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BUILT-IN PROBLEMS IN THE NEW EUROPEAN REGULATIONS FOR THE BULGARIAN CAPITAL MARKET

The capital market attracts many investors and public companies, therefore their protection is a major objective of the regulations system. This is a complex system, subject to continuous improvement due to market and technology developments.
New markets face the choice of adopting the modern regulations of previous markets or building their own system, adequate for their yet undeveloped and illiquid capital market. Introducing complex restrictions operating in the most developed markets, given the low administrative capacity of the supervisory authorities and insufficient capital base of issuers and financial institutions, gives rise to problems.
The complex norms are "too much of a good thing" (Bruno and Claessens (2007)) and lead to the outflow of both public companies and investment intermediaries and investors, due to over-regulation of the investment environment. This phenomenon is called "bilateral restriction of access" (North, Wallis and Weingast (2006)) and it leads to restricted access to capital of local companies and depriving investors of high-quality assets.
The liquidity of the young markets is low, however, this is one of the main attributes of the attractiveness of each capital market. Part of the new norms introduced since 2018 have significantly worsened key indicators of liquidity and environment uncertainty, so their impact on new capital markets is negative. The new Markets in Financial Instruments Directive (MiFID2) and two EU Regulations, enacted since January 2018, have deepened the problems of over-regulation and have additionally created new ones related to market liquidity as far as the young Bulgarian capital market is concerned.
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1. Introduction

The capital market provides alternatives for companies to attract new capital for their projects as well as opportunities for investors to invest their funds in a variety of financial assets with stable risk characteristics and returns. The capital market consists of an equity and bonds market, as well as of derivative instruments issued on the underlying securities. The main requirements for this type of market are to offer quality assets and to be liquid,

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which ensures its usefulness for the national economy. The quality of assets on the national capital market represents a combination of risk, including the liquidity risk, the expected profits and diversification opportunities due to the existence of many attractive investment alternatives. Market liquidity represents the ability of investors to make immediate deals at low transaction costs. The usefulness for the national economy is determined by the opportunities for companies to finance their new high-risk projects that ensure GDP growth.

The regulatory base plays an important role in the liquidity and development of the capital market. It provides market rules and ensures transparency and trust. As a member of the European Union, Bulgaria transposes European norms in its national legislation, which should integrate the Bulgarian capital market and increase its attractiveness both for issuers and investors. Despite the full harmonization that has occurred since 2007, the domestic market liquidity indicators are not improving. The present study attempts to identify some of the reasons why the modern and restrictive rules, while appropriate for the developed capital markets, are not suitable for the emerging and illiquid Bulgarian equity and debt market.

The regulatory base is not the only relative factor for the capital market development, liquidity, and quality. Modern science has established three classic approaches: The Informed Speculation Paradigm, The Inventory Paradigm and Liquidity Commonality. An alternative approach is the Institutional Path Dependence. A number of complex and fundamentally different factors, among which the regulatory framework, have an impact, therefore studying regulations is also important.

The object of this study is the new European Union capital markets regulations. The subject of the study is the expected impact of the second Markets in Financial Instruments Directive (MiFID2) as well as of Regulation 600/2014 on markets in financial instruments and Regulation 588/2017 supplementing Directive 2014/65/EU with regard to regulatory technical standards on the tick size regime for shares, depositary receipts and exchange-traded funds on the illiquid and still young Bulgarian stock market. The regulatory base concerning capital market transactions and market participants' behavior is enormous, but the directive and two regulations mentioned above have been recently introduced and create new restrictions, which is why the research is focused solely on them.

The study tries to solve several research tasks. The first is the argumentation of the role of the regulatory framework for the quality of the capital market, followed by the review of the MiFID2 and two of the new regulations. The complexity of regulations and the introduction of too high requirements for all markets, including the ones of new member states, are identified as a negative problem for Bulgarian market, as evidenced by data from the Bulgarian stock exchange.

The study is an attempt to prove the research thesis, namely that the full introduction of high European restrictions on the Bulgarian capital market is inappropriate and creates negative market effects.

The study is structured in the following order: the first part examines the essence of the legal framework and the principal effects on the Bulgarian stock market due to the

introduction of too strict regulations; the second part concerns the new MiFID2; the third and fourth parts deal with the effects of two of the new regulations – 600/2014 on markets in financial instruments and 588/2017 supplementing Directive 2014/65/EU with regard to regulatory technical standards on the tick size regime for shares, depositary receipts and exchange-traded funds. The conclusion tries to summarize the established effects and to propose changes.

The survey focuses on the Bulgarian main stock market where the most liquid issues are traded, unlike the alternative market that is available to companies with too few deals. The derivatives market in Bulgaria remains underdeveloped and is therefore not included in the study. The bond market is still a very small part of the total securities trading, and the conclusions drawn from debt transactions will not be sufficiently objective. The market statistics prove this: in 2017 the share of bond transactions is only 0.75%.

The econometric tools used include the processing of chronological series, both periodic (stock exchange) and momentary (market capitalization, percentage of government debt assets invested, share prices, number of registered issues of BSE Plc, number of stock exchange members) calculation of mean values and standard deviation. Based on the data obtained from the econometric processing, a logical analysis is performed and some conclusions are arrived at.

2. Importance of the regulations for the stock market quality

Restrictions are a very important part of the financial infrastructure. The financial system is one of the most regulated areas of the national economy, and financial institutions, public companies and investors have to respect complex norms when conducting their business. Markets and market participants operate under a serious regulatory regime which should protect both investors and their property rights through transparency requirements, prohibition of opportunistic behavior[2], and survey on the systemic risk.

The legal framework of the Bulgarian capital market has always been among the most complex ones. The first securities law is a product of the interaction of the Bulgarian authorities and some American foundations, through which the American experience was transferred to Bulgaria years before European regulators paid close attention to the rights of minority shareholders and transparency. Bulgaria's membership in the European Union requires further alignment of the regulatory regime with that of the common European financial market. Harmonization takes place in two phases – full implementation of the First MiFID since the first possible moment in November 2007 and full implementation of the second MiFID since the beginning of 2018.

Researchers define regulations as impact by non-market methods. Such methods are licensing processes, authorization regimes, and regulatory acts (public regulation), as well as the rules of the stock exchange, depository institutions, investment intermediaries and institutional investors (private regulation). In this sense, according to Popov and Sedlarski

[2] Insider trading, related party transactions or manipulation of prices or traded volumes.

(2012), regulations represent public investments in measures and state institutions to address insecurity, complexity and limited rationality, as well to ensure policy-conforming behavior. Their main function is generally to reduce transaction costs (as a result of combining the uncertainty and complexity of the environment with the limited rationality of individuals). On the stock market this is achieved through standards of transparency and non-admission of opportunistic behavior.

There are two main objectives of stock market regulation – investor protection and the formation of a quality market. Investor protection means that investors have guarantees for their property rights. High-quality markets are fair, disciplined, methodical, effective and well-managed (Frost, Gordon and Hayes, 2002). These objectives are implemented through monitoring by supervisory authorities and market institutions, licensing processes, authorization regimes, and public regulatory sanctioning. The lack of regulation or ineffective regulation leads to information constraints, monopolistic practices and transaction costs (Popov and Sedlarski (2012)), all of them representing factors for reduced market liquidity. According to Williamson (1987), the lack of regulation also signifies a high risk of opportunism, which requires a regulatory structure aimed at ensuring market confidence.

In examining the impact of regulations on stock market liquidity, the concept of regulatory failure is essential, its two forms being over-regulation and lack of regulation. The first one imposes too heavy restrictions, leading to loss of cost-effectiveness and reduces the size of the market and the number of transactions, respectively, the supply of financial services. Another aspect of over-regulation according to Coase (1937) is the increase in the number of coordinated transactions, which also increases the frequency of improper rules leading to losses. A side effect is the increase in corruption behavior.

The other form of regulatory failure is the lack of regulation, which has two aspects: lack of regulations or lack of application of the rules. The lack of supervision leads to capital outflows due to high levels of uncertainty, information asymmetry and risk. While the lack of relevant norms is known to investors and they can compensate through private collection and processing of information, the non-application of norms is usually selective and is the result of corrupt practices or incompetence. The non-application of the norms results in a deterioration of the investment environment due to the increase in uncertainty and the decrease in confidence and transparency. The non-implementation of the regulations leads to investors' expropriation[3] and corresponding deterioration of the stock market indicators, including liquidity freezing. This type of regulatory failure is "institutional" as it is a failure of the institutions in place in the performance of their functions. In the case of this failure, certain agents benefit, making profits by opportunistic behavior. The non-application or selective application of the norms is an institutional risk that cannot be diversified and therefore results in a high spread and low market liquidity for the respective stock market.

[3] The term "expropriation" is used by researchers to describe the effect of withdrawal of income of depriving shareholders of their due dividends or profits from price increases due to injury by the majority shareholders, management or other persons with access to information or opportunities for related party transactions.

Regulatory and institutional failures leads to prohibitively high transaction costs (preventing the deal) which has a detrimental effect on economic growth, and leads to market imperfections according to Sedlarski (2008). Transaction costs, which are so high that their size makes transactions meaningless, lead to freezing of the stock market and withdrawal of both investors and issuers, which is the safest way for market liquidity to dry out. Regulations should not hinder competition and investor access to transaction opportunities, and must cover cost-effectiveness tests on the provision and procurement of important information (Frost, Gordon and Hayes, 2002).

In Bulgaria, institutions choose to create a stock market that meets the highest standards of the most developed countries. Through this administrative approach, they risk introducing regulations that do not match business interests and stifle development instead of stimulating it (Moravenov, 2004). The failure of institutions in the real protection of minority shareholders is visible from the data below. The analysis (Table 1) integrates World Bank data on market liquidity, mechanisms for protection of minority shareholders and corruption index. It is evident from the Bulgaria's ranking in the introduced protection that an emerging stock market is burdened with institutions appropriate for the oldest and most developed capital markets. The USA's ranking (35th, 14th for Bulgaria) shows that the world's most liquid market is operating with a simpler regulatory framework and institutions committed to the rights of minority shareholders. The Czech Republic's place in this ranking (the most liquid emerging stock market) is 57th, just before Slovakia, coming last in the ranking.

Table 1 provides information on the average liquidity levels of the different markets (ranking on the basis of an arithmetic average of the performance of the three indicators) as well as the location of the respective economy in the World Bank rankings of the available institutional framework for the protection of the rights of the minority shareholders and the level of non-corruption. The most liquid stock markets are the American, British and German, which is a completely logical result, since they are the oldest, belong to established democracies and market economies, the first two being market-based. The emerging stock market ranking puts the Czech stock market ahead of Romania, Croatia, Bulgaria and Slovakia, Bulgaria being in the penultimate position. Despite the more unpretentious institutional base protecting the rights of minority investors, the Czech stock market demonstrates higher levels of liquidity than the Bulgarian one. The same applies to Romania and Croatia, which are also more liquid.

The World Bank's assessment of the institutional framework securing the rights of minority shareholders puts Bulgaria right after the UK and much ahead of the United States, Germany and the emerging stock markets discussed in the table. For Bulgaria, there is a modern institutional base (including statutory instruments and institutions involved), which should lead to a liquid stock market due to the investor protection provided.

Table 1

Ranking countries according to market liquidity indicators, the protection of minority investors and the perpetrated corruption

state	Lm Rank[4]	MIR Rank[5]	Corruption Rank[6]
USA	1	35	16
Great Britain	2	4	10
Germany	3	49	10
Czech Republic	4	57	37
Romania	5	57	58
Croatia	6	29	50
Bulgaria	7	14	69
Slovakia	8	88	50

Source: World Bank Global Financial Development Database, www.worldbank.org and own calculations, data by 2015.

The review of the World Bank's rating on corruption penetration explains the contradiction created by the highly appreciated institutional framework protecting the rights of minority shareholders and the low liquidity ratios on the Bulgarian stock market. Among the stock markets in the table, Bulgaria ranks last, clarifying why full investor protection does not work and does not lead to a liquid stock market. Modern institutions do not function adequately in a corrupt environment, they can not guarantee investor protection despite existing norms and structures. At the same time, the World Bank's high rating of the institutional framework in Bulgaria does not prove its adequacy. The rules and structures implementing it on our stock market are ranked before those in all the markets reviewed (after the UK), but given the low market liquidity indicators, they do not fulfill their purpose.

The high level of corruption is clearly taken into account in the poor institutional performance, as it is precisely this way that the regulatory base is not working and institutional failures are allowed. Unfortunately, the problem with the regulatory base is more serious and requires a more in-depth review. The conclusion from the submitted data is the existence of high nominal protection for minority shareholders. At the same time, the low market liquidity determines the Bulgarian stock market as unattractive, which classifies the high nominal investor protection as actually non-functioning.

The process of introducing regulations requires a flexible judgment applied to each stock market separately and is compounded by the global requirement to harmonize investor protection regulations. Harmonization, according to Frost, Gordon and Hayes (2002), reduces barriers to foreign investors, and the stock market standards increase market quality. The incompatibility of the national institutions with the institutional systems of the old markets, on the one hand, is a type of regulatory failure. On the other hand, a major

[4] Rank in the market liquidity indicators alignment for 2015.
[5] Place in the World Bank ranking on the basis of Minority Investors Rights for all countries for 2015.
[6] Place of the State in World Bank Ranking for a Non-Corrupt Environment for All Countries by 2015.

problem in the process is the evaluation whether the reception of regulations is appropriate for the relevant market, because the excessive regulatory harmonization is also a regulatory failure.

According to the data above, the investment environment in Bulgaria is characterized by over-regulation due to the introduced too restrictive rules (more than those in the USA), as well as by institutional failure due to the inability to apply the norms. The regulatory regime is too heavy and complicated for the emerging national stock market, which raises transaction costs for all market participants. On the other hand, as evidenced by the data in Table 1, regulators fail in applying the rules.

According to Bruno and Claessens (2007), the technical transfer of regulations from developed to emerging markets can be described as "too much of a good thing." According to Litvak (2007), the too high requirements for public companies lead to their disclosure or to their listing in a stock market in another country. This is the reason why no improvement is seen despite the alignment of standards. Often the good foreign practices do not work so well in another market, with other investment traditions, because of the path dependence. The effect of harmonization in such cases may be qualified as over-regulation, and leads to the corresponding negative effects on stock market liquidity.

The "too much of a good thing" phenomenon is registered on the Bulgarian stock market. Market liquidity was on the increase until November 1, 2007, and the period was characterized by harmonization of norms due to Bulgaria's accession to the EU. After that date, the regulator introduced a full implementation of the first MiFID and practically overregulated the investment process. The data (Figure 1) show a sustained downward trend in market activity (MA) after 2007. Within five months, it down doubled (from 8.39 to 4.06) and was down tenfold to 0.84 in mid-2009. At the end of 2017, the indicator values were close to those in the beginning of 2004.

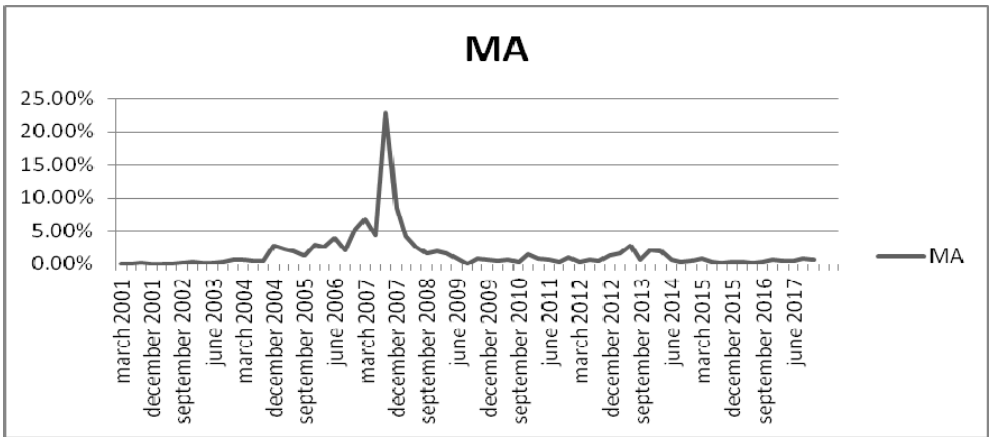
The conclusion points to a stagnated, stable low market liquidity despite the equal investor protection standards. The introduction of new and modern regulations does not fulfill its main purpose, namely to increase the confidence and inflow of capital. This allows for the introduction of modern and restrictive regulations to be defined as "over-regulation".

The calculation of aggregate liquidity indices on the Bulgarian stock market for a longer period confirms the tendency of their deterioration after full harmonization in 2007. Figure 2 shows a sharp increase in the period 2005-2007 and a downward trend in market liquidity indicators from 2008 to 2017, just after the introduction of the first Markets in Financial Instruments Directive. Figure 2 tracks the performance of the three aggregated indicators (turnover, market capitalization and market activity) for the period 2009-2017. The chart identifies not only the lack of a trend to improve market liquidity but also a steady decrease in the period 2015-2017[7].

[7] Only the one-time effect of double market capitalization in the last quarter of 2017 leads to an increase in the level of market capitalization, but this effect is due to the illiquid Bulgarian market, allowing the manipulation of the prices of certain securities.

Figure 1

Market Activity Indicator (MA)[8]



Source: Data on www.bse-sofia.bg, own calculations.

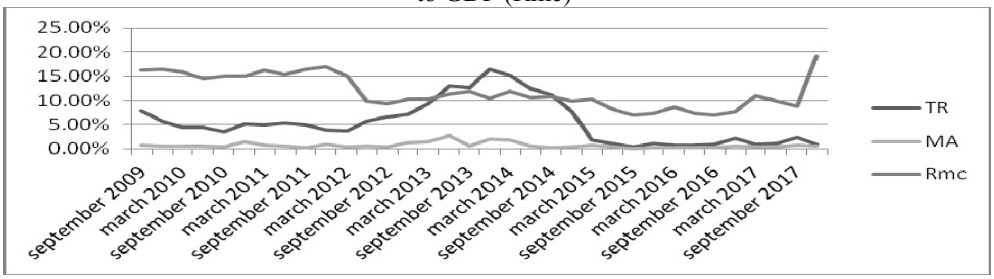
The effects of introducing the first Markets in Financial Instruments Directive for the Bulgarian stock market are not unambiguous. The full harmonization adds confidence to investors, but the financial institutions of the emerging Bulgarian stock market and the young regulatory institutions do not have the administrative capacity to cope with the complex investor protection rules.

Excessive regulations affect the financial system and the stock market much more widely. According to Endo and Ghon Rhee (2006), over-regulation on initial and secondary public offerings, as well as restrictive listing requirements, are a factor for the increase in supply and demand for sovereign debt (crowding out). This process destroys the stock market. The oversupply of government securities also reduces the allocative efficiency.

[8] Only the "market activity" indicator is presented for the maximum period from 2001 until the end of 2017 due to the fact that it does not require data on market capitalization. The other two aggregated indicators for market liquidity work with market capitalization and data are available from September 2009.

Figure 2

Values of turnover ratio (TR), market activity (MA), and the ratio of market capitalization to GDP (Rmc)



Source: Own database calculations from BSE - Sofia Plc.

Table 2 presents data on investments in government debt of Bulgarian universal pension funds as an average percentage of fund assets for the period 2007-2017. As of the end of the nine months of 2017, they total over 10 billion BGN. As can be seen from the data, the percentage of government debt in the portfolios of Bulgarian universal pension funds increased sustainably from under 30% to 50% for a period of 11 years.

Table 2

Report on the average percentage of investments in government debt securities of universal pension funds in Bulgaria

as of September 30, 2007	27.18%
as of September 30, 2008	28.16%
as of September 30, 2009	36.65%
as of September 30, 2010	35.67%
as of September 30, 2011	38.94%
as of September 30, 2012	36.37%
as of September 30, 2013	39.01%
as of September 30, 2014	42.75%
as of September 30, 2015	49.43%
as of September 30, 2016	50.60%
as of September 30, 2017	48.28%

Source: Own calculations based on Financial Supervision Commission data, wwww.fsc.bg, data by 2017.

According to Caprio (1995), emerging markets are risky not only because of political factors but also because they are small, and the imposition of high capital requirements on these markets is dangerous as the requirements are for large and diversified economies. According to him, raising the limits of liability too high could lead to sub-optimal supply of financial services. North, Wallis and Weingast (2006) define this as a serious consequence of over-regulating the local stock market and call it "*bilateral restriction* of *access*". With this phenomenon, investors suffer a reduced supply of financial services due to the withdrawal of issuers and financial institutions, issuers have reduced access to capital, and

leave the national market due to high listing requirements. The consequence is the collapse of the supply of quality investment assets. The process is a built-in mechanism to protect the free market and leads to the freezing of market liquidity.

The evolution of the stock market in Bulgaria in the period 2007–2016 proves the tendency of bilateral restriction of access (table 3). The percentage of the phenomenon is 23.70% reduction in public emissions and 39.53% decrease in the number of investment intermediaries, calculated on the basis of the maximum values achieved before the introduction of the first MiFID. The average annual rate of decrease of the listed issues is 3.27% and that of the investment intermediary withdrawals – 7.55%. While the withdrawal of public companies requires complicated tender procedures, the cessation of the broker's activity does not require additional resources and takes only a few months. Maintaining a 7.55% reduction in these institutions will not only lead to the monopolization of the services, but also to the inability of investors to participate in the Bulgarian capital market due to a sharp decline in the supply of such services.

Table 3

Access to financial services on the Bulgarian Stock Market

year	Issues, traded on BSE-Sofia Plc	Members of BSE-Sofia Plc
2007	509	79
2008	557	84
2009	555	86
2010	528	74
2011	507	69
2012	496	66
2013	495	64
2014	443	57
2015	434	55
2016	425	52

Source: Bulgarian Stock Exchange Sofia Plc, www.bse-sofia.bg, data by 2016.

The conclusion from the above data is that there is a consistent and sustainable withdrawal from the Bulgarian stock market by both issuers and investment intermediaries. These institutions contribute to offering qualitative assets to investors, and to providing access to capital for public companies. This double withdrawal confirms the existence of the phenomenon of "bilateral restriction of access".

In summary, the regulatory fundamentals on the Bulgarian market have a negative impact. Transaction costs are prohibitively high due to over-regulation, the access to financial services is restricted, and the ineffective harmonization leads to lack of real protection (both forms of regulatory failure). Extremely complicated requirements for investors, brokers and issuers form the "too much of a good thing" phenomenon. In practice, investor protection is down, transaction costs are rising, and both investors and brokers, as well as issuers, are repulsed. Regulatory institutions are not able to apply the complex norms, which eliminates real investor protection (institutional failure). The introduction of new and heavier regulations in an illiquid and emerging stock market such as the Bulgarian market is a

negative factor for the quality and usefulness of this market. The young Bulgarian financial and regulatory institutions do not have the necessary administrative and financial capacity to cope with complicated norms, which is why the real protection of investors is not positively influenced.

3. Legislation under the second Markets in Financial Instruments Directive (MiFID2)

The First MiFID[9] (November 2007 to the end of 2017), creates conditions for European investment firms and banks to provide financial services and establish branches in other EU member states on the basis of the permit and under the supervision of their country of origin. To achieve this, the Markets in Financial Instruments Directive harmonises the initial licensing, operational requirements and the functioning of regulated securities markets. The access to the Community investment market requires a high investor protection, which is the reason for establishing new regulatory requirements. In addition, the latest financial crisis reveals weaknesses in regulatory requirements due to insufficient regulation of OTC transactions, respectively transparency and disclosure problems. According to EU authorities, complicated market conditions require more powers for supervisors.

The 2008 financial crisis is believed to have arisen due to weak corporate governance of financial institutions, notably in the investment risks and clients recommendations. The second Directive (from the outset of 2018) introduces more detailed principles and minimum standards applicable to financial institutions. The review of the causes that led to the crisis does not take into account the role of supervisory authorities in systemic risk management gaps and the responsibility of investors to make financial decisions.

The MiFID2 aims to create an integrated European financial market in which investors, efficiency and market integrity are effectively protected. The concept of "market integrity" is likely to be understood as protecting from collapse caused by an unmanageable increase in systemic risk and losses in large financial institutions.

One of the most serious problems arising from the new directive is the supervision of non-financial institutions, but their investment activity is essential. It is explicitly stated that the scope of the Markets in Financial Instruments Directive does not include persons for whom the investment activity is ancillary to their main business but the main activity is defined as the activity in which the prevailing investments are made. This text defines the persons and companies for whom the main equity investments are in financial instruments without being financial institutions offering investment services, as persons subject to oversight. The exact wording is "non-financial companies operating on financial instruments that are disproportionate to the level of investment in their core business fall within the scope of this Markets in Financial Instruments Directive." Additionally, "individuals" in the text are both natural and legal persons. At the same time, the scope of the directive excludes

[9] The texts of both Directives and of Regulation 600/2014 and 588/2017 are further used. The goal is to recreate norms and not to change the meaning.Source: eur-lex.europa.eu/homepage.html?locale=en

collective investment undertakings, insurance companies and pension funds, which are large investors on their own account, whose main business is the investment in financial instruments. Extremely serious problems are caused by the words "persons providing investment services and / or carrying out investment activities falling within the scope of this directive should be subject to licensing by their home member states with a view to protecting investors and the stability of the financial system". If the above logic is followed, all individuals (physical and legal) whose principal investments are in financial instruments become subject to licensing and supervision. This is confirmed by the following text in the Markets in Financial Instruments Directive: "Persons providing investment services and / or carrying out investment activities falling within the scope of this directive should be subject to licensing by their home member states with a view to protecting investors and stability of the financial system".

Transactions of non-financial corporations with financial instruments are increasing as the share of financial assets in the total assets of entities other than financial institutions increases. The process has long been recognized and researchers use the term "financialization" to describe the phenomenon. Financial income and expenses for non-financial corporations and individuals are rising not only because of higher access to capital markets but also by exposing them more to the impact of these markets: low-interest rates on deposits, the responsibility for investing free funds, higher access to capital through capital markets. The banking system itself is changing due to the impact of these factors. Following this logic, entities whose underlying assets are invested in financial instruments will become more and more. Putting them under any form of supervision means that additional resources need to be made available to supervisors and that their administrative capacity is increased to the extent necessary to handle the number of supervised entities. In addition, investments in financial instruments are by definition risky and these individuals invest their own funds. Their status of non-financial institutions means that they do not attract money from the public for investment on the capital market, respectively, cannot cause losses to other persons. In this sense, the systemic risk is not affected by transactions of companies and persons that are not financial institutions, and oversight of their investments, apart from assuming to lead to rising costs of public funds, will also be totally unnecessary.

An additional problem arises from the increase in regulated transactions. Subjecting non-financial corporations and individuals investing equity in securities to supervision means controlling multiple additional transactions, which requires capacity on the part of both supervisors and supervised entities. This additional administrative capacity leads to an increase in transaction costs and a further decrease in the number of persons investing in financial instruments. Whereas for the old and liquid capital markets this outflow may be minimal, for new and underdeveloped markets such as the Bulgarian one similar restrictions mean an increase in the quantitative manifestation of the phenomenon of "bilateral restriction of access", which distorts both the supply of qualitative assets and the access to capital.

Algorithmic trading and high-frequency algorithmic trading are accepted by the Markets in Financial Instruments Directive as a source of disruption to market functioning. Therefore, the rules therein require trading firms and markets to ensure that their trading systems are

sustainable and appropriately tested to cope with the increased number of orders or market turmoil, and that broker firms and trading systems have mechanisms for temporary suspension or limitation of trade in sudden and unexpected price changes. The directive requires that it is appropriate to prohibit the provision of direct electronic access to markets by investment firms to their clients where such access is not subject to appropriate systems and controls. Irrespective of the form of direct electronic access granted, intermediaries providing such access should assess and verify the suitability of customers using that service and ensure that the use is subject to appropriate control measures and that those intermediaries retain the responsibility for trade represented by their customers through the use of their systems.

The texts state two important issues: the suitability of clients and the responsibility of intermediaries for customer investment decisions. The suitability of the clients should be based on their maturity and their ability to act, and the responsibility for individual investment decisions lies with the investor. If investor transactions violate the rules, the liability should lie with them, not with the investment intermediary whose platform is used.

The objective of establishing over-regulation of transactions resulting from investment algorithms is reinforced by the text of the directive that effective supervision requires that competent authorities be given the opportunity to take timely action against false or deceptive algorithmic trading strategies. For this purpose, all orders generated in algorithmic trading must be denoted. This requirement leads to at least one huge technological problem - a software change. This change should be made for both the exchange trading system and the trading platforms of investment firms. Even greater complexity results from the fact that the investment firm does not necessarily know that the client's order is generated by an algorithm.

An additional problem arises from the definition of "wrong or deceptive algorithmic trading strategies." This type of trading is a quick submission of market orders for transactions in financial instruments based on timely and qualitative processing of market information. It is possible that some of the orders are wrong, in the sense that the initiated transaction will cause a further loss. This is a possible end result also in case the order is not filed through such a system. Deceptive strategies should probably be understood as strategies to manipulate trade by entering into transactions that lead other market participants to wrong conclusions about the price, supply and demand of a financial instrument. This type of transactions are prohibited on any stock exchange and by any law on financial instruments markets. However, they continue to happen even if they are not initiated by an algorithm.

Algorithmic trading is just one of the aspects posed on over-regulation. The access to the regulated markets through a trading platform is also restricted. The Markets in Financial Instruments Directive requires every provider of direct electronic access to a trading venue to build effective control systems and mechanisms to ensure that it is properly analyzed and reviewed whether customers are suitable, the margin limits are not exceeded and that there are appropriate risk control mechanisms preventing risk-creating transactions, contributing to a disorderly market or being contrary to the rules of the trading venue. According to the directive, direct electronic access without such control mechanisms is prohibited. An investment firm providing direct electronic access is responsible for ensuring that customers using this service comply with the requirements of this directive and the rules of

the trading venue. The broker should monitor transactions to identify breaches of the rules and report to the competent authority.

The texts raise a number of questions - is it possible that an investor's dealings, however large the investor may be, could destroy the integrity of the market, how the investment firm predicts the macro effect of transactions that are concluded milliseconds after their initiation and how the client's behavior causes problems for the intermediary itself. Moreover, financial supervision commissions are responsible for complying with the rules and preventing non-compliant behavior. They are competent to investigate and establish such practices, and the investment firm should only be responsible for compliance with the laws on the part of their employees. The assignment of supervisory functions to private entities engaged in business for profit is both unnecessary and potentially dangerous to the protection of clients' rights. Restricting the transactions of a client-initiated by an investment firm leads to a limitation of its profitability from the financial instruments chosen by it. A decision to limit client orders, which would later be determined to be wrong by a judicial authority, may lead to an unlimited loss for intermediaries, which already represents an increase in systemic market risk.

Apart from the impossibility of meeting the above requirements, the issue of over-regulation and transaction costs also arises. The introduction of an obligation for investment firms to monitor the behavior of their clients requires technological innovations, electronic systems and skilled employees. They are already responsible not only for the management of their own portfolios but also for the transactions of their clients. The increase in transaction costs and regulated transactions due to this text is quite logical.

Investment consultation and advice are the next objective of the MiFID2 and are even more regulated. According to the directive, the investment firm should indicate in a written statement how the recommendations provided correspond to the preferences, needs and other characteristics of the non-professional client. The fulfillment of this requirement implies that the client has provided tremendous information not only about his financial condition and his risk aversion but also about his psychological characteristics. Such obligations for intermediaries make them "always guilty" and impose responsibility on them for decisions by qualified entities that should themselves bear the consequences of accepting or rejecting investment advice. The risk of such investments is known and subject to prior evaluation, assuming that each investor has the tools and knowledge to judge his decisions. Recommendations are prepared with regard to uncertainty and risk and can not guarantee profit, as they are a presumption made under certain assumptions and conditions. In this sense, a lack of intention and a proper understanding of the risks os wrong advice is appropriate, however, over-restrictions such as the requirement that the advice is correct and appropriate, are neither objective nor possible.

The Markets in Financial Instruments Directive also confirms the classical requirement for the firm to ensure "best execution" of client orders. The attempt to impose an effective "best execution" obligation on client orders with investment firms to ensure that they execute client orders on terms that are most favorable to the client does not take into account the exceptional volatility of the financial instruments. The broker can not know at what point the prices will be the most favorable, respectively, the liability in this sense is not adequate.

An interesting aim of the directive is to achieve complete success in risk assessment. It is pointed out that in the last financial crisis it has become clear that professional clients are not always able to assess the risk of their investments. For this reason, information is required to be provided to eligible counterparts (well-experienced and knowledgeable investors), and municipalities and local public authorities should be explicitly excluded from the list of eligible counterparts and from the list of clients, considered to be professional clients. Municipalities and local public authorities have financial professionals whose competence should allow at least elementary knowledge of financial investments and an assessment of their risk. In addition, it should be known that investing is a risky venture and it is normal for all investors, even unprofessional, to be clear about it.

The literature concerning the risk inherent in financial instruments includes both aspects of the nature of investments in financial assets and instruments for assessing risk. This toolbox is classical and should be mastered by all professionals. Despite its steady development, the toolkit does not guarantee a complete risk assessment. Financial instruments form their prices not only based on investor expectations for cash flows that will be generated, but also on the basis of macro national, regional and global sense, industry expectations for them, money supply and business cycles. Last but not least, is the individual risk aversion. Risk evaluation is an assessment, ie. it is an attempt to approximate reality, and therefore technology for reducing portfolio risk does not lead to its complete avoidance. The standard set of assessment tools cannot guarantee that the evaluation of intermediaries is competent. Indeed, a fully credible risk assessment of a financial instrument ranks right up to and can be entirely due to the availability of insider information, which is a gross violation of the rules. In this sense, the attempts by the directive to impose a full risk assessment are not set on an objective basis.

The directive also aims to facilitate access to capital for small and medium-sized enterprises (SMEs) and to further develop specialized growth markets. It is proposed to develop common regulatory standards for SMEs to gain access to the capital markets. In this connection, it is possible to make recommendations through these standards to introduce common rules for the tools related to crowdfunding, which is an alternative to innovative SMEs (Rafailov, 2017). Unfortunately, the wording in the directive is quite general. Thus, the European Commission and the Member States have great opportunities for different interpretations, which is also a prerequisite for over-regulation.

The very narrow definition of related parties has always been a problem on the Bulgarian market. The new Markets in Financial Instruments Directive introduces the concept of close links, which means that when two or more natural or legal persons own directly or by way of control at least 20% of the voting rights or capital of an undertaking, they are likely to be the subject of a connectivity investigation. It is good for lawmakers to take into account the fact that there may be at least two persons in each company that together hold 20% of the shares. Such persons may have never met each other, so there would be no way to establish links between them, all the less close ones.

The objectives of the directive are too ambitious in attempting to manage systemic risk in commodity markets when investing in these markets through derivatives. Limit positions are introduced with respect to the amount of net position held by a person for commodity derivatives and for economically equivalent OTCs. Restrictions are determined on the basis

of all positions held by a person or by a unified group in order to prevent market abuse and to promote proper pricing and settlement conditions. The rules concern also positions leading to market distortion and to ensure in particular a convergence between the prices of derivatives in the month of delivery and spot prices for the basic commodity without prejudice to the disclosure of market prices for the base commodity price. The limitations shall not apply to positions held by or on behalf of a non-financial entity which are objectively measurable as leading to a reduction in risks directly related to that entity's business.

The expressions "to promote proper pricing", to avoid "market distortion" and to "ensure the convergence between the prices of derivatives in the month of delivery and spot prices for the basic commodity" are impressive. The existence of similar objectives in a private contract is certainly defined as the ultimate form of market manipulation. The measures envisaged to ensure the above objectives include, in addition to tracking the positions and imposing restrictions, an opportunity for the market operator to ask an investor to ensure market liquidity at an agreed price and in an agreed volume, with the explicit intention to mitigate the impact of a large size or dominating position. This means that in the context of market panic, with rising prices, a particular investor will be forced to sell at current market prices, which after only hours may turn out to be low, so he will suffer serious lost profits, even great losses.

On the basis of the above quotes and the theoretical guidelines on capital market regulation, the main expected effects of the introduction of the directive for the young Bulgarian capital market are the increase in transaction costs due to the burden on investment intermediaries with multiple control functions on their clients' transactions and the growth of regulated transactions leading to over-regulation. Both effects imply an outflow of investors and intermediaries, which reduces both access to capital and market liquidity, resulting in a decrease in the quality of the capital market.

In summary, the second Markets in Financial Instruments Directive increases the transactions subject to supervision, respectively increases restrictions. Existing norms before the introduction of the second directive can be defined as too restrictive and the deepening of the process additionally aggravates the phenomena "too much of a good thing" and " *bilateral restriction* of *access*", which leads to highly negative effects for the Bulgarian stock market.

4. Legislation under Regulation 600/2014 on markets in financial instruments

Regulation 600/2014 goes further and states that the European Securities and Markets Authority (ESMA) should be able to require from each person information on its position in relation to a derivative contract, to impose a reduction on that position, and to limit the ability of market participants to enter into individual transactions in commodity derivatives. This concerns all relevant information on the size and purpose of the exposure, and after analyzing the information received, and power to impose reduction or elimination of the position.

The ideas of the OTC deals limitation from MiFID 2 are also pursued in Regulation 600/2014. The regulation must ensure that trading in financial instruments is carried out, as far as possible, at organized trading venues and that all such trading venues are appropriately regulated. Any trading system with financial instruments, such as structures currently known as order comparison systems, should in the future be properly regulated as a type of multilateral trading venue or as a systematic participant. There is also an explicit requirement that derivative transactions should only take place on regulated markets, MTFs or OTFs.

OTC markets have always existed, and the OTC transactions had to be registered on regulated markets, precisely in order to implement transparency on prices of different emissions. Something very important – some of the securities traded on these markets are not listed issues, so the companies are not public. There is no other way for the owners of these securities to sell or new investors to open positions. The regulation of OTC market will let private companies in a very limited position to attract capital.

The next restriction provided in the regulation requires that investment firms are not allowed to execute client orders against their own capital on the regulated markets and MTFs. This means that when a client order a sale, the broker can not buy the securities, and in the case of a purchase order he cannot sell from his portfolio. The aim is probably to avoid conflicts of interest and, in particular, the front-running. The problem will arise in illiquid markets and illiquid assets. In these cases the spread is extremely wide and the client will suffer a loss just because of the lack of adequate counter-order. If an intermediary forms long positions in the respective issue, they could offer an adequate price, the same way this will happen in the reverse transaction. Applying the provision will lead to an even higher volatility of illiquid emissions, as well as to losses for both customers and investment firms.

In order to avoid a negative impact on the pricing process, the Regulation introduces a volume capping mechanism for orders placed on systems based on a trading methodology where the price is determined in accordance with a reference price. This means that investors can not determine the volume of the instruments they buy or sell. Additionally, the definition of the ceilings cannot be objective because the effect of certain transactions on the market becomes clear later, especially since more investors have followed another investor's position.

The Regulation requires data on transactions in financial instruments to be reported to the competent authorities so they can detect and investigate potential market abuse, monitor the correct and orderly functioning of markets, and control the investment firms. The scope of this oversight includes all financial instruments as well as derivatives where the underlying instrument is a financial instrument or an index or a basket of financial instruments, all traded on a trading venue. Investment firms have always presented transaction information on a consolidated basis. The investigation implies that the supervisor will receive information about the parties to the transactions, which supervises not only the investment intermediaries but also their clients.

The powers of the competent authorities should be complemented with a clear mechanism for restricting the placing on the market, distribution and sale of all financial instruments or

structured deposits that give rise to serious concerns regarding investor protection, the integrity of financial markets or commodity markets, or the stability of the whole or part of the financial system. Requirements till now include investor protection through transparency mechanisms and disclosure of all available information and potential conflicts of interest. The normal functioning and integrity of markets cannot be threatened by the introduction of any financial instrument, especially if the rules on disclosure are met. Such a text gives the right to reject new issues because of misunderstanding or reinsurance. In any case, this is a way of limiting access to capital for issuers and new financial instruments for investors. Criteria are also provided for cases where restriction is required - the degree of complexity of the financial instrument and the relationship with the type of client to which it is marketed, the amount or nominal value of the issue of financial instruments, the degree of innovation of a financial instrument, activity or practice, the leverage that a financial instrument or practice provides, the degree of innovation of a structured deposit, activity or practice. These criteria imply that a sophisticated, high-denomination, and high-risk financial instrument will not be admitted to public offering. Unlike the new regulation, the previous directive introduced explicit reductions for high nominal value issuance, precisely because the requirement to invest huge capital means that the investor is either a professional or has access to high-quality professional advice. The question remains whether an innovative product, which is incomprehensible to the supervisor, will have a chance of public offering.

The Regulation introduces extremely heavy restrictions on the activity of both investment firms and regulated market operators as well as market participants who are not financial institutions but invest a significant part of their capital in financial instruments. Restrictions on investors in commodity-based derivatives are even more serious. Algorithmic trading and over-the-counter transactions, as well as investment advices and consultations, are part of the investment activity that poses serious problems with regulators.

The effects of the introduced requirements are a strong increase in transaction costs for both intermediaries and regulated markets, as well as for investors. Since the beginning of 2018, the amended law on the markets for financial instruments has already been in place in Bulgaria. The restrictions introduced by the second Markets in Financial Instruments Directive and the Regulation 600/2014 on markets in financial instruments are for the most part not transposed into Bulgarian legislation. The regulator's intention of future changes to the law is not known, but the full harmonization of the Bulgarian regulatory base with the requirements of the Directive and the Regulation will have serious negative implications for the Bulgarian securities market.

5. Legislation of Delegated Regulation (EU) 588/2017 supplementing Directive 2014/65/EU with regard to regulatory technical standards on the tick size regime for shares, depositary receipts and exchange-traded funds

Since 2018, Regulation 588/2017 introducing liquidity bands has been in force, and respectively minimum quotation steps – tick size regime – for securities traded on national stock exchanges. As part of the European market, BSE Plc has also introduced the

mentioned tick size regime. The essence of the regulation is to set liquidity bands for each issue by setting the average daily number of transactions, with the lowest band (the most illiquid) implying the highest bidding step. The illiquid Bulgarian stock market naturally directs Bulgarian companies to trade at the highest quotation steps. High quote steps mean an immediate increase in the spread between "buy" and "sell" quotes. The spread is one of the main factors for market liquidity and, through it, for the quality of the stock market.

Securities markets should be useful to the national economy. To successfully perform their functions to help raise capital for companies, investing free funds and disinvestment, they must be liquid. Market liquidity is a category that is formed by two important aspects - the possibilities for immediate transactions and their implementation at low transaction costs (Naydenova, 2016). Instantness is ensured by the presence of many investors and issuers, well-developed market infrastructure, diverse and large volumes of investment assets and by the willingness of investors and issuers to invest in and offer assets. The willingness of investors and issuers, in turn, is determined by a number of complex factors (trust, transparency, macroeconomic fundamentals, uncertainty, institutional matrix).

The low transaction costs mean minimum possible spread level, fees and barriers to the transactions and fair market prices, and are achieved through adequate market microstructure, effective regulatory institutions and an adequate regulatory base. Fair transaction prices are a characteristic of the liquid and efficient stock market and, together with immediateness, determine it qualitatively.

While instantness is an indicator influenced by multiple complex and long-term qualities such as the attractiveness of the national market, transaction costs appear to be a system in which accruals and effects are more visible and manageable. They are decomposed into two basic elements - implicit and explicit, according to Domowitz, Glen and Madhavan (2001). Explicit costs are the direct transaction costs: brokerage commission, service charges, taxes. Implicit costs are indirect commercial costs, the most significant being the market (price) impact, and spread. According to the authors, the market price impact represents one-third of the total transaction costs and indicates the importance of evaluating and monitoring it. The market impact is the change in the price of large sales or purchases. At these times, orders are executed at market prices and, depending on their depth and breadth, the price is subject to varying degrees of market imbalance. If multiple orders at a similar price are available, for large volumes, the price impact will not be high, the market will take up the extra demand or supply, and there will be no imbalance in the demand or supply of securities, or an increase in volatility. The bid-ask spread is the difference between the best buy and sell orders. Spread is also an indicator of the quality of the market microstructure as it includes transaction costs and losses due to information asymmetry (Diamond and Kuan, 2012).

The reasons for the high spreads have been thoroughly studied. According to Copeland and Galai (1983) and Glosten and Milgrom (1985) the main reason is the insider trading that results in adverse selection and expropriation, respectively. Barclay and Holderness (1989, 1991) and Mikkelson and Regassa (1991) prove that even the probable insider trading is valued by investors and the spreads grow. According to the Inventory Paradigm (Demsetz (1968), Stoll (1978) and Ho and Stoll (1981)), inventory costs determine liquidity, the spreads, depth and market impact as the main measures of liquidity. Another explanation

for the magnitude of spreads provides the liquidity commonality. It is a synergy in the movement of asset prices, a trend driven by common changes in funding liquidity. The relationship was established by Brunnermeier and Pedersen (2007) and Brunnermeier, Nagel and Pedersen (2008). Chordia, Roll and Subrahmanyam (2000) prove that the individual spreads and depth are provoked by changes in aggregate market spreads and depth. Spread is actually an even more important measure of market conditions. Easley and O'Hara (2010) create a model of uncertainty as a factor of illiquidity. When there is uncertainty about many financial assets, there is little or no trade - market illiquidity - and in this case quotes are not appropriate measures for the fair value of assets because the market is ineffective. The uncertainty spread argues that illiquidity arises from uncertainty, not from risk.

From what has been said so far, the high spread and high price impact are a product of information asymmetry and uncertainty, and have a negative impact on market liquidity and, respectively, the quality of the capital market in the performance of its core functions - access to capital for companies and investment opportunities for investors. In addition, high spreads and price influences significantly increase the level of transaction costs, which directly determine the operational efficiency of the secondary market (Jordanov, 2009). Indeed, the importance of transaction costs is even more serious - Coase (1992) proves that if they are higher than the profit from the deal, the transaction will not take place.

On the basis of the above-mentioned research views, it can be argued that the low spread is an intuitive indicator of the quality of the respective national capital market. The negligible spread, combined with considerable depth and breadth in the market, ensures instant deals for both buyers and sellers of financial instruments. The low spreads indicate both low implicit transaction costs and higher attractiveness on the relevant capital market. The liquidity market implies a negligible spread (below a penny) and a serious depth and breadth of orders. In turn, the market impact influences both the size and attractiveness of the market for investors. For these reasons, spreads and price impacts consolidate the influence of all market and institutional factors and quantify the level of liquidity, which is why they are perceived as a complex determinant of market liquidity (Naydenova, 2016). In addition, low volatility implies undisturbed trading and market attractiveness.

The consequence of the above opinions is the logical conclusion that low spreads, low volatility and low market impact are desirable qualities on any capital market, so supervisors involved in this market should not take action to increase the value of these indicators.

Unfortunately, the newly introduced Regulation (EU) 2017/588 sets liquidity bands and quote steps (tick sizes) that are extremely inappropriate for the emerging and still very illiquid Bulgarian capital market. As a result, there has been a deterioration in both spreads and market impacts and volatility. The effect is to increase the implicit transaction costs and the uncertainties that affect the quality of the national market.

Despite the available scientific basis about transaction costs, spreads and their impact, delegated Regulation (EU) 2017/588[10] aims to ensure the smooth functioning of the markets by setting out regimes for quotation steps or minimum quote steps for some financial instruments. According to the regulation, there is a high risk due to a steadily decreasing share quote, deposit receipts and some types of exchange-traded funds, respectively, there is a negative impact on the proper functioning of the market, therefore, the quote steps and the risk should be controlled through a mandatory for tick sizes. The Regulation does not provide arguments that the constantly decreasing steps of financial instruments pose a risk to the functioning of markets and does not take into account the increase in transaction costs through spread and market impact, especially for illiquid markets.

Despite the danger set by the regulation due to the low pricing steps, a correlation exists between exchange-traded funds and related equity instruments and therefore the minimum tick size for stock-holding funds and depository receipts is set for stock-exchange traded funds. In addition, it is important that all stock-exchange trades covered by this Regulation should be subject to the same quote-based regime based on a single range of liquidity regardless of the average daily number of transactions so as to reduce the risk by circumventing the quote steps in relation to these tools.

Exchange traded funds are known to be one of the most active market players, since they are obliged to reformat their portfolios at any change in the indexes they track, and to invest and disinvest at any change in the value of the portfolios they manage. It is interesting to note that the minimum quotation steps are required for the trading of their units, whereas for the transactions they perform, quotation rates, sometimes higher, are set.

Quotation steps are applied according to the liquidity band (table 4), which corresponds to the average daily number of transactions. The quote step changes depending on the price range in which the order price is located.

BSE Plc gives instructions and an example of quoting. According to a stock exchange announcement "In the event that a given issue of shares XYZ is assigned a liquidity range of LB1 (average daily number of trades from zero to ten), this means that the broker will be able to enter orders with a quote step 0,01 at 1.97, 1.98, 1.99, and so on in a price range of 1 to 2 leva, but there will be no possibility of entering a price of 1.975 levs, for example. Upon changing the price range from BGN 2 to BGN 5, the broker will be able to enter orders with a quote of 0.02 at the price of BGN 2.00, BGN 2.02, BGN 2.04, etc. but it will not be able to place an order at a price of 2.01, 2.03. It should be noted that the quotation step changes as the price range changes until the liquidity stays unchanged. "

[10] The regulatory texts of the Regulation are based on Regulation (EU) 2017/588, http://eur-lex.europa.eu /homepage.html? local = bg

Table 4

	Liquidity bands according to Regulation (EU) 2017/588					
Average daily number of transactions	to 10	from 10 to 80	from 80 to 600	from 600 to 2000	from 2000 to 9000	over 9000
Price ranges	LB1	LB2	LB3	LB4	LB5	LB6
1 ≤ price < 2	0,01	0,005	0,002	0,001	0,0005	0,0002
2 ≤ price < 5	0,02	0,01	0,005	0,002	0,001	0,0005
5 ≤ price < 10	0,05	0,02	0,01	0,005	0,002	0,001
10 ≤ price < 20	0,1	0,05	0,02	0,01	0,005	0,002
50 ≤ price < 100	0,5	0,2	0,1	0,05	0,02	0,01
50 000 ≤ price	500	200	100	50	20	10

Source: Regulation (EU) 588/2017, by January 2018.

Due to the low liquidity of the Bulgarian stock market, the regulation imposes high quotation steps, which increase both the spread and the price impact in cases of market imbalances. This, according to the abovementioned authors, leads to lower market liquidity and increased transaction costs and therefore implies an extremely negative impact on the young Bulgarian stock market, requiring a study of the effects. The following study is conducted with some limitations. Regulation 2017/588 was enforced in the beginning of 2018. January 2018 was characterized by tranquil trade, without the presence of events of a national or global magnitude, which are the cause of high stock volatility. For this reason, the survey compares the January 2018 stock exchange transactions with those of January 2017. The comparison of the February 2018 transactions with those of February 2017 would be incorrect as February 2018 runs on a volatile stock exchange due to the US correction that affected all stock markets and would have even higher scores to confirm the study's findings. Naturally, the period is short, but the purpose of the study is to prove the immediate negative effect of the new restrictions. On the other hand, available researches have so far been clear about the consequences of high spreads and the subsequent calculations are just another proof of their validity and the danger of introducing new standards.

Eleven companies, permanent members of SOFIX, have been analyzed. They are the most liquid with a low price spread. Inclusion in the survey of companies that are not so liquid would distort the results in favor of the findings of the study. Zero trading days and days where few transactions are available at the same price are excluded from the valid results. The Bulgarian stock market has low liquidity and similar interruptions of data are normal for it. Inclusion of a standard deviation of zero in the sample due to a lack of transactions would lower the average, representing data manipulation.

Examining the impact of quote steps begins with spreads changes. With a possible bidding rate of BGN 0.0001, the difference between the buy and sell orders can be BGN 0.001. For a tick size of BGN 0.01, the difference between the best orders may be no less than 0,01. This difference also determines the market spread. The magnitude of the changes, calculated on the basis of changes in the possible margin, is presented in Table 5.

As can be seen from the data in Table 5, the possible market spread is strongly increasing - ninefold for companies with a quote step of BGN 0,01 and nineteen times for companies

with a quote step of BGN 0,02. According to the theoretical provisions, such a deterioration of the spread leads to an increase in the implicit transaction costs, which is a reason for a strong decline in market liquidity, respectively in the attractiveness and usefulness of the Bulgarian capital market.

Table 5

Changes in stock quotes included in SOFIX due to Delegated Regulation 588/2017, data by February 2018

Company	Liquidity band	Stock price on 09.02.2018г.	Quotation step	Possible spread before the Regulation	Possible spread after the Regulation	% change in minimal possible spread
Sopharna Plc	LB2	BGN 4.08	BGN 0.01	BGN 0.001	BGN 0.010	900.00%
CCB Plc	LB2	BGN 1.94	BGN 0.005	BGN 0.001	BGN 0.005	400.00%
FIB Plc	LB2	BGN 5.42	BGN 0.020	BGN 0.001	BGN 0.020	1900.00%
Ind.Holding Bulgaria Plc	LB1	BGN 1.01	BGN 0.005	BGN 0.001	BGN 0.005	400.00%
Neohim Plc	LB1	BGN 46.60	BGN 0.200	BGN 0.001	BGN 0.200	19900.00%
FNEB REIT	LB1	BGN 1.94	BGN 0.010	BGN 0.001	BGN 0.010	900.00%
Monbat Plc	LB1	BGN 10.20	BGN 0.010	BGN 0.001	BGN 0.010	900.00%
M+S Hydravlik Plc	LB1	BGN 7.80	BGN 0.050	BGN 0.001	BGN 0.050	4900.00%
Stara Planina Hold Plc	LB1	BGN 7.70	BGN 0.050	BGN 0.001	BGN 0.050	4900.00%
Albena Plc	LB1	BGN 59.00	BGN 0.500	BGN 0.001	BGN 0.500	49900.00%
Chimimport Plc	LB2	BGN 2.47	BGN 0.010	BGN 0.001	BGN 0.010	900.00%
Average spread increase						7809.09%

Source: Own calculations on data from www.bse-sofia.bg.

The artificial increase in the spread is expected to lead to an increase in the volatility of prices. If the next transaction cannot be at a price lower or higher by BGN 0.001 but lower or higher by BGN 0.01 for most issues, this conclusion is logical. The volatility test (table 6) is based on an analysis of the values of the "standard deviation" indicator for the transaction prices of the most-traded public companies on the Bulgarian stock market. The standard deviation of transaction prices, presented as an average for January 2017 and 2018, increases for all companies except one, with an average of almost 40%. The maximum values for the indicator rise for seven out of eleven companies and the average increase is more than 14%. The minimum values are up for eight out of eleven companies, and the average increase is nearly eightfold. The volatility of the SOFIX index rises about two and a half times.

Table 6

Changes in the "standard deviation" values for some of the most traded stocks on BSE Sofia Plc. The survey covers the periods 01.01.2017 - 31.01.2017 and 01.01.2018 - 31.01.2018[11], data by January 2018

Company	Maximum value		% change to 2017	Minimum value		% change to 2017г	Average value		% change to 2017
	2018	2017		2018	2017		2018	2017	
Sopharna Plc	0.02629	0.06582	-60.06%	0.00010	0.01117	-99.10%	0.00877	0.01900	-53.84%
CCB Plc	0.03503	0.02794	25.36%	0.00631	0.01351	-53.32%	0.01400	0.00909	54.02%
FIB Plc	0.10025	0.05934	68.94%	0.08857	0.04839	83.03%	0.04280	0.03300	29.70%
Ind.Holding Bulgaria Plc	0.03182	0.01824	74.42%	0.02828	0.00207	1266.26%	0.01400	0.01060	32.08%
Neohim Plc	2.01246	2.06094	-2.35%	0.34503	0.07071	387.95%	0.01400	0.00950	47.37%
FNEB REIT	0.03260	0.02765	17.91%	0.00667	0.00050	1233.33%	0.00880	0.00820	7.32%
Monbat Plc	0.16491	0.15872	3.90%	0.00010	0.00084	-88.05%	0.06900	0.05900	16.95%
M+S Hydravlik Plc	0.10368	0.06899	50.28%	0.02500	0.00289	766.03%	0.06110	0.02300	165.65%
Stara Planina Hold Plc	0.12500	0.10251	21.94%	0.02739	0.00379	623.36%	0.07050	0.05040	39.88%
Albena Plc	0.77121	1.32127	-41.63%	0.24398	0.00586	4063.78%	0.41600	0.33250	25.11%
Chimimport Plc	0.01676	0.01706	-1.79%	0.00467	0.00212	120.00%	0.00996	0.00660	50.91%
Average values	**0.31091**	**0.35714**	**14.27%**	**0.07055**	**0.01471**	**754.84%**	**0.06627**	**0.05099**	**37,74%**
SOFIX							**10.29**	**3.01**	**241.86%**

The average daily price change represented by their standard deviation is an important indicator of uncertainty. High volatility is perceived as high uncertainty and leads to freezing of trade. Market liquidity declines and the national market becomes unattractive to both investors and issuers, which is extremely negative for the emerging Bulgarian stock market.

The analysis continues with price impact measurement. Price or market impact is the percentage change in the price when bidding or asking a quantity of some asset that exceeds the normal market volume. High-volume investment positions are always taken into account as this leads to a significant change in the price at which the needed volume of the securities can be bought or sold, or to a significant increase in transaction costs for market orders.

Appendix A presents theoretically possible scenarios when placing a sell order in excess of available demand at a given price level. In the scenario, buy orders are sorted according to the possible quotation steps in both options - before and after the introduction of EU Regulation 2017/588. In the example with Sopharma Plc upon entering the "sell" order and after exhaustion of demand at the price of 4.08 BGN, the next search is at the level of BGN 4.07. At a quote of 0.001 BGN applied prior to the introduction of the Regulation, the next search may be at a price of 4.079 BGN. For sales in volume exceeding the normal, it is

[11] Source: Own calculations on data from www.bse-sofia.bg.

theoretically possible to fulfill all placing orders for the possible prices levels. In satisfying orders at five possible price levels, the gross price effect is 1.23% under the new regulation and only 0.15% in the old quote steps. Of course, in the companies with a higher quote, the price effect is higher - at FIB Plc, whose quote step is BGN 0.02, the price effect increases to 1.85%, with 0.09% for the old quotation steps. Albena Plc, whose quote step is BGN 0.50, the potential price effect rises to 4.24% at 0.01% for a quote step of BGN 0.001.

The possible market impact thus calculated, averaging the results, shows an average change of 2.25% for the quoted steps introduced and 0.17% for the old regulation without the increased quote steps. In case of increased market activity due to a high-interest event, investors trade on all liquid positions, which means a total market effect of 24.79%. At a quote step of BGN 0.001, this would have a combined market effect of only 2.31%.

There are examples that illustrate possible market impact even more clearly. Two of the companies traded on BSE Sofia Plc are very illiquid, but with high market prices, respectively they are given a maximum quotation step (Varna Plod Plc and KRZ Odessos Plc).Varna Plod Plc has a last price of 396.40 BGN and the quotation step is 2.00 BGN. KRZ Odessos Plc has a last price of 90 BGN and the quotation step is 0.50 BGN. This means that each price change will amount to half a percentage of the price for Varna plod and 0.56% for KRZ Odessos. In the theoretical scenario, where investors submitted bids for the possible quotation steps, in five offers, the price effect on Varna Plod will be BGN 10 or 2.52%, whereas for KRZ Odessos the price effect will be BGN 2.50 or 2.78%. At a quoting step of BGN 0.001 the price effect would be 0.001% and 0.006% respectively.

As seen by the results, the market impact strongly increases with purchases or sales that are in excess of the normal market. This effect is of particular importance to institutional investors who hold strong investment positions. Losses for them grow strongly in high volume deals through market orders, which greatly increases their transaction costs.

According to the Regulation, the quote step regime only defines the minimum difference between two price levels of the orders made in relation to a financial instrument in the order book. Therefore, it should apply equally regardless of the currency of the financial instrument. This means that the price of a company traded on the Bulgarian stock market will bear a different spread, traded in Bulgarian levs and in euro, after joining the euro area. For example, Sopharma is traded at BGN 4.22 on January 30, 2018. The company has a liquidity band 2, which means that at a price between BGN 2 and BGN 5, the quote is 0.01. This BGN 0.01 represents exactly 0.24% of the stock price. Following the expected accession of Bulgaria to the Eurozone in the foreseeable future, the price of Sopharma will be determined in euro. With an unchanged EUR-BGN exchange rate, the company's current market price will be EUR 2.16. The quote step, however, will now be set not to BGN 0.01, but to EUR 0.01, which represents exactly 0.46% of the issue price, so the negative effects of the quotation steps will be further enhanced.

When the problem is considered in terms of the profit of the positions, then the percentage ratio of the possible spread to the profit amount becomes significant. In case of a forced sale due to liquidity reasons or changed investment decision, the margin of 0.005 represents exactly 0.12% of the value but exactly 100% of the profit if a decision is taken to sell at a price of 4.225 BGN. The example with First Investment Bank is more extreme. As of

February 5, 2018, the company traded at a price of BGN 5.94 and with a liquidity band 2 and a price between BGN 5 and BGN 10, the quote step was BGN 0.02. This quote step represents 0.34% of the value. If the stock could not be sold at a price of BGN 5,959 (as would be possible without regulation), the investor loses 0.32% of the deal. The old regulation allowed a profit of 0.32% of the position, but the current one imposes a sale at a price of 5.94 BGN (the same as the purchase price), then all transaction costs remain at the expense of the investor.

If the potential profits of 0.12% to 0.32% do not look valuable, the comparison of these percentages with the current interest rates on bank deposits of 0.10% and lower gives a more accurate picture of the magnitude of the impact. Under the current money market conditions, earnings between 0.12% and 0.32% are many times higher, especially if realized not for a year but for hours. Obviously, the liquidity bands and quote steps deprive investors of the ability to trade at low margins, and thus denies the daily trading of securities.

Data analysis confirms increases in volatility, spreads and price impacts. These indicators form market liquidity and their high values greatly reduce it. In turn, volatility is a measure of uncertainty, and high uncertainty leads to the cessation of trade and effective price formation. The high uncertainty, combined with the expected high market impact, is detracting from the attractiveness of each financial instrument market. The low attractiveness, combined with low market liquidity, determines the capital market as poor and unfeasible for the national economy.

6. Conclusion

The complex legal framework applied to the new and illiquid Bulgarian financial instruments market is far too inadequate. It creates significant problems for both issuers and investment firms, investors, the regulated market operator. The application of such restrictions requires the administrative capacity of the supervisory authority, which is not inherent in the emerging markets. Modern regulations, intended for old and liquid capital markets, have negative effects on new markets. These include:

- Over-regulation of the investment process, which ultimately leads to institutional failure in the application of complex norms and in practice to a reduction in the real protection of minority shareholders;
- Bilateral restriction of access deprives public companies of capital through the national capital market, and investors – of qualitative investment assets; the redirection of national capital to foreign capital markets takes away funds from the national economy;
- Sophisticated regulations increase the number of regulated transactions, which causes both supervisory errors and high transaction costs for all market participants and market infrastructure institutions;

- The introduced quotation steps deepen the problems of the young Bulgarian market, further reducing its attractiveness and liquidity by artificially raising the values of the indicators of uncertainty, volatility and level of transaction costs.

References

Barclay, M. J. and Holderness, C.G., 1989. Private benefits from control of public corporations. *Journal of Financial Economics, 25(2), pp. 371-395.*

Barclay, M. J. and Holderness, C.G., 1991. Negotiated block trades and corporate control. *Journal of Finance, 46(3), pp. 861- 878.*

Brunnermeier M. and Pedersen, L., 2007. Market Liquidity and Funding Liquidity. Available at: National Bureau of Economic Research, http://www.nber.org/papers/w12939, pp. 1-36, (Accessed 2014).

Brunnermeier, M., Nagel, S. and Pedersen, L., 2008. Carry trades and currency crashes. Available at: National Bureau of Economic Research, http://www.nber.org/ papers/w14473.pdf, pp.1-36, (Accessed 2014).

Bruno, V. and Claessens, S., 2007. Corporate governance and regulation: can there be too much of a good thing? *Paper presented to the World Economy and Finance Workshop, University of Amsterdam, October 2007, pp.1-50.*

Caprio, G. Jr., 1995. Bank Regulation: The Case of the Missing Model. *Conference volume Brookings/KPMG conference on the Sequencing of Financial Reforms, pp.109-260.*

Chordia, T., Roll, R. and Subrahmanyam, A., 2002. Order Imbalance, Liquidity, and Market Returns. *Journal of Financial Economics 65 (1), pp. 111-130.*

Coase, R. H., 1992. The Economic Structure of Production. *American Economic Review 82(3),pp. 713–719.*

Coase, R.H., 1937. The Nature of the Firm. *Economica 4(16), pp. 386 – 405.*

Copeland T. E. and Galai, D., 1983. Information effects on the bid-ask spread. *Journal of Finance, 38(5), pp. 1457 - 1469.*

Demsetz, H., 1968. The Cost of Transacting. *Quarterly Journal of Economics 82, pp. 33-52.*

Diamond, S. and Kuan, J., 2012. The Importance of Institutional Design: Evidence from the New York Stock Exchange IPO and Reg. Available at: Social Science Research Network, http://ssrn.com/abstract=1987275. (Accessed 2015).

Domowitz, I., Glen, J. and Madhavan, A., 2001. Liquidity,Volatility and Equity Trading Costs Across Countries and Over Time. *International Finance 4,2, pp. 221–255.*

Easley, D. and O'Hara, M., 2010. Liquidity and Valuation in an Uncertain World. *Journal of Financial Economics 97, pp. 1–11.*

Endo, T. and Ghon Rhee, S., 2006. Margin Purchases and Short Sales in Emerging Markets: Their Rationales and Design Variables. Available at: Social Science Research Network, <http://ssrn.com/ abstract=1327309>, (Accessed 2015).

Frost, C. A., Gordon, E. A. and Hayes, A. F., 2002. Stock Exchange Disclosure and Market Liquidity: An Analysis of 50 International Exchanges. Social Science Research Network, Available at: http://papers.ssrn.com /sol3/papers.cfm ?abstract_id=355361, (Accessed 2015).

Glosten, L. R. and Milgrom, P.R., 1985 . Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. *Journal of Financial Economics, 14(1), pp. 71-100.*

Ho, T. and Stoll, H.R., 1981. Optimal Dealer Pricing Under Transactions and Return Uncertainty. *Journal of Financial Economics 9, pp. 47-73.*

Jordanov, J., 2009. Finansovi investicii. *Lotos 23.*

Litvak, K., 2007. Sarbanes-Oxley and the cross-listing premium. *Michigan Law Review, 105, pp. 1857-1898.*

Mikkelson, W. and Regassa, H., 1991. Premiums paid in block transactions. *Managerial and Decision Economics, 12(6), pp. 511-517.*

Moravenov, M., 2004. Razvitie na fondovya pazar v Bulgaria i nasoki za podobriavane na negovata efectivnost. *Siela.*

Naydenova, K., 2016. Vazmojnosti za prilojenie na institucionalnya podhod pri izsledvane na pazarnata likvidnost (na primera na balgarskya fondov pazar). Disertacya, Katedra Finansi, *UE Varna*.

North, D., Wallis, J.J. and Weingast, B.R., 2006. Violence and Social Orders. A Conceptual Framework for Interpreting Recorded Human History. *Cambridge University Press, pp.3-325.*

Popov, T. and Sedlarski, T., 2012. Institucionalen Ikonomix. Vazmojnosti I potencial. Universtity of Sofia.

Rafailov, D., 2017. Problemi pri reguliraneto na grupovoto finansirane sas sobstven capital. Ikonomikata v promenyashtiya se sviat – nacionalni, regionalni I globalni izmerenya: IPS-2017, Sbornik dokladi ot VIII mejd.nauchna konferencya, 12 may 2017, Varna: Nauka I ikonomika, pp. 175-184.

Sedlarski, T. 2008. Tranzakcionni razhodi I Ikonomicheski Rastej. *Statistica 2, pp. 18-36.*

Stoll, H. R., 1978. The supply of dealer services in securities markets. *Journal of Finance 33, 1133-1151*.

Williamson, S. D., 1987. Financial Intermediation, Business Failures, and Real Business Cycles. *Journal of Political Economics, 25(6), pp. 1196-1216.*

Appendix A

Possible price impact for the two different regimes of quote steps, data by January 2018

Sopfarma Plc	New regulation	Old regime	**CCB Plc**	New regulation	Old regime
Price to 09.02.2018	BGN 4.080	BGN 4.080	Price to 09.02.2018	BGN 1.940	BGN 1.940
Tick size	BGN 0.010	BGN 0.001	Tick size	BGN 0.005	BGN 0.001
possible bid prices	Tick size BGN 0.01	Tick size BGN 0.001	possible bid prices	Tick size BGN 0.005	Tick size BGN 0.001
	BGN 4.070	BGN 4.079		BGN 1.935	BGN 1.939
	BGN 4.060	BGN 4.078		BGN 1.930	BGN 1.938
	BGN 4.050	BGN 4.076		BGN 1.925	BGN 1.937
	BGN 4.040	BGN 4.075		BGN 1.920	BGN 1.936
	BGN 4.030	BGN 4.074		BGN 1.915	BGN 1.935
Gross market impact	1.23%	0.15%	Gross market impact	1.29%	0.26%
FIB Plc	New regulation	Old regime	**Ind. Holding Bulgaria Plc**	New regulation	Old regime
Price to 09.02.2018	BGN 5.420	BGN 5.420	Price to 09.02.2018	BGN 1.010	BGN 1.010
Tick size	BGN 0.020	BGN 0.001	Tick size	BGN 0.005	BGN 0.001
possible bid prices	Tick size BGN 0.02	Tick size BGN 0.001	possible bid prices	Tick size BGN 0.005	Tick size BGN 0.001
	BGN 5.400	BGN 5.419		BGN 1.005	BGN 1.009
	BGN 5.380	BGN 5.418		BGN 1.000	BGN 1.008
	BGN 5.360	BGN 5.417		BGN 0.995	BGN 1.007
	BGN 5.340	BGN 5.416		BGN 0.990	BGN 1.006
	BGN 5.320	BGN 5.415		BGN 0.985	BGN 1.005
Gross market impact	1.85%	0.09%	Gross market impact	2.48%	0.50%
Neohim Plc	New regulation	Old regime	**FNIB REIT**	New regulation	Old regime
Price to 09.02.2018	BGN 46.600	BGN 46.600	Price to 09.02.2018	BGN 1.940	BGN 1.940

Tick size	BGN 0.200	BGN 0.001	Tick size	BGN 0.010	BGN 0.001
possible bid prices	Tick size BGN 0.20	Tick size BGN 0.001	possible bid prices	Tick size BGN 0.01	Tick size BGN 0.001
	BGN 46.400	BGN 46.599		BGN 1.930	BGN 1.939
	BGN 46.200	BGN 46.598		BGN 1.920	BGN 1.938
	BGN 46.000	BGN 46.597		BGN 1.910	BGN 1.937
	BGN 45.800	BGN 46.596		BGN 1.900	BGN 1.936
	BGN 45.600	BGN 46.595		BGN 1.890	BGN 1.935
Gross market impact	2.15%	0.01%	Gross market impact	2.58%	0.26%
Monbat Plc	New regulation	Old regime	**M+S Hydravlik Plc**	New regulation	Old regime
Price to 09.02.2018	BGN 10.200	BGN 10.200	Price to 09.02.2018	BGN 7.800	BGN 7.800
Tick size	BGN 0.010	BGN 0.001	Tick size	BGN 0.050	BGN 0.001
possible bid prices	Tick size BGN 0.01	Tick size BGN 0.001	possible bid prices	Tick size BGN 0.05	Tick size BGN 0.001
	BGN 10.190	BGN 10.199		BGN 7.750	BGN 7.779
	BGN 10.180	BGN 10.198		BGN 7.700	BGN 7.778
	BGN 10.170	BGN 10.197		BGN 7.650	BGN 7.777
	BGN 10.160	BGN 10.196		BGN 7.600	BGN 7.776
	BGN 10.150	BGN 10.195		BGN 7.550	BGN 7.775
Gross market impact	0.49%	0.05%	Gross market impact	3.21%	0.32%
Stara planina Hold Plc	New regulation	Old regime	**Albena Plc**	New regulation	Old regime
Price to 09.02.2018	BGN 7.700	BGN 7.700	Price to 09.02.2018	BGN 59.000	BGN 59.000
Tick size	BGN 0.050	BGN 0.001	Tick size	BGN 0.500	BGN 0.001
possible bid prices	Tick size BGN 0.05	Tick size BGN 0.001	possible bid prices	Tick size BGN 0.50	Tick size BGN 0.001
	BGN 7.650	BGN 7.699		BGN 58.500	BGN 58.999
	BGN 7.600	BGN 7.698		BGN 58.000	BGN 58.998
	BGN 7.550	BGN 7.697		BGN 57.500	BGN 58.997
	BGN 7.500	BGN 7.696		BGN 57.000	BGN 58.996
	BGN 7.450	BGN 7.695		BGN 56.500	BGN 58.995
Gross market impact	3.25%	0.06%	Gross market impact	4.24%	0.01%
Chimimport Plc	New regulation	Old regime			
Price to 09.02.2018	BGN 2.470	BGN 2.470			
Tick size	BGN 0.010	BGN 0.001			
possible bid prices	Tick size BGN 0.01	Tick size BGN 0.001			
	BGN 2.460	BGN 2.469			
	BGN 2.450	BGN 2.468			
	BGN 2.440	BGN 2.467			
	BGN 2.430	BGN 2.466			
	BGN 2.420	BGN 2.465			
Gross market impact	2.02%	0.20%			

Source: Own calculations