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BOND MARKET ANALYSIS: THE MAIN CONSTRAINTS IN THE RESEARCH OF 21ST CENTURY

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Abstract. Searching for alternative source of bank financing, the view on capital market is taken. Recent research on capital market issues are arranged into four dimensions: theory and assumptions of efficient capital market, government's role in it, other distortions and global interrelatedness. Main investigations are decentralized and visualized in "theoretical eight" model. Conclusions made on the diversity of interpretation of market efficiency, strongly expressed demand of information symmetry, soft actions of governments and the value of foreign performance in domestic markets. Furthermore, new approach to the classification of countries by their maturity in capital market is argued. The state of art of 2009-2012 of bond market and government debt is briefly described.

Keywords: bond, capital market, development, country classificatory.

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JEL classification: G14, G15, G18, H63

1. Introduction

Making a brief surveillance of financial market, capital market and its sub-market – bond market – are identified as key areas, arguing by the most attractive risk free or least risky investments during economic shocks, serving for financial resources instead of banking, growing demand for the government debt.

Recent studies on the issues of capital market are mainly concentrated on two major problems: 1) equivalent to an efficient capital market theory; 2) development of capital markets. Besides spillovers and market distortion as information asymmetry, governmental interactions in the way of regulations are being analyzed. s ome studies have

sought to quantify the impacts on capital and especially bond markets, but the literature is still relatively sparse.

Therefore **the purpose** of this paper is to summarize issues on which 21st century research on capital and its sub-sector – bond market - is based and markup the direction of further investigations needed.

The paper contains of five sections. The first section gives smooth introduction into a paper. Section No 2 is briefly summarizing most research dimensions, such as theory and assumptions of efficient capital market, government's role in it, other distortions and global interrelatedness. Section No 3 provides new approach to the classification of countries by their maturity in capital market. New classification is argued and visualized. Section 4 contributes to description of state of art of current capital market, country gross debt situation and their discrepancies. Conclusions (Section No 5) are made.

2. 21th century capital market research evolution

Mostly analyzing the scientific literature on capital market issues the effective market theory is being introduced and investigated. Assumptions of perfect capital market are being analyzed by Modigliani and Miller (1958). All financial claims are perfectly divisible, there are no transaction costs, there are no taxes, market is competitive and other conditions form the perfect capital market (Ho, Bin Lee 2004). However, marked conditions are of rare existence in financial markets.

Therefore, modern theory of finance is introducing different analytical approach to effective capital market (Leipus, Norvaiša 2003). As the main function of capital market is the distribution of assets and equity, the effective role is being formed by price model. The description of effective capital market hypothesis emphasizes the correction of prices, which reveal the right information. Therefore the effectiveness of capital market is being explained as the symmetric and right information, possessed by market players (Fama 1970). To sum up, the effective capital market model was evolving from couple perfect market conditions to information symmetry as the main constraint of price forming.

Another approach to capital market's effectiveness is macroeconomic. It is measured through its effective capital distribution (Pekarskienė, Pridotkienė 2010) by enabling growth of GDP. The authors structure the research on the conflicts and stresses of efficient market hypothesis in market of securities. The conclusions highlight the argument that the national securities market is much more influenced by the processes of globalization than just country-specific economic developments. Although the impact of globalization on all spheres of life is certain, however, there is dependence between the stock market activity and the economic situation of the country. s tudies have shown that nearly in the majority of countries there are relationship between stock price indices or other characterizing capital market indicators and gross domestic product, inflation rates (Pekarskienė, Pridotkienė 2010).

However the contradiction presented denies or diminishes the role of current capital market effectiveness by emphasizing correlations between different financial and macroeconomic variables. Continuing the analysis of objections, Stankevičienė and Gembickaja make the notion on efficient capital markets by the behavior of a rational investor. Over the past few years, from the investor's point of view, the vulnerability of the markets has led to increased uncertainty and unpredictability, as market conditions cannot always be judged with the help of standard financial measures and tools. Despite strong evidence that the stock market is highly efficient, i.e. one cannot earn abnormal profits by trading on publicly available information, there have been a number of studies documenting long-term historical anomalies in the stock market that seem to contradict the efficient market hypothesis. During the recent years, the examples of market inefficiency in the form of anomalies and the irrational behavior of the investor have been observed more frequently. The existing phenomenon can in part be attributed to the less-than-rational aspects of investor behavior and human judgment (Stankevičienė, Gembickaja 2012). To sum up, the capital market effectiveness could be interpreted through several approaches: classical hypothesis of effective markets, information that forms price model, macroeconomic access as well as behavior of its participants (e.g. investors).

Last decade's investigations on the topic of capital market could be divided into 4 dimensions: constructing and analyzing the efficient capital market model or hypothesis, evaluating the impact of such distortions as information asymmetries on capital market, comparing interconnectedness of global capital markets, measuring the government's role in the capital market, arguing on its regulation and guarantee giving's, shown in Figure 1.

Figure 1 describes theoretical "eight" – dispersion of research topics. The axes show the dimensions into which all recent research works by international organs (IMF, WB, OECD, different institutes and universities) are divided. The more distant the ball with names of authors is the higher intention on the related topic it introduces. Full balls represent the dependence on both topics in vertical and horizontal axes, others belongs to one domain where the position it's taken.

All dimensions could be combined into ***life-cycle of efficient capital market*** (following the Fig. 1 anticlockwise), which could be reached by diminishing the impact of such obstacles as information asymmetries, including government role with acceptable restrictions and getting interconnected in global market.

In the relation with the first paragraph, other ***efficient capital market models and hypothesis*** are being analyzed in combination with opposite approaches such market distortions as ***information asymmetries***. Klimašauskienė and Mosčinskienė analyzing the effectiveness of capital market state that information efficiency in country specific capital market occurs on its light form (Klimašauskienė, Mosčinskienė 1998). As well as Leipus and Norvaiša, Klimašauskienė and Mosčinskienė emphasized the significance of securities price. The findings were based on information effectiveness which takes its evidence when security buyers and sellers share the same data and similar expectations reflected to market price. Rudnicki agrees that there occur some events that contradict

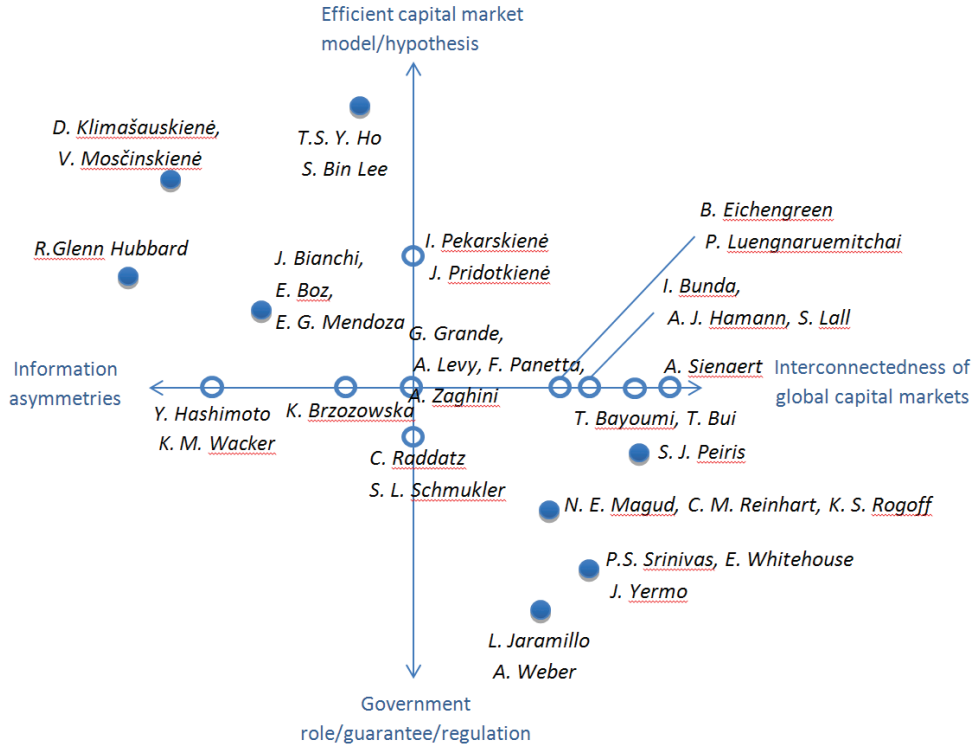

Fig. 1. 4 dimensions of last century research on bond market (s ource: created by the authors)

the efficient market hypothesis therefore they are called anomalies (Rudnicki 2012). By analyzing stock splits, the author indicates their implications on narrowing the information asymmetry between managers and shareholders as well as diminished probability of informed trading.

Introduction of the derivatives as financial innovations into capital market quantitative analysis showed that the effectiveness of macro-prudential policy in this environment depends on the government›s information set, the tightness of credit constraints and the pace at which optimism surges in the early stages of financial innovation. The policy is least effective when the government is as uninformed as private agents, credit constraints are tight, and optimism builds quickly (Bianchi *et al.* 2012). These arguments state the opinion of transition of effectiveness through related markets as well as their constraints. While being well informed government forms prudent policy and macroeconomic indicators rise, the capital market is functioning effectively. Conclusion is being approved by Yuko Hashimoto and Konstantin M. Wacker, who investigate whether better information about the macroeconomic environment of an economy has a positive impact on its capital inflows, namely portfolio and foreign direct investment (Hashimoto, Wacker 2012).

Moreover the informational imperfections in credit market are described as 'micro" concern relating consequences. In this line of inquiry, problems of asymmetric information between borrowers and lenders lead to a gap between the cost of external and internal financing. This notion of costly external financing stands in contrast to the more complete-markets approach underlying conventional models of investment emphasizing expected future profitability and the user cost of capital as key determinants of investment (Hubbard 1998). While watching positive correlations between macroeconomic indicators and information symmetry (analyzed by b ianchi *et al.* 2012; Hashimoto, Wacker 2012), the main causes of imperfection are found in microeconomics (Hubbard 1998).

The information asymmetry is analyzed in venture capital dimension as well. Krystyna Brzozowska initiates that establishment of separate funds in each region's appropriate environment where the rules of venture capital investments are well known. On the other hand, venture capital funds will have difficulties in monitoring their investee companies as well as to provide suitable advisory capacity to them. It can be assumed that inexperienced management team in most early stage of ventures and the greater uncertainty (less information) connected to new technology and market will evolve some problems difficult to solve (Brzozowska 2008). Meanwhile searching for causes of information asymmetries in microeconomic factors or even behavior of market participants, here by the new factor of technology is introduced. As the market progression is formed by technology and information share is facilitated, this approach is being questioned and requires more arguments and research.

To sum up, the results of the research on capital market effectiveness and information asymmetry dimensions could be summarized as capital pricing model:

- Effective capital market hypothesis emphasizes the correction of prices, and is explained as the symmetric and right information, possessed by market players.
- Symmetric information correctly allocates the resources, regarding the main capital market function of distribution.

These could be described as highly correlated issues of the capital market theory: reaching the perfection while eliminating the imperfection of information shared in the market.

Another dimension which is being discussed, the role of government, its regulations and guarantees in the capital market. Concerning government guarantees on bank bonds they were adopted in 2008 in many advanced economies to support the banking systems. They were broadly effective in resuming bank funding and preventing a credit crunch. The guarantees, however, also caused distortions in the cost of bank borrowing (Grande *et al.* 2011). Contrarily to guaranties, governmental restrictions are being valued. Claudio Raddatz and s ergio L. s chmukler studied the relation between institutional investors and capital market development by analyzing asset-level portfolio allocations of Chilean pension funds between 1995 and 2005. In the analysis of government restrictions, the conclusion was come to pension funds may have contributed to the

development of certain primary markets, but not a force driving the overall development of capital markets, because of asset illiquidity and manger incentives (not regulatory restrictions) (Raddatz, Schmukler 2008). Authors indicate the absence of impact of governmental restrictions on overall market development while influence on primary markets (e.g. capital) is being identified. Therefore the conclusion has come of action based rebound on action targeted market. Though Meng and Pfau find a significant impact of pension funds on capital market development in the overall sample, this result is driven by countries with "high" financial development (e.g. United States, United Kingdom, Japan, Germany, etc). For countries with „low" financial development (Argentina, Peru, Poland, Hungary, etc.), pension funds do not show a significant impact. Countries with different levels of financial development have different financial market climates that can directly impact the role and performance of pension funds. Differences include pension fund investment regulations, market efficiency, transparency, the legal framework, market activities, and macroeconomic and financial conditions (Meng, Pfau 2010).

Several working papers are analyzing the government's role and interconnection issues in combined way of research. N. E. Magud, C. M. Reinhart, K. S. Rogoff have constructed two indices of capital controls: Capital Controls Effectiveness Index (CCE Index), and Weighted Capital Control Effectiveness Index (WCCE Index). It was found that there should exist country-specific characteristics for capital controls to be effective. Capital controls on inflows seem to make monetary policy more independent, alter the composition of capital flows, and reduce real exchange rate pressures (although the evidence there is more controversial) (Magud *et al.* 2011). It follows that governmental regulations re-charge the structure of capital flows without a movement trend.

Meanwhile P. S. Srinivas, E. Whitehouse and J. Yermo compare the rules in the new systems of Latin America and Eastern Europe with richer OECD countries on regulating the pension fund industry's structure. It was revealed that taxonomy of investment risks in pension funds is a light limit on domestic investments (on equities and bonds) (s rinivas *et al.* 2000). It comes to conclusion of regulations limiting domestic capital flows. Other expression of government actions is represented by L. Jaramillo and A. Weber. They have come to conclusion that fiscal variables do not seem to be a significant determinant of domestic bond yields in emerging economies. However, when market participants are on edge, they pay greater attention to country-specific fiscal fundamentals, revealing greater alertness about default risk (Jaramillo, Weber 2012). The interpretation is made about the governmental role which is assessed more ponderable to domestic financial instruments than on capital market development in the overall sample. The regulations seem to be absent of significance in capital market.

On the other hand S. J. Peiris assume foreign participation in the domestic government bond market. Author states that greater foreign participation tends to significantly reduce long-term government yields. Moreover, greater foreign participation does not necessarily result in increased volatility in bond yields in emerging markets and, in fact, could even dampen volatility in some instances. However, foreign investors could act

as catalysts for the development of local bond markets, particularly by diversifying the institutional investor base and creating greater demand for local emerging markets debt securities. The author comes to conclusion that institutional investors, both domestic and foreign, have played a critical role in developing capital markets in most mature markets and in more developed emerging markets (Peiris 2010). The division of country profile in capital market could be mentioned: emerging and more advanced economies are being analyzed.

Moreover, bond yields and other securities' prices are a common goal or even an issue for investigators of governmental regulations impact as well as those who analysis other market distortions and spillovers in capital market. Alex Sienaert finds more disadvantages of foreign invasion by examining the causes, nature and impact of rising participation of foreign investor in local currency bond markets of developing country. Much of the volatility in returns occurred through the currency channel (not bond prices in local currency), insulating dollar-hedged and local currency-benchmarked investors. An important source of selling pressure on emerging markets local currency bond markets was forced by liquidations of foreign investors due to the relatively low collateral value of emerging markets bonds. The growing interconnectedness of global capital markets increases the sensitivity of emerging markets asset prices, including bonds, to global factors (s ienaert 2012).

Furthermore, supervisors and regulators cannot develop the markets directly; only borrowers and lenders can do this. This distinction is not always appreciated, and governments at times go too far in their efforts to facilitate financial market development. This is apparent in the most common strategy for government-led financial market development, which is the "Build It and They Will Come" approach. In this approach, the government introduces not only the legal infrastructure but also particular instruments and exchange mechanisms, in the expectation that private players will rush into the ready-made markets. The problem in many cases is that few agents actually come to play and often there is limited activity in these new markets (Chami *et al.* 2009).

Further investigations are made on global interventions of capital markets and the local influences of it. Tamim Bayoumi's and Trung Bui's identification through hetroscedacity to estimate spillovers across U.S., Euro area, Japanese, and UK government bond and equity markets in a vector autoregression. The results suggest that U.S. financial shocks reverberate around the world much more strongly than shocks from other regions, including the Euro area, while inward spillovers to the U.S. from elsewhere are minimal. There is also evidence of two-way spillovers between the UK and Euro area financial markets and spillovers from Europe to Japan (Bayoumi, Bui 2012). Other researchers analyze financial integration or interrelatedness, asking how Asia compares with Europe and Latin America (Eichengreen, Luengnaruemitchai 2006). Spillovers all across the world are identified and the impact to local capital markets is agreed. Domestic and external factors on performance of capital market are analyzed by Irina Bunda, A. Javier Hamann, and Subir Lall. The co-movement in emerging market bond

returns and disentangles are of influence of external and domestic factors. The conceptual framework, set in the context of asset allocation, allows describe the channels through which shocks originating in a particular emerging or mature market are transmitted across countries and markets (b unda *et al.* 2010). Common shocks or to "pure" cross-country contagion of spillovers is accepted.

Summarizing the consequences of governmental actions (guarantees and regulations) and global interconnectedness separately and in together, the conclusions could be drawn:

- An ***advantage of government restriction*** is the development of certain primary markets, but not a force driving the overall development of capital markets.
- The ***drawback of governmental regulations*** is re-charged capital structure without a movement trend, limiting domestic capital flows.
- ***Foreign presence*** in local capital market results proses (increased volatility, catalysts for the development, greater demand) and coins (increased sensitivity of asset prices) depending on maturity of capital market.
- ***Financial shocks strongly reverberate around the world***.

3. Developing capital market: 4 stages

According to issues (market distortions, effective market, government regulation) and regions (OECD countries, Latin America, Europe, Asia) examined in section 2 the stages of capital market development could be distinguished. All researches agreeing on imperfection and the sequence of development of capital market, countries are divided into emerging and matured.

The authors of this paper propose the following division into 4 groups with the arguments below:

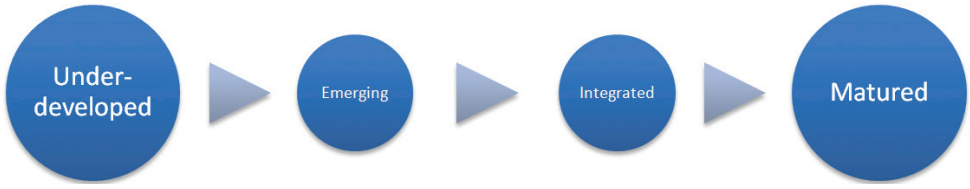

Fig. 2. 4 stages of capital market development (Source: created by authors)

First argumentation comes from the agreement on opinion that country's economic conditions are determined by the behavior of financial markets. For example, it is said, when prices of shares are starting to fall, one can expect the economic stagnation. And vice versa, the growing trend of share price alerts the potential economic

growth (Leipus, Norvaiša 2003). The health of financial intermediaries and markets is crucially dependent on the health of the private and public sectors. There are potentially many types of infrastructure that governments need to build: the legal system, including bankruptcy procedures; a modern payment system for clearing and settling securities transactions, retail payments, and large-value payments; instruments, in the sense of legal definition and recognition; and markets, including rules and possibly physical infrastructure for the operation of primary and secondary markets (Chami *et al.* 2009). Questioning whether the financial markets directly impact the economy, very little evidence corroborates this view. There are much more signs pointing to the fact that financial markets simply reflect firms expectations on the behavior of the economy in the near future. These "mirrors" is generally regarded as different countries' financial market indices: Dow Jones Industrial Average (DJIA), Standard and Poor's (S&P), OMX, etc (Leipus, Norvaiša 2003).

Most financial institutions (IMF, WB, UNDP) casual inspection suggests that currently the classification systems which are quite similar in terms of designating countries' economies as being either 'developed' or 'developing'. Given the large and diverse group of developing countries, all three organizations have found it useful to identify subgroups among developing countries (Nielsen 2011). Therefore remaining matured capital market range, the emerging one could be divided into three subsections: underdevelop, emerging, integrated.

In the global capital market statistics still there are countries lacking attention on global research and data, which capital market share (% of GDP) is too miserable to be watched. There are many markets in which borrowers and lenders are present, the instruments used are agreeable to both parties, and yet the market has little activity beyond primary issuance and redemption. For example, many of the nascent government bond markets around the world are simple "buy and hold" markets. While such markets help achieve the fiscal policy goals of the government, they do not lead to financial market deepening and its accompanying benefits. This is because there is no trading in the instruments, and in particular, no agents making a secondary market in the securities (Chami *et al.* 2009). In some EU countries, especially new members, capital market has not yet been developed, but it is still growing together with the increase of the level of innovation and entrepreneurial activities (Brzozowska 2008). Therefore a level before the 'emerging' classification should be drawn in order to provide comprehensive analysis and ensure the sustainable development of capital market, which could be reasonable as fine segmentation specializes in targeting measures to successful achievement of the goal.

According to sequencing approach and logic, the country should have intermediate period from performing in emerging market rating to becoming a matured one. Financial market development is seen as both the wider use of existing financial instruments and the process of creating and adopting new financial contracts for intermediating funds and managing risk. A key aspect is that development occurs when market players are

able to reach mutually acceptable compromises regarding the terms of financial transactions. Agents strike grand compromises, such as those between maturity and collateral, and between seniority and control, as well as myriad smaller ones (Chami *et al.* 2009).

Criteria for reaching, valuing the acceptance of classification level could be defined as follows: the requirements for capital market development, and compare and contrast experiences across both mature and emerging, under-developed and integrated markets - benchmarking, corporate governance and disclosure, credit risk pricing, the availability of reliable trading systems, and the development of hedging instruments. These are fundamental for improving the breadth and depth of corporate debt markets (Luengnaruemitchai, Ong 2005). Moreover, as it was mentioned before, regulation and supervision play a supplementary role in market development. An important job of the regulator is to establish a supportive infrastructure for contract enforcement and dispute resolution. This infrastructure has many concrete as well as abstract features, but collectively these aspects have come to be known as the "rule of law" (Chami *et al.* 2009). Furthermore, the presence of derivatives can quicken market development in the underlying, and if the infrastructure and regulatory framework is available, their introduction need not be delayed. The policy challenge is to support the creation of an intersection between the set of desired instruments and the set of feasible instruments, and to enlarge it over time. Often, this intersection must be created by eliminating or overcoming obstacles that prevent an instrument from being introduced or used (Chami *et al.* 2009). Briefly, the view of financial market dynamics can be expressed as follows: if borrowers and lenders are willing and able to contract, and liquidity providers find conditions conducive to trading the instruments that are created, then financial markets will develop. The regulatory structure can support this process by removing obstacles that make potential borrowers, lenders, and liquidity providers unwilling or unable to play their roles, and by creating the right incentives for each agent to fulfill their end of the bargain (Chami *et al.* 2009).

Forming the sequences of the countries by their capital market development stages more intuitively, the range scale is being of the important need to be implemented for overall, coherent and integral research and data collection. The scale should contain the key variables of capital market (e.g. derivatives) and all market players (e.g. government). Rages should be specified and unified by each scale grade.

4. Bond Market Development: state of art

Bond market is taken into consideration as the development of a "risk-free" asset is a key step in financial market development. The government is often thought of as the entity with the lowest credit risk in an economy (Chami *et al.* 2009). However, for example, in Hungary, one of the earliest corporate borrowers was the local subsidiary of McDonald's Corporation, which was widely perceived to have a better credit rating than the government.

Since the mid-1990s, corporate bond markets have become an increasingly important source of financing for the private sector, especially in the emerging market countries. The authorities in these countries are becoming increasingly aware of the importance of establishing deep, liquid corporate debt markets and have placed such development high on their agenda. To date, corporate bond markets in many countries remain largely underdeveloped, with a limited supply of quality issues and inadequate market infrastructure. Even in mature market countries, such as the United States and Europe, secondary markets for corporate bonds are relatively illiquid for the majority of bond issues, in the same manner that liquidity in government securities markets is usually limited to a few benchmark issues (Schinasi, Smith 1998).

Joshua Felman *et al* analyzing the Asian bond market development have overcome with reasons for capital and its symbiosis bond market to develop that could be applied more widely (globally):

- Finance systems are extremely **bank-centric**, which meant that most of the financial risks were being concentrated in the banking system – and there is no alternate channel of intermediation that could be used if the banks once again encountered difficulty (Felman *et al.* 2011). The Baltic States, Central European countries could be specified likewise. Although there is no definitive evidence that either a market-based or bank-dominated financial system is better. However, it has been argued that a more diversified financial system would mitigate its vulnerability to systemic risk. For instance, the effects of the Asian crisis and the recession in Japan during the 1990s may well have been far more benign if the countries involved had well-functioning capital markets and correspondingly less heavy reliance on their troubled banking sectors during this period (Luengnaruemitchai, Ong 2005). Moreover, the relative unimportance of the corporate bond market in Europe was mirrored by the corresponding dominance of the banking sector. This is in direct contrast to the United States, where banks play a small role in the financing of large companies, and face strong competition from the corporate bond market even for medium-sized companies (Schinasi, Smith 1998). Roldos re-argues that banking and bond markets could be developed in tandem, by building an appropriate regulatory and institutional framework to encompass both. Although local securities markets provide an alternative source of funding to the banking sector, especially during banking crises, a sound and well-regulated banking system could be a necessary and desirable complement to the development of local securities markets (Roldos, Jorge 2004). In emerging markets, it has been noted that the Central European countries have little intermediary capacity to underwrite corporate bonds. The large, foreign-owned banks in these countries have little incentive to devote capital to such activity in the local market, while the local banks and brokerages typically lack the resources to do so. In Thailand, banks have been reluctant to underwrite bond issuances, possibly because they fear competition from the bond market. The opposite is true of banks in Hong Kong SAR, which have begun to underwrite bonds to take advantage of the attractive fees from the

process. However, the advent of several banking crises in some of these countries has led to the realization that the sources of corporate borrowing need to be diversified. That said, the corporate debt markets in many emerging market countries remain underdeveloped.

- borrowing had suffered from a **double mismatch**, since long-term domestically oriented investment projects were being funded through short-term and foreign currency borrowing (Felman *et al.* 2011).
- Countries in the region were perceived to be **excessively dependent on volatile capital inflows**, a situation that struck many observers as ironic since the region had an abundance of domestic saving (Felman *et al.* 2011).
- **The rise of foreign interest in domestic bonds has another important ramification:** growing off-shore activity. Foreign investors are increasingly obtaining exposure to emerging markets by using various "access products", such as over the counter derivatives, structured securities, or offshore special purpose vehicles (Felman *et al.* 2011).

Describing the volume of nowadays bond market the data of total debt securities of all issuers by country is taken into consideration. As one could see from the Figure 3, countries could be easily divided into classification groups described in section 3.

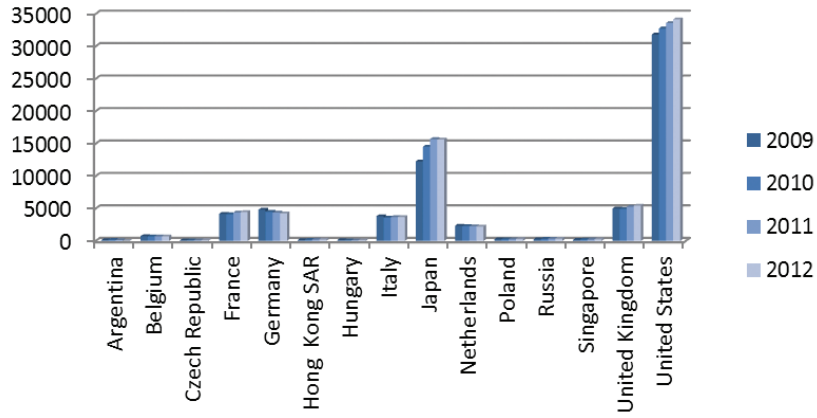

Fig. 3. Total debt securities of all issuers by country, 2009–2012 Q4, in billions US dollars (Source: The total debt securities statistics of the Bank for International Settlements (BIS), 2013)

UK, US, Japan, Italy, France and Germany belong to the matured capital markets country group, while Hungary, Argentina, Poland, Russia and others – emerging. There are no representatives for the group of under-developed capital countries as statistic data is too poor to gather. Otherwise Belgium as well as Netherlands is balancing between emerging and matured capital market countries, making it a strong argument to assign them to an integrated capital market group.

The dynamics of the period of year 2009–2012 is slightly: there is no significant gain in development as well as sharp decrease. On the other hand, some structural changes could be foreseen in Japan and USA: during the last four years the borrowing volumes did increase by average of 10 per cent, potentially caused of presence in the top rankings and favorable cost of borrowing.

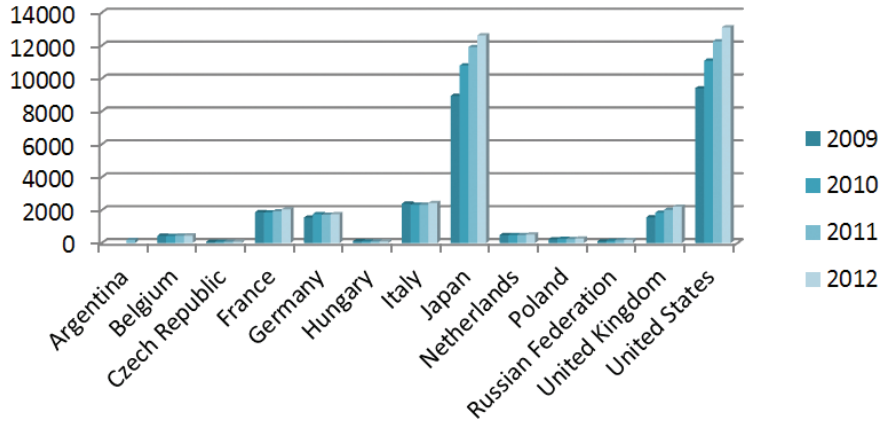

Fig. 4. Gross Central Government Debt, 2009–2012 Q4, in billions US dollars (Source: World Bank (WB) statistics on gross central government debt, 2013)

Looking for issues on causes for bond or other debt securities market extension, the gross central government debt data is taken into the consideration (Fig. 4). During the period of the year 2009–2012, the sharpest trends are seen in Japan and United States as well as in Fig. 3. The conclusion of bonds and other debt instruments being the source financing government debt is made. Furthermore, the trends in Figs 3 and 4 dynamics could be remarked. As well as France's , Germany's, Italy's, United Kingdom's debt securities stand out among the other countries in the analysis (Fig. 3), gross government debt in the mentioned countries have the same characteristics (Fig. 4). In later comparison one could note the amount differences between amounts of total debt securities and gross government debt, which could be explained by the quarterly division of the period of the analysis.

5. Conclusions

Recent research on capital market issues are arranged into four dimensions: theory and assumptions of efficient capital market, government's role in it, other distortions and global interrelatedness. Main conclusions are decentralized by topics and summarized:

Effective capital market

− The **effective market model's** interpretations' evolution, from couple perfect market conditions to information symmetry as price forming constraint, was formed.

- The capital market effectiveness could be interpreted through several approaches: classical hypothesis of effective markets, information that forms price model, macroeconomic access as well as behavior of its participants (e.g. investors).
- Highly correlated issues of the capital market theory: reaching the perfection while eliminating the imperfection of information shared in the market.
- There exists the transition of effectiveness through related markets as well as their constraints.

Information (a)symmetries

- While watching positive correlations between macroeconomic indicators and **information symmetry**, the main causes of market imperfection are found in microeconomics.
- Effective capital market hypothesis emphasizes the correction of prices, and is explained as the symmetric and right information, possessed by market players.
- Symmetric information correctly allocates the resources, regarding the main capital market function of distribution.

Government's role

- There is an absence of impact of **governmental restrictions** on overall market development while influence on primary markets (e.g. capital) is being identified. Therefore the conclusion has come of action based rebound on action targeted market.
- The view of financial market dynamics can be expressed as follows: if borrowers and lenders are willing and able to contract, and liquidity providers find conditions conducive to trading the instruments that are created, then financial markets will develop. The regulatory structure can support this process by removing obstacles that make potential borrowers, lenders, and liquidity providers unwilling or unable to play their roles, and by creating the right incentives for each agent to fulfill their end of the bargain.

Global interrelatedness

- More disadvantages of foreign invasion by examining the causes, nature and impact of rising participation of foreign investor in local currency bond markets of developing country are seen.
- U.S. financial shocks reverberate around the world much more strongly than shocks from other regions, including the Euro area, while inward spillovers to the U.S. from elsewhere are minimal.
- The co-movement in emerging market bond returns and disentangles are of influence of external and domestic factors.
- Spillovers all across the world are identified and the impact to local capital markets is agreed.

The theoretical "eight" – dispersion of research topics is visualized with the division into dimensions of all recent research works by international organs (IMF, WB, OECD, different institutes and universities).

The definition of life-cycle of efficient capital market, which could be reached by diminishing the impact of such obstacles as information asymmetries, including government role with acceptable restrictions and getting interconnected in global market, is being introduced.

New approach to the classification of countries by their maturity in capital market is proposed: under-developed, emerging, integrated, matured. An argumentation comes from the agreement on opinion that country's economic conditions are determined by the behavior of financial markets, miserable statistics, lacking attention on global research and data of some countries, sequencing approach and logic for the existence of intermediate period from performing in emerging market rating to becoming a matured one. Forming the sequences of the countries by their capital market development stages more intuitively, the range scale is being of the important need to be implemented for overall, coherent and integral research and data collection.

Describing the state of art of bond market, in 2009–2012 there is no significant gain in development as well as sharp decrease of debt securities (bond market), slightly distinguishing the trend of matured capital markets. However, the mismatch in amounts of total debt securities and gross government debt is well-seen.

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