “regular” members. Any bank may operate in some underwriting syndicates as a lead manager and in others as a “regular” member.

Underwriting syndicate will place bonds in the market. It is a group of investment banks, merchant banks and commercial banks that are specialized in doing business at certain stages of public issuance. Subset of the banks in the underwriting syndicate function as underwriters for the issue. Issue underwriters use their own capital to buy the issue from the borrower (or issuer) at a discount compared to the issue price. Discount or underwriting spread ranges from 2 to 2.5 percent. For the sake of comparison, we emphasise that the average spread in the domestic bond issues is 1 percent. The function of issue underwriters in the Eurobond market is performed by international financial institutions. Underwriters as members of underwriting syndicate purchase the issue according to a sharing formula at the underwritten (guaranteed) price agreed upon in the syndication agreement. The lead manager usually underwrites a significant amount of the issue. Other members of the underwriting syndicate underwrite the residual amount of the issue. The underwriters typically hold only limited amounts of the Eurobonds that they are acquired. They resell Eurobonds either to previously registered customers who ordered a pre-determined number of Eurobonds or to the market at a potentially different price. Mostly, they resell to smaller banks and many non-bank investors, such as pension funds, insurance companies, mutual funds, corporations and wealthy individuals. The problem that can arise during the distribution of issue is that some underwriters do not execute a promise regarding the purchase of Eurobonds. Then, the managing group is forced to redistribute unsold Eurobonds to other underwriters or sell them directly to investors. This increases distribution costs. In order to avoid such problems, most of the issue is distributed to those underwriters who consciously fulfilled their obligations in the past and less part of issue to those ones who did not to that. Most underwriters, together with other banks, make up a selling group, i.e. a group that sells Eurobonds to investors.

Underwriting syndicate members receive a fee and a positive spread between the offering and the guaranteed prices. The spread varies with the issue size, the maturity of the issue, the default risk of the issue, the reputation of the lead underwriter and other characteristics of the issue. Underwriting fees are received by underwriting syndicate members in exchange for the effort associated with selling the Eurobonds and for taking underwriting risk. The underwriting syndicate members participate in the distribution of the underwriting fees depending on the number and type of function they perform. The lead manager gets a full fee and the bank that is only a member of the selling group gets a smaller piece of the “cake”.

The determinants of total issuance costs and of three issuance cost components: underwriter fee, underwriter spread (the difference between the offering price and the guaranteed price), and underpricing (the difference between the market price and the offering price), in the international bond market were researched by Melnik and Nissim (2003). For the research they used a sample of 255 straight dollar denominated bond issues that were issued by sovereign governments (12%), international agencies such as The World Bank (3%), and private corporations (85%) in period from September 13, 1996 till October 3, 1997. According to their results, during the observed period, the issuance costs in the Eurobond market were only about 0.37 percent of the market price and were determined primarily by the bonds' maturity and credit risk. The issue size and underwriter reputation were negatively related to the underwriter fee, but they were positively related to the underwriter spread. As a result, net effect of these Eurobond characteristics on total underwriter compensation was small. The authors found no evidence of underpricing. Their interesting result was the trade-off between the issuance cost components. That result was held, among other things, after controlling for “standard” issue characteristics. In other words, the fee remained an important explanatory variable for the spread even after controlling for “standard” issue characteristics.

It is expected that establishing of the Economic and Monetary Union in Europe reduces the issuance costs of Euro-denominated Eurobonds compared to the issuance costs of bonds denominated in the legacy currencies for the several reasons. Firstly, the creation of a uniform currency has

eliminated currency risk, has improved risk-sharing opportunities and, consequently, has reduced the cost of capital. Secondly, the introduction of the Euro has reduced the degree of home bias and, consequently, has expanded investor base for European currency denominated Eurobonds. Thirdly, the integrated financial markets in Europe have attracted non-European investors to the new Euro-denominated Eurobonds. By opening European Eurobond markets for non-European investors, those markets have become more liquid and offer lower transaction costs for investors and they enable investors to better diversify their portfolios and, consequently, they have declined the effort and risk associated with selling Euro-denominated Eurobonds, compared to the effort and risk associated with selling bonds denominated in legacy currencies. Fourthly, the introduction of the Euro might reduce the reliance of Eurobond issuers on local expertise when selecting the underwriting syndicate members. Fifthly, by creating a common currency, the Economic and Monetary Union in Europe has allowed issuers to consolidate issues that otherwise would have been denominated in different currencies and, consequently, has introduced opportunities for economies of scale in Eurobond issuance. It is expected that the reduction in the cost of capital, the expansion of investor base for European currency denominated Eurobonds, the decreasing of the effort and risk associated with selling Euro-denominated Eurobonds, the reduction of reliance of Eurobond issuers on local expertise and economies of scale in Eurobond issuance cause lowering the issuance cost of Eurobonds.

The influence of introduction of the Euro on both total issuance costs and three issuance cost components: underwriter fee, underwriter spread and underpricing in the Eurobond markets was researched by Melnik and Nissim (2004 and 2006). In the studies the authors compared the issuance costs of Eurobonds denominated in the US dollar and in three of the major currencies that were replaced by the Euro: German Mark, French Franc and Dutch Guilder for the period before the introduction of the Euro. Likewise, the authors compared the issuance costs of Eurobonds denominated in the US dollar and in the Euro for the period after the introduction of the Euro. For the research they used a sample of 316 straight fixed-coupon Eurobond issues (201 issues denominated in US dollar, 68 issues denominated in German Mark, 23 issues denominated in French Franc and 24 issues denominated in Dutch Guilder) for pre-Euro period and 198 straight fixed-coupon Eurobond issues (83 US dollar-denominated bonds and 115 Euro-denominated bonds) for the Euro period. The pre-Euro period lasted from September 1996 to October 1997 and the Euro period covered the period of 10 months immediately after the completion of the Economic and Monetary Union in Europe (January–October 2002). The authors found that the introduction of the Euro significantly reduced the issuance costs of Euro-denominated Eurobonds compared to the issuance costs of bonds denominated in the legacy currencies. The reduction in issuance costs was not the result of a decrease in underwriter compensation (i.e. sum of underwriter fee and underwriter spread), but it rather arose due to the elimination of underpricing. After the introduction of the Euro the underwriter compensation remained unchanged compared to the one before the introduction. Although underwriter fee substantially reduced and underwriter spread similarly increased (and the average magnitudes of the fee and spread were smaller) after the introduction of the Euro, just like before the introduction, reduction in underwriter fee was offset by increase in underwriter spread, leaving underwriter compensation unchanged.

The influence of introduction of the Euro on the underwriter fee was also found by Kollo (2005). Namely, the author researched the effect of introduction of the Euro on both the choice of an underwriter local to the currency of Eurobond denomination and the underwriter fee for legacy and Euro denominated Eurobonds. For the research he used a sample of 4,634 straight fixed-coupon Eurobonds issued by 925 nonfinancial industrial firms from 48 different nations between January 1993 and December 2003. According to his findings, the choice of an underwriter local to the currency of Eurobond denomination significantly decreased for both legacy and Euro denominated Eurobonds over the observed period. In other words, the proportion of legacy and Euro denominated Eurobonds underwritten by underwriters local to the currency of Eurobond denomination decreased from 1993 to 2003. After the introduction of the Euro underwriter fee for Euro denominated Eurobonds significantly declined. This decline in underwriter fee was resulted by increased competition between underwriters in Eurozone Eurobond market. Although the introduction of the Euro has attracted foreign, primarily US underwriters, their entry in Eurozone Eurobond market was not key reason for reducing of underwriter fee. There was no evidence that the US underwriters gained large market share through price discrimination. Instead of that, European underwriters cut fees in response to the direct competition with each other that arose as a result of the loss of competitive advantage based on greater expertise associated with Eurobond placement in the local market.

In straight Eurobond issuing process the underwriting syndicate members are exposed to a standard underwriting risk. Such risk implies that if syndicate members cannot sell the entire issue, they have to hold unsold parts of it in their own portfolios until those are sold and, possibly, to sell them at lower prices. Riskier Eurobond issues are usually underwritten by larger number of underwriters and each one receives a smaller part of issue. The end investors who hold Eurobonds in their portfolios are exposed to the credit risks associated with holding of Eurobond. The underwriting syndicate members participate in the distribution of the underwriting risk depending on their participation in underwriting of the issue.

It usually takes about 5 to 6 weeks in total from the date the borrower decides to issue Eurobonds till the receiving the net proceeds from the sale.

#### 4. COST OF CORPORATE AND SOVEREIGN FINANCING IN THE EUROBOND MARKET

Theoretically, the cost of corporate and sovereign financing in the Eurobond market is determined by a large number of factors grouped in three categories: issue characteristics (issue size, years of maturity, denomination currency, credit rating, the repeated experience of borrowing, the number of managers syndicating the issue, and gross fees), market factors (market volatility, changes in interest rates in non-Eurobond debt markets, changes in stock exchange indices, and changes in exchange rates) and macroeconomic factors (inflation, the strength of denomination currency, government effectiveness, public debt, government fiscal balance, level of international reserves, current account balance, economic growth and GDP per capita), as well as by contagion effect. Issue size, years of maturity, gross fees, market volatility, inflation, public debt, government fiscal deficit and current account deficit are positively related to the yield spread. Credit rating, the repeated experience of borrowing, the number of managers syndicating the issue, interest rates in non-Eurobond debt markets, stock market indices, the strength of denomination currency, government effectiveness, level of international reserves, economic growth and GDP per capita are negatively related to the yield spread. Spillover effects are larger if the country of the issuer is more sensitive to external shocks.

Some authors empirically tested the theoretical knowledge associated with the influence of different factors on the cost of corporate and sovereign financing in developed, developing and emerging Eurobond markets. For example, Amira (2004) examined the issue characteristics and macroeconomic factors that affected sovereign Eurobonds yield spreads at issuance over ten-year period between January 1991 and October 2000. For the research, the author used sample consisted of 534 fixed-rate, straight sovereign Eurobonds issued in the primary market, for 38 countries which had a minimum of three issues per country during the observed period. Among issue characteristics, the author examined the influence of issue size, years of maturity, credit rating, the repeated experience of borrowing, the number of managers syndicating the issue and gross fees on yield spread of sovereign Eurobonds. Among macroeconomic factors, the author examined whether and how much inflation, government fiscal balance, current account balance, and GDP per capita affected yield spread of sovereign Eurobonds. He found that issue size, years of maturity, credit rating, the number of managers syndicating the issue and gross fees were significant factors in explaining yield spread of sovereign Eurobonds. In addition, he discovered that the influence of those factors was in accordance with the theoretical attitudes. As it was also revealed, the repeated experience of borrowing was not a significant factor that explains yield spread of sovereign Eurobonds. According to the findings, yield spreads were partially explained by the observed macroeconomic factors. Even after controlling for the credit rating, the author confirmed the theoretical attitudes about the influence of the most factors. Only issue size effect was partially confirmed. Namely, issue size was negatively related to the yield spread in the case of high-quality Eurobonds and positively related to the yield spread in the case of low-quality Eurobonds.

Gevorgyan and Kvangraven (2016) investigated the determinants of borrowing costs for nine Sub-Saharan African countries (Republic of Congo, Cote d'Ivoire, Gabon, Ghana, Namibia, Nigeria, Rwanda, Senegal and Zambia), measured by the sovereign Eurobond yields. The research covered the period between December 2007 and February 2014. They identified several market and macroeconomic factors that had influence on the sovereign Eurobond yields. Market factors are global market volatility and changes in exchange rates. Macroeconomic factors were global liquidity generated by monetary policy of other, advanced economies, commodity prices and level of

international reserves. The results showed that sovereign Eurobond yields were significantly affected by global market volatility, commodity prices and global liquidity, i.e. by factors that were outside the control of observed countries. The yields were also affected by level of international reserves and changes in exchange rates. The influence of identified determinants of borrowing costs was in accordance with the theoretical attitudes.

The main factors affecting corporate Eurobonds spreads in the primary market in developed markets were investigated by Gabbi and Sironi (2002). The authors empirically analysed the data on internationally issued Eurobonds denominated in different currencies for nearly 600 major corporations from 15 economically developed countries over the eleven-year period between 1991 and 2001. According to the findings, the most important factor that determined the spreads during the observed period was credit rating of corporate Eurobonds. Credit rating of corporate Eurobonds also explained a significant portion of cross-sectional variability of corporate Eurobonds spreads in the primary market. Besides the credit rating, some other issue characteristics, such as Eurobond annual coupon and if it is a registered or a bearer bond, were also relevant factors affecting cross-sectional variability of corporate Eurobonds spreads in the primary market. The number of managers syndicating the issue, the amount of fees charged to the issuer, the issuance technique (private placement versus public issue), Eurobond pricing (fixed-pricing versus open-pricing), the presence of specific clauses in debt contract such as negative pledge, cross-default and force-majeure, and the expected secondary market liquidity were relatively poor in explaining cross-sectional variability of corporate Eurobonds spreads in the primary market in the observed developed markets.

Batten and Hogan (2003), and together with other authors (2002 and 2005), researched the influence of years of maturity and credit quality on the level and volatility of credit spreads, as well as behaviour of actual and relative credit spreads of corporate (nongovernment) Eurobonds denominated in Australian dollar. Batten, Ellis and Hogan (2002) researched the influence of years of maturity and credit quality on the level and volatility of credit spreads of corporate (nongovernment) Eurobonds denominated in Australian dollar, which were rated AAA, AA and A and had 2, 5, 7 and 10 years to maturity. Batten, Hogan and In (2002) researched the behaviour of credit spreads between high quality, AAA rated corporate Eurobonds denominated in Australian dollar, with maturities of 2, 5, 7 and 10 years, and Australian government bonds with equivalent maturity. Batten and Hogan (2003) checked whether the behaviour of credit spreads between corporate Eurobonds denominated in Australian dollar, which were rated AAA, AA and A and had 2, 5, 7 and 10 years to maturity, and Australian government bonds with equivalent maturity during the whole observed period was the same as during the three equal subperiods. Batten, Hogan and Jacoby (2005) compared the behaviour of actual and of relative credit spreads between corporate Eurobonds denominated in Australian dollar, which were rated AAA, AA and A and had 2, 5, 7 and 10 years to maturity, and Australian government bonds with equivalent maturity during the observed period. For all four researches, the authors used the data on straight Eurobonds. For simplicity, the authors excluded from dataset the data on Eurobonds with embedded options such as callable, putable or convertible Eurobonds. The research covered the period from January 1995 to August 1998. Only in the third mentioned research the observed period was divided into three subperiods: January 1995 to March 1996, March 1996 to June 1997 and June 1997 to August 1998.

Batten, Ellis and Hogan (2002) found that yield curve was positively sloped over the observed period. It means that yields on the Australian Eurobonds of equivalent credit quality and number of years to maturity were positively related. They also found that credit risk premia contained in yields on the Australian Eurobonds of equivalent maturity and credit quality were negatively related. Those findings are in accordance with the theoretical attitudes. Volatility of credit spreads of the Australian Eurobonds differed depending on used measure of volatility. So, if volatility of credit spreads is measured by the coefficient of variation, it decreased as maturity increased and credit quality decreased. However, if volatility of credit spreads is measured by the standard deviation, it decreased as maturity and credit quality increased.

As Batten, Hogan and In (2002) found, changes of Australian high quality Eurobond spreads between maturities were not constant. The credit spreads varied asymmetrically. They increased with maturity but they did so at a declining rate. Volatility of the credit spreads in Australian Eurobond market was asymmetric because negative signals in one Eurobond market increased volatility in another Eurobond market more than positive signals. Credit spreads in Australian Eurobond market reacted not only to conditions in their own market, but also to conditions in the other markets, for example, the other bond or stock markets, especially when the market signals were adverse. Changes

in Australian yield spreads were negatively related to both changes in Australian Government bond yields, which represent changes of conditions in the government bond market and changes in the All Ordinaries Index, which represent changes of conditions in the stock market. Those relationships between changes in Australian yield spreads, on the one hand, and changes in Australian Government bond yields and the All Ordinaries Index, on the other hand, were also confirmed by Batten and Hogan (2003). However, the importance of changes in Australian Government bond yields was higher than importance of changes in the All Ordinaries Index in explaining changes in Australian yield spreads during the sample period. The influence of those two factors was time varying, i.e. their explanatory power changed with the subperiods investigated and, on occasion, the factors offset one another so their net effect generated the changes in spreads. The offsetting appeared when one factor increased and another one decreased at the same time.

Batten, Hogan and Jacoby (2005) found the same relationships between both Australian yield spreads' level and volatility, on the one hand, and credit quality and years of maturity, on the other hand, as it was found in two previously mentioned studies. Once again, they confirmed that changes in actual Australian yield spreads were negatively related to changes in Australian Government bond yields and changes in the All Ordinaries Index. Then, they found that changes in relative Australian yield spreads were negatively related to changes in Australian Government bond yields and changes in the All Ordinaries Index. However, negative relationship between changes in relative Australian yield spreads and changes in Australian Government bond yields was estimated to be stronger than negative relationship between changes in actual Australian yield spreads and changes in Australian Government bond yields. Negative relationship between changes in actual and relative Australian yield spreads and changes in the All Ordinaries Index was estimated to be statistically mostly insignificant.

The structure of credit risk premiums across different currencies for Eurobonds with the same credit rating was empirically investigated by Murphy (2003). For the research, the author used a sample consisted of 238 Eurobonds denominated in the US dollar (with an average credit rating of Aa3), 171 Eurobonds denominated in French franc (with an average credit rating of Aa1) and 134 Eurobonds denominated in British pound (with an average credit rating of Aa3) from 220 different issuing organizations. According to his finding, credit risk premiums on Eurobonds with the same credit rating varied significantly across currencies. Even Eurobonds from the same issuer denominated in different currencies had different credit risk premiums, although they had the same default risk. That was true for a large number of issuers. That finding can be explained by market segmentation. When the market is segmented, "heterogeneous expectations of default risk can exist across companies, whereby investors in one country systematically believe the default risk for one issuing organization is higher than investors in another country at the same time the reverse is true for another issuer" (Lee 1999, according to: Murphy 2003, 867).

The reaction of the credit spreads in the Eurobond market to conditions in other markets, i.e. in the non-Eurobond debt markets, in the stock market and in the foreign exchange market, was researched by Thuraishamy, Gannon and Batten (2010). The research was carried out on the sample consisted of credit spreads of 18 sovereign Eurobonds issued by Brazil, Chile, Colombia, Mexico and Venezuela, denominated in the US dollar, with maturity longer than 1 year, with adequate liquidity and without call provision. The research covered the period from February 2000 to January 2006 and 1483 observations. In order to determine the credit spread for each of the Latin American bonds, the authors used interest rate on risk free US bonds with the nearest maturity. Changes in the non-Eurobond debt markets were approximated by the Bloomberg's change in the daily series of the US 10-year Benchmark Treasury rates. Changes in the stock market were approximated by the changes of returns on the stock market indices of observed countries. Changes in the foreign exchange market were approximated by the daily changes of exchange rates for observed countries' currency. Like Batten, Hogan and In (2002), Batten and Hogan (2003) and Batten, Hogan and Jacoby (2005), in this study the authors found that changes in credit spreads in the Eurobond market were negatively related to both changes of interest rates in the non-Eurobond debt markets and changes of stock market indices. Besides that, they found that changes in credit spreads in the Eurobond market were positively related to changes of exchange rates for currency of the observed countries. Those findings are in accordance with the theoretical attitudes.

In the study of Presbitero et al. (2016), mentioned earlier in this text, as well as in the study by Presbitero et al. (2015), the authors confirmed the theoretical attitudes about the influence of market volatility, government effectiveness, public debt, government fiscal balance, level of international reserves, current account balance and economic growth on spreads of sovereign Eurobonds. Namely,

they found that spreads of sovereign Eurobonds were lower for countries with strong external position (measured by the current account balance and level of international reserves), higher government effectiveness, lower public debt, stronger budget balance position, strong economic growth and lower global market volatility, than for countries with opposite macroeconomic and market indicators.

The research by Senga et al. (2018) was extension to the research by Gevorkyan and Kvangraven (2016). Gevorkyan and Kvangraven “attempted to explain the variation in the secondary market yields of a larger set of SSA Eurobonds. With monthly data for nine countries (Republic of Congo, Côte d’Ivoire, Gabon, Ghana, Namibia, Nigeria, Rwanda, Senegal and Zambia) over December 2007 – February 2014, the authors found that yields in SSA were driven by commodity prices, global financial market uncertainty and US interest rates.” (Senga et al. 2018, 50). In relation to the research by Gevorkyan and Kvangraven, Senga et al. extended their research by increasing the number of observed countries to 14 (Republic of Congo was excluded and Angola, Cameroon, Ethiopia, Kenya, Mozambique and Tanzania were included in the research), by prolonging the observed period to June 2017 and by including a broad set of country-level variables, such as international reserves, public debt, GDP growth and inflation, in empirical models. Where it was possible, they also examined the influence of some issue characteristics (issue size, years of maturity, the redemption schedule, and whether proceeds were used to fund infrastructure) on yields-to-maturity for 31 observed sovereign Eurobonds. According to their results, beyond global factors, country-level factors, most notably inflation and GDP growth, also affected yields of Sub-Saharan African Eurobonds. They identified large heterogeneity in the short-term influence of global and country-level factors across the observed countries. Only global commodity prices were found to have a significant short-term association with yields across the board. Issue characteristics were not statistically significant once global and country-level factors were taken into account.

Besides issue characteristics and market and macroeconomic factors, yields of Eurobonds are affected by contagion. The influence of contagion on Eurobond yields will be relevant when the assets have in common the same market category background (developing markets, emerging markets, frontier markets etc.), when issuers of Eurobonds are faced with similar political and economic challenges in most cases and when there is the time in which they shared the history of cases of poor economic performance and debt management. The geographic, economic and political proximities of issuers and issues raise “the possibility of investors adjusting their expectations about the whole class of these assets based on unanticipated moves in the performance of one of these assets. This is for instance more likely in the case of the asset’s negative performance regardless of the probability of the triggering event to spread across the whole group.” (Senga and Cassimon 2018, 3)

Spillover effect among yields of selected 12 Sub-Saharan African sovereign and sovereign-guaranteed Eurobonds for the period from January 2015 to June 2017 were investigated by Senga and Cassimon (2018). The authors found that, on average, 66.37% of the forecast error variance in yields of all the 12 observed Eurobonds could be explained by spillovers. Angola, followed by Ghana and Zambia were dominant transmitters of spillover effect among yields of Sub-Saharan African Eurobonds. Namibia was the dominant receiver of spillover effect among yields of Sub-Saharan African Eurobonds, followed by Tanzania and Rwanda. Generally, “Eurobonds from countries with weak fundamentals and less resilient economies transmit more to and receive less from their peers, but this relationship is not linear.” (Senga and Cassimon 2018, 25) Spillovers effects were larger in moments of economic distress caused either by major economic events or by news announcements.

## **5. THE EFFECTS OF CORPORATE AND SOVEREIGN FINANCING IN THE EUROBOND MARKET**

Key potential benefits of corporate and sovereign financing in the Eurobond market are associated with diversified base of creditors. Namely, Eurobonds are marked by a geographically much more diffused and diverse set of creditors compared to syndicated bank loans. That enables the borrowers to obtain a larger sum of money by borrowing in the Eurobond market than by borrowing through the syndicated bank loans.

Except benefits, Eurobond holds a number of risks for issuers. First of all, denominating the Eurobonds in the foreign exchange exposes their issuers to exchange rate risk. Eurobond issuer will be exposed to exchange rate risk if he has mismatches in currency structure of his investment and financing. Thus, if exposed investment is larger than exposed financing, depreciation of the

denomination currency will cause loss and appreciation of the denomination currency will cause profit for Eurobond issuer. On the contrary, if exposed financing is larger than exposed investment, depreciation of the denomination currency will cause profit and appreciation of the denomination currency will cause loss for Eurobond issuer. Today, Eurobond issuers can apply a large number of instruments and techniques in order to hedge their foreign exchange position. For example, hedging with financial instrument implies hedging with forwards, hedging with futures, hedging with options, hedging with swaps and hedging with money market instruments. Operational or alternative techniques are invoice currency adjusting, leading and lagging, cross-hedging and currency diversification. The availability of a large number of hedging instruments and techniques allows Eurobond issuers to successfully manage foreign exchange risk.

The second risk to which the Eurobond issuer is exposed is repayment risk. Eurobonds hold greater repayment risk than amortizing loans because the required principal repayment is concentrated on maturity date. Accordingly, as Halwampa and Nalishabo (2015) wrote, “the country may experience difficulty in repaying or refinancing the face value at maturity if the money is not spent in activities with high economic returns and if there are adverse changes in its exchange rate or international market conditions”. This also refers to corporate Eurobond issuers. Eurobond issuers can successfully manage repayment risk by matching cash inflow and cash outflow, by directing funds to profitable economic activities and by anticipating the adverse changes in exchange rate for Eurobond denomination currency, as well as adverse international market conditions.

Excessive borrowing by issuing Eurobonds or any other debt instrument can negatively affect economic growth of issuer. High debt causes economic slowdown because resources meant for investment are directed to debt servicing. A significant negative relationship between economic growth and debt servicing was found in the study of Zulu (2017). In the study, the author examined the relationship between external debt and economic growth in Zambia during the period from 1981 to 2014. Economic growth was approximated by real gross domestic product. Therefore, real gross domestic product was dependent variable in the regression model. External debt and total debt service payment were independent variables in the model. According to the findings, as external debt and total debt service payment increased, economic growth deteriorated. However, those relationships were inelastic. Namely, a unit change of external debt, as well as total debt service payment brought about less than proportionate change in real gross domestic product. By more rational borrowing, Eurobond issuers can successfully minimize negative effects of high external debt on economic growth.

## 6. CONCLUSION

The Eurobond market was established when Belgian petroleum company Petrofina issued the first Eurobond. Therefore, the first Eurobond was corporate. Since then, corporate and sovereign Eurobond markets have developed. In developed countries, corporate Eurobond market is more developed than sovereign Eurobond market. Corporate Eurobond market is more developed in developed countries than in developing countries. Thus, for corporate financing the Eurobond market is more important in developed countries than in developing countries. On the other hand, in developing countries sovereign Eurobond market is more developed than corporate Eurobond market. Hence, in those countries the Eurobond market is more important for sovereign than for corporate financing.

It usually takes about 5 to 6 weeks from the date when sovereign or corporation decide to issue Eurobonds till the receiving the net proceeds from the sale. During that period, borrower contracts terms and conditions of issuing, chooses a lead manager of the underwriting syndicate who will establish the syndicate and distributes Eurobonds in the primary market through underwriting syndicate. Corporate and sovereign financing in the Eurobond market is not free of charge. Theoretically, the cost of corporate and sovereign financing in the Eurobond market is determined by a large number of factors grouped in three categories: issue characteristics, market factors and macroeconomic factors, as well as by contagion effect. Some authors empirically tested the theoretical knowledge associated with the influence of different factors on the cost of corporate and sovereign financing in developed, developing and emerging Eurobond markets. Most of those theoretical attitudes were empirically confirmed. Thus, it was empirically confirmed that issue size, years of maturity, gross fees, market volatility, inflation, public debt, government fiscal deficit and current account deficit are positively related to the yield spread. Apart from that, it was empirically confirmed

that credit rating, the number of managers syndicating the issue, interest rates in non-Eurobond debt markets, stock market indices, the strength of denomination currency, government effectiveness, level of international reserves, economic growth and GDP per capita are negatively related to the yield spread. Only the repeated experience of borrowing was found to have no significant influence on yield spread of sovereign Eurobonds, although those variables are, theoretically, negatively related. Spillover effect among Eurobond yields is a relevant explanatory variable in determining the cost of corporate and sovereign financing in the Eurobond market in conditions of the geographic, economic and political proximities of issuers and issues. Spillover effects are larger if the country of issuer is more sensitive to external shocks.

Corporate and sovereign financing in the Eurobond market brings benefits and various risks for issuers. Benefits of corporate and sovereign financing in the Eurobond market are associated to diversified base of creditors. Risks associated with corporate and sovereign financing in the Eurobond market are foreign exchange risk, repayment risk and risk of issuer's economic slowdown. No doubt, benefits are enormous. Risks can be successfully managed by applying a large number of instruments and techniques in hedging activities, by matching cash inflow and cash outflow, by directing funds to profitable economic activities, by anticipating the adverse changes in exchange rate for Eurobond denomination currency, as well as adverse international market conditions, and by more rational borrowing. Bearing in mind the above mentioned, future research could be aimed at discovery of the possibilities of further affirmation of the corporate financing in the Eurobond market in developing and emerging market countries. In the future, researchers could also investigate other issues key for sovereign and corporate financing in the Eurobond market, for example, the possibilities for extending and strengthening the secondary Eurobond market in developing and emerging market countries and, consequently, decreasing the cost of sovereign and corporate financing, the possibilities for increasing the investor base in the Eurobond market in developing and emerging market countries and innovation in the Eurobond market.

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