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SCIENTIFIC COMMITTEE

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PAPERS

Papers

REMUNERATION IN THE SINGNIFICANT EUROPEAN BANKS

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ABSTRACT

The unregulated remuneration of banking top management was one of the causes of the financial crisis emerged in 2007-2008. The compensation systems did not take the long term risks of crediting into account. However, risks hidden in excessive risk taking fundamentally determines the banking future return. Numerous bodies defined their expectations to reform the implemented practice concerning remuneration in the banking system. We overview such principles, standards, recommendations, regulations and directives that were given by different international bodies and analyse the main elements of the remuneration policies compiled by the European top banks.

Keywords: remuneration, material risk takers

JEL codes: G20, J31

1 Introduction

The Global financial stability report of *IMF [2014]* marked the excessive risk taking in the financial sector as one of the main causes of the global financial crisis. The causes were various, but there is general agreement in the financial industry, the public sector, and academia that incentive structures of the top management played an important role in excessive risk assumptions.

Nevertheless, according to the empirical study of *Ayadi and Boujelbene [2012]*, the CEOs (Chief Executive Officers) remuneration has a negative and statistically significant impact on the insolvency risk. In other words, the higher level of the remuneration of the CEOs generates lower level of insolvency.

On the contrary, *Uhde [2015]* employed compensation data provided by 63 banks from 16 European countries in the period from 2000 to 2010 and empirically investigated the impact of excessive variable compensation on bank risk. As a main finding, the researcher provided evidence for a risk-increasing effect originated from excessive variable remuneration provided for material risk takers. The main different in the two above introduced consequences is that finding of Ayadi and Boujelbene regards CEOs while Uhde dealt with material risk takers.

In *Murphy [2013]* opinion the new EU regulations concerning remuneration will increase rather than decrease incentives for excessive risk taking. Also, the new rules generate significant increase in fixed remuneration and reduce incentives to create value. Therefore, the competitiveness of the banking system of European Union will fall and the cost of capital will be higher in this area.

In *Cullen and Johsen [2015]* opinion the reform concerning remuneration of material risk takers is incomplete. Based on the lesson of Iceland banks, they propose a mandatory 7-10 years deferral period for vesting significant part of the variable compensation.

2 Legal reform of remuneration systems

2.1 Principles of Financial Stability Forum

In order to promote stability of the international financial system, G7 Ministers and Governors endorsed the creation of the Financial Stability Forum (hereinafter FSF) in 1999. After a decade, the FSF issued its Principles for Sound Compensational Practice (Financial Stability Forum [2009]). In FSF opinion, the implemented compensation system of the significant financial institutions is one factor among many that contributed to the financial crisis that began in 2007. The short term profit realization led banks to pay generous compensation to the employees while the quality of long term risk taking was ignored. The prevention of the similar situation was the main goal of defining the principles.

Principles are grouped in three categories.

The first group defines expectations concerning effective governance of compensation. The management of the banks should actively overview the implemented compensation system and its operation. The compensation system should be revised by the relevant board members and employees having experience in risk management. Also, the bank's board of directors must monitor and review the compensation system to ensure the system operates as intended. Furthermore, control mechanisms are also to be implemented in the compensation system.

The second group of principles expects alignment of the compensation with prudent risk takings. All types of risks are to be taken into account in the compensation system and the compensation level should be dependent variable of the risks taken. Furthermore, vesting the variable compensation should depend on long term risks. In other words, compensation related to risks taken over different periods of time is to be paid according to the risk period. Also, the compensation form such as cash or equity must be connected to the risks.

The last part of principles is related to the supervisory oversight which must be rigorous. Deficiencies revealed are to be immediately corrected by remedial actions and the risk assessment should include examination of the risks hidden in the compensation system. Moreover, banks should disclose their compensation practice.

2.2 Standard of Financial Stability Board

As successor of the Financial Stability Forum, the Financial Stability Board (hereinafter FSB) commenced its activity in April 2009. After some months, the FSB issued the implementation standards of the above introduced compensation principles (Financial Stability Board [2009]).

The FSB standards expect banks bearing significant system risk to create remuneration committee as integral part of the governance system. The committee should enable to make independent judgement on compensation system and practice. In so doing, the committee should evaluate the design based on which compensation will be paid concerning future income of the bank. The remuneration committee should ensure that the implemented compensation system is to be in compliance with the principles listed above and with the related standard of Basel Committee on Banking Supervision (hereinafter Basel Committee).

According to the implementation standard of the FSB, the variable compensation must depend on risks taken and the national supervisory authorities should limit variable compensation to be paid to the managers of significant financial institution as a percentage of the total net revenue if it is inconsistent with the maintenance of the sound capital base.

In case of senior executives and employees having significant effect on the risk exposure of the bank, the following restrictions are expected:

- Significant part of the remuneration should be variable. The portion is not determined.
- Significant part of the variable compensation, such as 40 to 60 percent, should be payable under deferral arrangement over years.
- The higher level of seniority the higher level of deferral arrangement (e.g. more than 60 percent).
- Deferral period should not be less than three years in line with the risk nature.
- Significant part of the variable compensation, such as more than 50 percent, should be paid in shares or in other share-linked instruments. These awards should be subject to share retention policy. However, the standard does not expect splitting the share based remuneration into non-deferred and deferred parts.
- The remaining part of the deferred remuneration can be paid in cash. In spite of this, if the financial performance of the bank ruins in the payment period, the unvested part of the cash must be retained.
- In case the government has to intervene to stabilize or bail-out the firm, the supervisory authority should have ability to restructure the compensation system.
- Providing minimal (guaranteed) bonus is acceptable in case of new contract but it can be used for the first year of the employment.

Suppose a Chief Financial Officer, who is member of the Management Board of a bank, is awarded with 1000 unit compensation for year 2014. Let's see an example how the bank could pay the compensation based on FSB standard (fictive data):

Table 1 Example for compensation based on FSB standard

Title	Amount (unit)
Compensation	1,040
Fixed part	520
Variable part	520
non deferred part (40%)	208
deferred part (60%)	312
deferred part to be paid after one year, out of which 33 unit in shares	60
deferred part to be paid after two years, out of which 38.5 unit in shares	70
deferred part to be paid after three years, out of which 44 unit in shares	80
deferred part to be paid after four years, out of which 56,1 unit in shares	102

Source: Fictive data, own calculation

The Chart 1 shows the distribution of the 1040 unit compensation accepting the portions listed above.

Chart 1 Distribution of the compensation

- ■ Fixed part
- ■ Variable non deferred part
- ■ Variable deferred part to be paid after 1 year
- ◐ Variable deferred part to be paid after 2 years
- ▦ Variable deferred part to be paid after 3 years
- ≡ Variable deferred part to be paid after 4 years
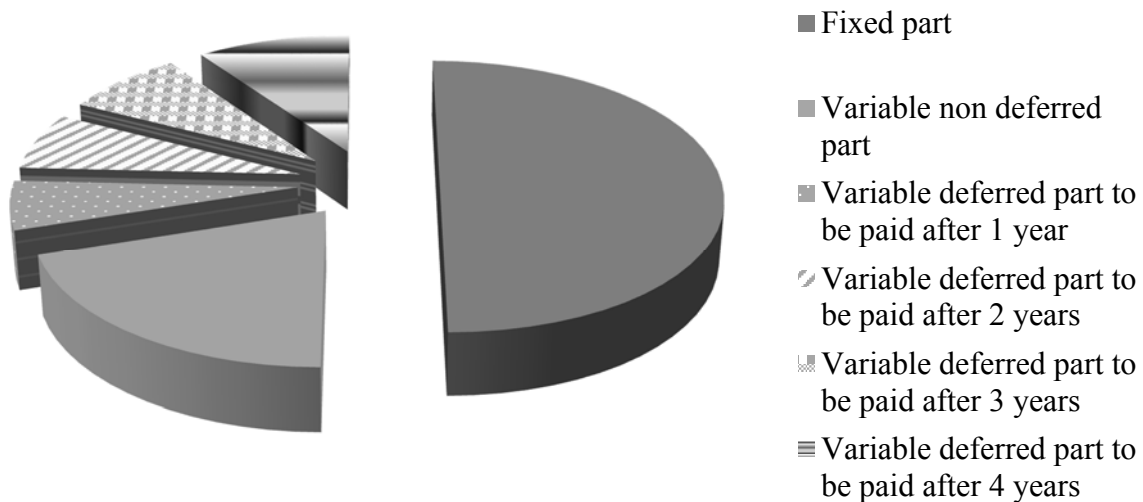
Source: Fictive data, own calculation

According to the standard, the following information should be disclosed concerning remuneration:

- Decision making process defined in the remuneration policy. Also, the mandate of the remuneration committee should be disclosed.
- The main elements of the compensation system including criteria applied in the performance measurement and risk adjustment. The connection between the remuneration and performance, the deferral policy, vesting criteria as well as the used payment types are also to be disclosed.
- The aggregated awarded compensation.

The supervisory authority should require significant financial institutions to show how the applied remuneration system takes the risks into account.

2.3 Expectation of Basel Committee on Banking Supervision

2.3.1 Compensation Principles and Standards Assessment Methodology

The Compensation Principles and Standards Assessment Methodology (Basel Committee on Banking Supervision [2010]) aims to determine guideline to supervisors for examination of banks' remuneration system and support evaluate the banks' compliance with the FSF and FSB Principles and Standards. The methodology supports the implementation of the prudent compensation practices at banks.

The following principles should be taken into account by the supervisors when evaluating the remuneration system of the supervised banks:

1. The remuneration system should be overseen by the top management of the bank. The assessment methodology expects (as it is also determined in the FSF's principles) that the compensation system should not be revised primarily by the CEO of the bank but by the relevant board members and employees having experience in risk management.

2. The remuneration system should be monitored and revised by the top management of the bank.

3. Employees in risk control area should be compensated in such a way, where their remuneration is independent of the performance of the professional areas they monitor and their compensation should be commensurate with their key role.

4. The compensation should depend on all types of risk, where both quantitative and qualitative measures should play a role in determining risk adjustments.

5. Compensation system should link the performance of the bank.

6. Payment of the compensation should depend on time horizon of the risks, in other words payment of variable compensation should be deferred based on the risks taken.

7. The different compensation forms, such as cash, shares and shares equivalent, should depend on the assumed risks.

8. Supervisory review of the compensation system of the bank should be rigorous.

9. Banks should disclose information on their compensation system and practice.

2.3.2 Range of Methodologies for Risk and Performance Alignment of Remuneration

The Range of Methodologies for Risk and Performance Alignment of Remuneration (Basel Committee on Banking Supervision [2011a]) analyses the methods applied by banks for incorporating risk into compensation pools and individual compensation schemes. Banks could use numerous methods when implementing remuneration system. It must be done by taking the risk and performance into account. Depending on the remuneration systems' design and features, the effectiveness of these methods varies significantly. Therefore, the Basel Committee specified its expectation concerning remuneration methods.

2.3.3 Pillar 3 disclosure requirements for remuneration

The main goal of additional Pillar 3 requirements on remuneration (Basel Committee on Banking Supervision [2011b]) is to make available for users the banks' remuneration design and practices: significant banks are required to disclose information concerning their remuneration system. Information should relate to the remuneration so called material risk takers (hereinafter MRTs) having significant effect on risk taking.

The following data are to be disclosed:
- bodies that oversee remuneration;
- structure of remuneration processes;
- method by which risks are taken into account in the remuneration system;
- ways in which the bank links the level of performance with levels of remuneration,
- methods by which the bank adjusts remuneration based on longer-term performance;
- different forms of variable remuneration;
- number of meetings held by remuneration committee and the awards provided for the committee members;
- number of employees who received compensation during the financial year;
- amount of the compensation awarded during the financial year;
- data on deferred remuneration;
- forms of remuneration.

2.4 Recommendations of European Commission

In 2009, the European Commission specified its expectations concerning directives to be used when implementing the remuneration systems at financial institutions (European Commission [2009]). According to the recommendations, such remuneration policy must be implemented

at a financial institution which is in compliance with the strategy, goals, risk management and interest of the institution. The remuneration system could not incite to excessive risk taking. The Commission recommends making balance between the fixed and variable compensation and the variable part should be limited. Certain part of the bonus should be retained and it should be dealt as deferred compensation. Vesting the variable compensation can be done in form of shares, options, cash or other financial instrument. When determining the variable compensation part, the assessment of the performance should be based on long term approach. In other words, the assessment should be based on long term performance. In Commission expectation, the remuneration of directors should be approved by the supervisory board as well as by the management board. As it is defined in the FSB's expectation, the members of remuneration committee should have proper profession knowledge and experience. According to the Commission's expectation, the remuneration policy should be revised annually. Furthermore, the main elements of the remuneration of the financial institutions are to be disclosed, criteria used in performance assessment should be introduced. Also, the conditions of bonus awarding should be specified.

2.5 Capital Requirement Regulation and the related Directive (CRR/CRDIV)

The Regulation on prudential requirements for credit institutions and investment firms (European Parliament and Council [2013a]- hereinafter Regulation) and Directive on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (European Parliament and Council [2013b]-hereinafter Directive) also deal with remuneration of the banks. The earlier introduced expectations were not obligatory for certain European banks but the Regulation and Directive specify single compulsory rules to be used by each European bank. According to the Regulation, the decision making process concerning remuneration, the constitution of the remuneration committee and the number of session held by the committee should be disclosed. The credit institution should introduce the link between performance of the bank and the applied remuneration system, the main elements of the remuneration system, the tools of performance assessment, the risk generated correction methods and the rules concerning deferred compensation. According to the Regulation, the ratio of the fixed and variable remuneration as well as the conditions of awarding shares, options or other financial instruments should be disclosed. Also, the amount of the remuneration awarded in the given financial year is to be specified as per activity types. The aggregated amount of the top management and employees having significant effect on the risk profile of the bank must be disclosed, too. Among others, the following information is required to be given:

- amount of the fix remuneration in the given financial year;
- amount of the variable remuneration in the given financial year;
- the number of employee having received bonus;
- the combination of variable compensation (cash, shares, assets connecting to shares, other remuneration forms);
- amount of the deferred compensation.

As a new approach, credit institutions bearing significant financial system risks should give the above listed data as per persons regarding members of management bodies and MRTs.

The Directive deals with the remuneration in more detailed form. According to the Directive the remuneration could be split into two main parts. The first part of the compensation is the fixed base salary. It mirrors the professional experience of the employees in question as well as the functions fulfilled by them. The second part of the compensation is based on performance and variable. Generally, the variable part could not be higher than the fixed part.

In other words, the variable compensation could not be higher than 100 % of the fixed part. However, the general meeting has right to define higher portion. Even if higher portion has been approved, its measure must be lower than 200% of the fixed part.

When terminating a contract, the related award should be in line with the related risk levels.

According to the Directive, at least 40% of the variable remuneration is to be paid at least in 3-5 years deferred period. Furthermore, the deferred part could be vested if the financial situation of the credit institution allows it and if it is reasonable based on the performance of the institution, the organizational unit and the employee.

3 Remuneration policies of top 5 European banks

In order to analyse how the banks apply the new rules we overviewed five large European bank's remuneration policies. The selected banks were the followings: HSBC Holdings, BNP Paribas, Barclays, Deutsche Bank, Crédit Agricole. Though, the sample is extremely low, the aggregated balance sheet total of the selected banks is amounted to 9,288,524 million euro as of 31/12/2014 which is 26.02% of the aggregated balance sheet total of the whole bank sector in the European Union. As for net interest income, end of the year 2014 data concerning United Kingdom were not available in Statistical Data Warehouse of European Central Bank at the time of compiling the paper. Therefore, in order to compare available data, we used data as of 31/12/2013. The aggregated net interest income of the analysed banks is amounted to 86,653 million EUR which is 19.95% of the aggregated net interest income of the whole bank sector of the European Union.

The compensation systems are generally determined by the Board of Directors and are based on the proposal of the Compensation Committee. According to the remuneration policies of the analysed banks, relevant part of the fixed pay is the base salary paid monthly in cash. It is determined on annual level and against relevant comparator group. It compensates employees for their skills, experiences and competencies, in other words this item is not connected with individual performance. The fixed pay might also be vested in cash and in share based remuneration. However, the ratio of the cash based and the share based fixed remuneration is different at different banks.

The calculation of variable compensation derives from data on annual performance combined with the impact of the risk profile. Furthermore, it is a widely applied policy that performance-based compensation depends on annual, collective and long term components.

Bonuses are determined by quantitative and qualitative criteria as follows:

Qualitative factors
- foresight
- decision-making
- management skills
- exemplary qualities
- purpose and link to strategy

Quantitative factors
- revenue
- cost of risk (impairment and provision)
- income before taxes
- ratio of net income

- ratio of earning per share
- Tier 1 capital ratio
- liquidity ratios
- cost income ratio

As it was mentioned above, the annual variable compensation depends on the risk profile based on components such as economic and non-economic factors. They equally contribute to the determination of the annual variable remuneration.

All of the analysed banks intend to provide shares for their employees as part of the variable remuneration. The long term incentives are designed to ensure performance-based payments over several years, usually 3-5 years. The policies include control points so as to avoid ambitions of executive and non-executive directors to give priority to their own interest against the interest of financial institutions. In some cases, the bank has right to claw-back the vested remuneration.

4 Conclusion

According to the new rules on compensation of material risk takers, remuneration committee should overview the implemented remuneration system of the bank registered in the European Union, number of session held by the committee, the link between performance and compensation of banking managers and the actual cumulated data on fixed and variable remuneration should be disclosed.

The variable compensation must not be higher than double of the fixed compensation and certain part of the variable award should be deferred.

In case of the analysed banks, relevant part of the fixed pay is the base salary paid monthly in cash but the ratio of the cash based and the share based fixed remuneration is different at different banks. The variable compensation mainly depends on annual and long term performance as well as on taken risks. The variable compensation is determined by quantitative and qualitative criteria.

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RISKS AND FINANCIAL STATEMENTS OF INSURANCE COMPANIES

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ABSTRACT

The mechanism of the market economy is linked to the existence of risk and uncertainty. This contribution represents risks and uncertainties that are integral to the business of insurance. In this article we will focus on capture of risks in the insurance contract, the reporting of insurance contracts. The final section indicates a change in national and supranational legislation reporting of insurance companies. In the national legislation is it the Law on Accounting. In the multinational adjustments are especially expected changes in accounting and reporting for insurance contracts under IFRS.

Keywords: risk, financial risk, insurance risk, regulatory risk, financial statement of insurance companies

JEL codes: M40

1 Introduction

The mechanism of functioning of a market economy is closely linked to the existence of risks and uncertainties in the business. In terms of preserving true and fair view, those facts necessarily reflected in the accounts of individual businesses operating in the market, insurance companies no exception. The aim of this paper is to point out the view of risk in the financial statements of insurance companies. To achieve this objective are necessary to display risk in the accounts pursuant to regulatory risk, defined terms such as financial risk, insurance risk.

2 Data and Methodology

In the processing of paper are used standard methods of research, such as the selection, analysis and synthesis, presenting basic methodological approach to dealing with issues. Acquired knowledge form a new, higher level of knowledge of research issues. At the end of the article are those opinions, thereby stressing the importance of risk in the data presented in the financial statements of insurance companies.

3 Risks

The risk generally associated with the development of adverse situations that may occur, and the unfavorable situation is usually associated with loss. The risk in finance is a specific type of risk is the volatility of potential losses or gains associated with the ownership of certain assets and liabilities [1]. With such kind of risk - at financial risk - it is defined in the risk of unexpected losses, associated with the regulation of risk capital invested.

Risks can be divided according to their different nature, e.g.: market risk (interest rate, currency, equity, commodity, credit spreads risk, correlation), credit risk (direct credit, credit equivalents, changes in credit ratings, credit exposure), liquidity risk (market liquidity, funding), operational risks (transactional, operational management system), the legal risk (the legality of contracts, legal forms of documentation, fulfillment of regulatory measures).

To ensure the safety of the financial system is necessary to define not only the risk, but it also regulated. Regulation risks ensure the reduction of losses due to unexpected events specific risks, which may be made self-insurance or spread risk on several subjects. Self-insurance loss is replaced own resources respectively credit, the disadvantage of this method is the earmark of own resources. The agreement on mutual assistance and the creation of joint funds to cover losses, or insurance the insurance institutions, the risk extends to several subjects.

One acceptable means of regulating the risks of its transfer to the insurance company, an insurance contract. Because the insurance company does not accept any such risk, insurance risk, it is important to define when risks are deemed to insurance risk [2] .In terms of international Financial Reporting Standards for the preparation of financial statements IFRS 4 - Insurance contracts, insurance risk is defined as risk, other than financial risk, transmitted by the holder of the contract to the insurer. Such risks include, for example .: moral, water, transportation, natural hazard, theft and vandalism, business interruption, lost profits, machinery, agricultural, nuclear, environmental.

3.1 Insurance and financial risk

Ensuring coverage of future losses connected with present risks, expresses the desire to transfer risks from insurance markets, capital markets, and capital resources are derived emissions linked securities insurance, so securitization of insurance risk. The emission is carried out for example in the form of:

- Insurance bonds (catastrophe bonds that are high profitability with the risk of default in case of natural disasters);

- Insurance derivatives:

  - Insurance swaps (exchange insurance contracts with similar parameters in order to diversify the portfolio, or replacing mobile payments dependent on the insurer's claims ratio for a predetermined price)

  - Insurance Futures (loss increase insurance benefits by using profits from the futures price increase on the capital market)

  - Premium option (the option's earnings is based on the actual value of the claims ratio in the option premium).

Since insurance policies are based on the receipt of insurance risk (other than financial risk) by the holder (the insured) to the insurer (insurance companies), insurance contracts are not among the financial derivatives.

Insurance contracts may in some cases also contain certain financial risk. Such agreement, which transfer insurance risk from the policyholder to the insurance company is not significant, but primarily carries the financial risk, are designated as investment contracts. Insurance risk is a specific case of financial risk. For this reason, we will deal with the next part financial risk and its regulation.

3.2 Regulatory risk

Regulating financial risks mainly refers to financial institutions, such as banks, insurance companies. Underestimating the unfavorable situation in these institutions should have an impact on all users of services of financial institutions, so it is important to ensure capital adequacy, which is an essential feature ensuring coverage of future losses connected with present risks.

The capital adequacy of financial institutions is provided by the state, for example by setting minimum solvency margin. For other business entities are determination of capital adequacy based primarily on decisions of the entity.

Tools to ensure capital adequacy consists of not only the ownership of assets (tangible or intangible) but also contracts implying receivables and payables, which can be divided into non-derivative or derivative. The non-derivative instruments include, for example: purchase or sale of bonds, purchase or sale of one currency for another, purchase of shares - if the settlement takes place in spot. Derivative instruments are based on a settlement based on a predetermined future dates. It can conclude that not only insurance derivatives, but derivatives in general are among the challenging area of financial management. Specific attention, in addition to defining the various types of derivatives, must be given to the measurement and recognition.

3.3 Financial satements of insurance compny

For imaging needs of individual facts in the books, it is necessary to know the moment at which the captures that fact at the time of initial measurement (contract date) or at the time the following awards (e.g. the date on which the financial statements) [3]. At the time of initial measurement, derivatives are measured at cost. The entity can watch them on off-balance sheet, balance sheet and result accounts, depending on the moment of their "life" in the entity.

At the time of the next valuation, derivatives are measured at fair value (market price, resp.) It is estimated either with an impact on results of operations or the impact on equity, depending on the type and method of valuation of the derivative.

In the case of insurance companies that prepare financial statements in accordance with International Financial Reporting Standards. In this case, it is not a given data structure, method of presentation is the financial unity. The entity is required to take into account the expected risks and losses relating to assets and liabilities, if known at the balance sheet date [5]. Of the Accounting Act entails the accounts of a lower loss, regardless of whether profit or loss, gain or loss. Taking account of the perceived risk and uncertainty in financial management is reflected in addition to the use of derivatives and other instruments that are reserves and provisions.

4 Conclusions

The risk (or uncertainty) is the essence of an insurance contract. At the entry into force of the insurance contract, the risk is related to the following factors: whether an insured event will occur; where the harmful event occurred or how much the insurer will need to pay if it occurs. Therefore, the accounting and reporting of insurance contracts are not only important but also difficult area.

The issues of insurance policies are regulated by the International Financial Reporting Standard IFRS 4 Insurance Contracts, which is currently undergoing revision. The final version of the standard will not only modify the accounting for insurance contracts, but will modify the presentation of results of operations, which undoubtedly ensures comparability in assessing the performance of insurance companies and their riskiness. The most significant changes to be considered:

- Changing the structure of the profit;

- The most important revenue item is not insurance, but revenue from insurance contracts, which will include insurance to cover the damage, acquisition costs, administrative costs, margins contracted services;

- Premium for investment component that can not be separated from insurance contracts are not recognized in income;

- Increases the demand on the amount and details of the disclosures in the notes to the financial statements (analysis of changes in assets and liabilities from insurance contracts to cover future claims and damages, risk margins and contract for services and so on.

The issue of risk is for entities, including insurance companies, an important indicator. For this reason, insurance companies are required to include a description of the main systems of internal control and risk management with respect to the financial statements. This requirement is necessary within the meaning of the Accounting Act of 1/1/2016 (Article 20).

Changes that insurers expect will be challenging but ultimately very helpful. The revision takes into account the existing standard IFRS 9 Financial Instruments, which will take effect from 1 January 2018. The adoption of the standard will increase the comparability of data presented in the financial statements, which will enable data users of financial statements to take decisions with the lowest risk associated with the provision in the case embodiments of the adverse event (the insured party) or investment funds (on the insurer party).

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NEW LOCAL TAXES AND FINANCING SYSTEM IN HUNGARY

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ABSTRACT

The present study investigates the role and significance of local taxes within the financial system of municipalities. It seeks an answer to the question to what extent the new financial form - as a result of tax-consolidation- and the potential new, as well as old local taxes serve the sustainability of the system and help its shift towards a more autonomic economy. Another emerging issue to be discussed is how the switch to task-financing changes the role of the local business tax, concerning wealthier and poorer municipalities.

Keywords: State and Local Taxation; Local Government Subsidies and Revenues; Local taxes, Settlement taxes, Municipalities, Financing,

JEL code: H710

1 Introduction

The Hungarian municipality system has been through several changes in the last 25 years. The last significant change dates back to 2011, when the new municipality law was enacted instead of the old 1990. law about self-governments, which had been of legal force for over two decades. [1, 2] A unique characteristic of this new law is that a significant part of its commands only came into effect after the general municipal elections in 2014. During this period, namely in 2013, the municipality system went through a strategic change. Besides the regional and settlement municipalities, the so-called 'járás' and járás-headquarters appeared, as a new category of settlement municipalities. Accordingly, the law regulates the scope of duties of the municipalities of villages, towns, járás-headquarters, the capital city's districts, as well as that of the capital city and the counties. The basic principle, however, remained the same: the main consideration of every municipality should be thrift.

Another feature of the new regulation is that it opposes the decentralization ambitions of the old law, which, however, is still the main direction in the practices of the OECD countries [5]. A municipality reform is justifiable, if a previous regulation system cannot attend the public services according to the societal expectations and local needs, or if the system is financially not sustainable. It obviously cannot be ignored either that a new model should always be able to adjust to the challenges of a given era.

2 Literature Review

2.1 Features of the municipal regulation

Democracies, following the principle of subsidiarity always recognize the need to set off the local distinctions, when effectuating central measures at a local level. In modern market economies, the main characteristic of local municipalities is that they can independently

decide about the organization of tasks. The new municipality law does not deviate from the old one in the sense that it allows for carrying out voluntary tasks, besides compulsory ones. Obviously, they cannot coincide. The change appears in the detailed definition of the compulsory tasks. The novelty of the new regulation is that municipalities are not obliged to carry out the entire scope of compulsory duties. When defining the compulsory tasks, the law takes the county's size, number of inhabitants and economic efficiency into account. The new system supports a more dominant business approach, by emphasizing thrift considerations. From public resources, however, public tasks are realized to fulfill public needs, which doesn't necessarily mean the rejection of economic considerations, but rather their narrowed validation; especially when compared with the market sector.

Municipal autonomy, which is manifested in economic independence, does not equal the ability of self-maintenance. This implies that despite the municipal property economy, and income and expenditure possibilities as well as responsibilities, most of the municipalities would not be functioning without external resources and support; i.e. the transfers, typically coming from the subsystems of the central budget. Hence, an essential question of local self-governance concerns the extent of autonomy to which a municipality carries out tasks, and provides the necessary means and resources [7]. The municipality law grants legitimacy to incomes, necessary for fulfilling tasks, as well as to the degree of state aid, proportionate to the tasks; however, it does not readily mean a complete financial independence. Building on this, the new regulation also emphasizes that a certain rate of the financial resources should be coming from the local/settlement taxes and charges. This issue leads to the examination of the correlations between governmental engagement and the public finance system; in other words, to the problem of the division of labor among the different governmental levels on the one hand (i.e. fiscal federalism and multilevel governance) and to the concerns about the financial system, supporting this division of labor, on the other hand [8].

2.2 Division of labor among the governmental levels

When discussing the issue of the division of labor among the various governmental levels, it is important to clearly define the concept of de-concentration and decentralization. Decentralization means that municipalities have the right of independent discretion and decision, when it comes to organizing and financing public services. Besides having this type of autonomy, municipalities also have the obligation to carry out certain tasks. In a financial sense, decentralization thus implies the extent to which the central governance provides the right of autonomy to the local governance, concerning the type of task/expenditure considerations. Furthermore, it also implies the various ways in which the central government agrees to provide the financial resources. De-concentration, on the contrary, means that in case of dividing labor among the governmental levels, the merely local public tasks and the delegated public tasks should be clearly differentiated. Concerning these latter tasks, there are cases in which the local authority does not have influence on the type of financing, ways of realizing and the efficiency of the tasks themselves. In fact, this is a special form of de-concentration. There are delegated tasks, where the laws and financial possibilities allow municipalities to have a partial decision right about the characteristics and resources of providing a certain service. A clear criterion for differentiating between the types is that the implementation of resources should follow a thrift economy [6].

A tendency since the 1980's has been the decentralization of public tasks, showing a clear correlation with the changes in the world economy. In Europe, the phenomenon of a multilevel governance emerged. It does not simply mean the decentralization of governmental tasks; it is rather a cooperation between and interdependence of the different governmental

levels. The advantages of fiscal decentralization are based on the fact that public resources can be more efficiently distributed -and thus the public services more optimally sufficed- if the needs are identified at a local level. Decentralization greatly helps the efficient application of resources, and it has a positive influence on thrift economy, by approximating the political decision-making and decreasing information-asymmetry. Consequently, the economy's transparency and the accountability of decision makers also improves.

2.3 The municipalities' authority and scope of duties

The local municipality is obliged to carry out the compulsory and voluntarily chosen tasks and practice authority, as defined by law. Regarding the voluntary public tasks, the municipality can do everything that is not opposed to the law and does not endanger the compulsory scope of duties. Financing voluntary tasks can occur either by own income resources, or by resources, specifically assigned for these. The municipality can also carry out governmental tasks, when agreed upon; however, in this agreement, the task-financing should be clearly detailed. The local city council can decide about the scope of authority and duties of a given municipality. In this case, the provision of a given task can be claimed from the central budget.

The municipalities' duties, concerning local public matters and public tasks are the following[1]:

- Settlement development / arrangement
- The operation of the settlement
- Provision of basic health care, services aimed at promoting a healthy lifestyle
- Daycare services
- Cultural services
- Social/ child care services and provisions
- Housing / accommodation
- Local environment protection / water management
- National and civil defense / disaster relief / public work / contributing to the local public safety
- Tasks connected to local taxation / economy / tourism
- Sports / youth issues
- Nationality issues
- Local transportation
- Waste management
- Heating service

Besides the local public issues and tasks, the municipality law can also identify additional local governmental duties, other than the above-mentioned ones.

Implementing the compulsory scope of authority and duties of municipalities with greater economic capacities and higher number of inhabitants can voluntarily be taken over by other municipalities, if:

- Citizen needs justify it
- It can be fulfilled more economically and at least at the same professional level, and
- Without the requisition of extra subsidies.

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[1] 2011. CLXXXIX Law on the Hungarian Local Governments

Consequently, the municipality carrying out the extra tasks is only entitled to additional subsidies, if there is an agreement with the central government, or if the extra tasks are defined by law, which obviously also stipulates the resources for the fulfilment of these tasks.

The new law incorporates strict regulations about subsidies, provided by the European Union and other international organizations. In case the municipality *in fact* or *presumably* cannot fulfil its responsibilities before a given deadline, then the central government can intervene.

2.4 Economy of municipalities

The fulfilment of a public task at a local level can be realized by the municipality's fiscal organs, the support of other financing services, or by purchasing various services, etc. The expenses can be covered in the following ways:

- By own incomes
  - Local taxes
  - Incomes by own activities; enterprises; utilizing profit, dividend, interest, lease originating from the municipality's property
  - Received cash
  - Actual fees, fines, charges
  - Other specific incomes of the municipality and its institutions
- Incomes from transmitted central taxes[2]
  - 40% of the tax on domestic vehicles, collected by the local government
  - 100% of the personal income tax, originating from the income after leasing out land
- Incomes from other financing organizations
- Subsidies from the central government, and other types of subsidies.

The budget of the municipality subsystem is differentiated from that of the central government; the only connection is established through subsidies of the central budget. These subsidies are the bases of financing the municipality's obligatory and voluntary tasks. The uniform budgetary regulation of the municipality contains the resources and expenditures of the task-financing. In this decree, *no operational deficit can be planned*. Only the municipality itself can be held responsible for its eventual loss-making functioning; *the central budget is not liable*. For a secure management, the city council is responsible, and for a proper functioning, the mayor himself.

2.5 The municipality's right for tax-determination

One of the means of economic independence lies in the system of local taxes. This allows municipalities for the sovereign imposition of taxes, as well as the establishment of local tax-policies. Accordingly, the council of a given settlement – village, city, capital city, and district –has the right to impose so-called local and settlement taxes. In the case of a capital city, the building tax, land charge, and communal tax of private persons are imposed by the district

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[2]As defined by the budgetary law, besides the transmitted central taxes as resources, municipalities are also entitled to receive a certain rate of income from fines, concerning environmental protection, misdemeanor and public administration.

governments[3], whereas the local business turnover tax is determined by the capital city government.

The municipality can impose settlement taxes that are not prohibited by law. The following aspects characterize the newly-introduced taxes[4]:

1. The settlement taxes can be imposed on *any tax object*, provided that it is not under public charges.
2. The *subject* of a settlement tax *cannot be* the state, municipality, organization and entrepreneur.
3. The *tax authority tasks*, connected to the settlement tax are carried out by the tax authorities of the municipality.
4. Regarding *issues of legal procedures* about settlement taxes, the taxation-regulation law should be modified in that the municipality can also introduce settlement taxes as a way of self-taxation.
5. The income from settlement taxes is the actual income of the municipality determining it. It can be spent on innovations and the financing of social provisions, which fall under the authority of the municipality council.

Tax obligation, under the jurisdiction of the municipality concerns the following cases:

- The possession of a real estate or right for goods, connected to the property
- Habitation of non-permanent residents
- Practicing an economic activity, as defined by law.

In line with the above, the following taxes can be imposed:

- Property-type tax
- Communal tax of private persons
- Local business turnover tax

The municipality's right of tax determination concerns the followings:

- Enacting or abolishing either of the previously defined taxes. Modification is also allowed, however, during the civil year, it cannot aggravate the tax-burdens of the subjects.
- It should clearly define the time and duration of tax-imposition.
- The rate of tax should be in line with the municipality's financing requirements and the subjects' burden-sharing capabilities; the upper bound –as defined by law- should be taken into consideration.
- Exemptions and discounts –as defined by law- should further be extended.[5]
- Concerning the regulations of taxing, the exact rules should be detailed.

The municipality's right of tax-determination is, however, restricted by the following aspects:

- In case of a given tax object, the subject can only be obliged to pay one type of tax.
- In case of various types of property tax, the tax can only be defined in a uniform way.[6]

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[3]Although, it should be emphasized that in fact, the capital city government is responsible for the imposition of taxes, proposed by the district governments. This can happen, provided that in all taxation years, the council members of the given district government agreed on the imposition.

[4]1990. C. Law on Local Taxes

[5] Especially in the case of accommodations: exemptions/ discounts should be provided, based on the number and income of dependents, living in the same household; based on the mortgage, granted by a credit institute for buying/ building purposes.

[6] In an itemized lump, or by taking the corrected sale value into consideration

- The rate of tax determined cannot exceed the tax-maximum.
- If the tax is to be imposed by the capital city government, then the district government (that previously agreed with the imposition by the capital city government), cannot make the tax take effect in the given taxation-year.
- During the determination of an entrepreneur's building tax, land charge and local business turnover tax, no discount can be given.
- In case of the local business turnover tax, only one tax measure should be applied.
- Similarly, only one tax measure can be applied in the case of the corrected sale value-based building tax (flat or other building), and corrected sale value-based land charge (land belonging to the property, or other types of land).

3 Results and Discussion

3.1 Consequences of conversion to a task-financing system

The new regulation regarding municipalities introduced the *task financing system*. This new approach has brought a significant change compared to previously operating financing systems. Within the framework of the task financing system a task-based subsidy is provided for performing mandatory tasks according to the following criteria:

- thrifty management,
- statutory, expected individual revenues of municipalities
- actual revenues of municipalities.

Task financing approaches the operation of governmental institutions in a new manner. The task financing system should ensure the maintenance of revenue gaining of municipalities. Unlike previous systems, it does not provide resources to operate, but to perform tasks. The result is the prevalence of business attitude in public finances. This method allows comparability between governmental institutions and non-governmental organizations. As a result, a decision may be taken to perform public duties in the most effective and economical way. In task financing the maintaining organization assigns tasks to the corresponding governmental institutions. Tasks should be taken into account and revised in a yearly manner. Required resources are assigned to adopted tasks. As a result, governmental institutions dispose over an amount that is needed in order to perform tasks. The consequence of this method is the elimination of interests regarding individual revenues of governmental institutions and the elimination of interests regarding residual value. This also means a certain indifference. When a governmental institution should make a decision whether to finance their undertaken tasks from its own resources or with the support of the supervisory institution, at the end of fiscal year, the potential budgetary profits cannot kept.[7] Task financing makes budgetary operation more rigorous as budget appropriations should only be spent on the performance of appropriate tasks. [9]

In the task financing system the Parliament provides contribution to municipalities in the same way as in the normative subsidized system, but the contribution amount is aligned with the obligatory functions of municipalities. Task based contribution can only be spent on the mandatory tasks of municipalities, otherwise the whole amount altogether with the interests should be transferred back to the central government. Municipalities, in order to protect their independence and their ability to operate, are entitled to a special contribution, the so-called 'contribution to municipalities that are disadvantaged beyond their control'. The amount and

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[7] In case of proper operation, no gains should be generated.

the use of terms are determined by the respective budgetary law. According to this, no contribution can be requested if

- the population of the municipality – according to the available data of the Administrative and Electronic Public Services Central Office – is below one thousand people and does not belong to a notarial district,
- issuing local taxes has not been decided upon,
- an operational deficit in its budgetary regulation is planned,
- in case of statutory audit, the auditor supplied with a negative clause, concerning annual accounts of the preceding financial year

3.2 Changes and their effects

Interdependence between different governmental levels, as a consequence of multilevel governance, entails certain inner operational disorders. Typical cases are:

- *informational asymmetry* between central government and municipalities,
- human and infrastructural *capacity insufficiency* in the case of public services at a local level,
- *financial dependence* derived from mismatched resource structure for municipalities in order to accomplish prescribed mandatory tasks – it can result in exposure,
- *administrative gap* arising from the differences in scale-economies, and as a result, optimal expenses of public services cannot be validated,
- *a gap in public policy* arising from disregarding local needs and capacities – a common consequence is an either inadequate level or a wasteful resource management.

A multilevel governmental system works appropriately when it matches with the proper division of authorities amongst governmental levels, is consistent with public administration and policy aptitudes and ensures the realization of fiscal policy objectives. This requirement is called external consistency. Another significant criterion is the accordance between functions and the specific solutions assigned to them. This requirement is called inner consistency. [8]

The major issue of municipal regulation is the extent of the capability to which the new system is expected to correct previous „operating errors". A sufficiently robust and comprehensive knowledge and experience is not yet available due to the lack of time elapsed since the implementation. At the same time, understanding eliminated errors can turn the theoretical and practical experts' and policy makers' attention towards critical areas. *One typical system error* is a regulating system almost completely ignoring resource processes, putting annual budgets first. It results in the lack of responsible resource management. *Another error* is the lack of accordance between task system, independent service management and resource system. The task system and the related independent service management would justify the greater involvement of own resources and shared tax liabilities, and a lower involvement of state-controlled resources. It results in the deterioration of incentives concerning the effectiveness of the potential resource-oriented subsidy system. *The third system error* is the prevalence of the soft budget constraint. The most harmful consequence of it is the increasing debt levels of municipalities. *The fourth system error* is when the governmental accounting does not reflect the financial position of entities, or does not provide a basis for measuring costs, i.e. for the introduction of performance-based budgeting. Its consequence is that the governmental information system is not suitable for the planning of national economy, for supporting local strategic management as well as for monitoring compliance with various regulations. [3]

3.2 The present

Perspicacity is greatly supported by the debt consolidation of municipalities recently implemented in four phases. The complete debt consolidation of county municipalities was implemented in 2011. After that, the complete debt consolidation of municipalities with less than 5000 inhabitants and the partial debt consolidation of municipalities with more than 5000 inhabitants were implemented in the consecutive years 2012 and 2013. The complete debt consolidation of the subsystem was implemented in 2014. The following table includes the process in numbers:

Table 1 Debt Consolidation Process of Municipalities

Budgetary year	Consolidated Municipalities	Number of Affected Municipalities	Sum of Consolidation (Billion HUF)
2011	County Municipalities	20	197.6
2012	Municipalities with less than 5000	1730	84.8
2013	Municipalities with more than 5000	279	614.4
2014	Total debt remaining	512	472.3
Total		2083	1369.1

Source: own edition

In the post debt consolidation era the new financing system requires constant monitoring. Adjustments can be made at any time if necessary. In the budgetary year 2015 local municipalities disposed of approximately 2500 billion HUF. Appropriation for central budgetary subsidies was approximately 650 billion HUF. Following the introduction of the task financing system, the operation of the sector remains influenced by different individual revenue options. One consequence of it is the possibility of less wealthy municipalities to gain additional funds. On the other hand, municipalities with a higher rate of business tax revenues are facing higher liabilities. A further consequence is the obligation of municipalities to cover certain social subsidies, maintenance of public spaces, roads and employment creation from their individual business tax revenues.

Besides central subsidies, municipalities expect billions of HUF from the EU in the budgetary term 2014–2020. To satisfy conditions required to request subsidies is the liability responsibility of municipalities. At the same time, resources for small developments and reconstructions of municipal institutions – for which EU resources are not available – are constantly increasing. In 2015 a sum of 5.4 billion HUF provided the reconstruction of urban streets, bridges, pavements and smaller investments for sport facilities. From the central budget, a sum of 16.9 billion HUF was set aside for municipalities and associations for own resource supplements of EU development tenders. Regulatory framework and „tabula rasa" are given for the pioneering start of a local management with a new approach.

4 Conclusion

The recent municipality act -that has been in force for two years- fundamentally corrects previous regulation. A major innovation is differentiated task deployment. Task performance

responsibility of municipalities is reduced to classic public services. The most significant change is the transfer of the majority of public services to decentralized governmental bodies. Public education and healthcare has been the responsibility of the central government. A further new feature is highlighting tasks related to local economic development and organization as well as making regional development under the responsibility of county government. The legislation places great emphasis on ensuring financial sustainability, i.e. hardening budget constraints, which is important in order to reduce „system errors". In this respect, prohibition of the current budgetary deficit is considered of major importance. Based on the unanimous opinion of experts, the renewal of the system should be considered as a process, which requires a more thorough analysis. In order to reach further sophistication of municipalities, a greater emphasis should be put on the coordination among the task system, financing system, organization system and the regulating system. [4]

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THE LEGAL RULES GOVERNING OF THE BUDGETARY PROCESS IN SLOVAK REPUBLIC

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ABSTRACT

We will deal with the issue of standards and regulations, which the budgetary process in our conditions regulates. The aim of this paper is unique on the fact that the budgetary process, has its own specifics and to be transparent, it shall be obligatory for all public sector subjects, and these factors affect the rights of the legal standards that the budgetary process at all stages be guided by: the law on budgetary rules, the law on Budgetary rules of local governments and the law on State Budget.

Keywords: Public sector, state budget, the legal rules, local governments

JEL codes: H11, H61, H71

1 Introduction

Budgetary rules of the public administration and a local government represent some thought processes, based on that is built the whole budget system of the government sector of individual countries. It is a dynamic category that is developing and changing over time and it is influenced by various factors. Consequently, based on this fact, there is influenced also a system of public administration budgets as a relatively static category and a visible outcome of their applications by the regulatory process, that is especially made for all government entities - the budgetary process. [9, 24, 25]

2 Budgetary standards of the public administration and local government at legal reflection of the Slovak Republic

Starting from the requirements on transparency and efficiency, it is necessary to determine the financial aspects of the functioning of the state, by the mandatory rules of a public law. The policy makers have been aware of this requirement already in the past, as a sufficient supply, the effective allocation and the spending of public resources related to the fulfilment of specific state needs and functions is the issue that should be in the middle of attention of each organized subject, in order to ensure its functionality and sustainability. [16, 18]

The origin of a primitive budgetary management can be found already in the state formations of the ancient Greece and Mesopotamia. Later, in relation to the formation of the centralized state in the middle Ages, there is a significant progress in the budgetary scope that is similar to the modern functioning of the financial management. The first attempts to create comprehensive legislation of the budgeting and to determine the financial rules in the current territory of Slovakia are the Austro-Hungarian constitution, adopted in 1867th. [15] Other creation of the form of the legal regimentation of the budget system and the budget process was necessarily responded and copied the constitutional and economic arrangement of the already existing state formations in the Slovak Republic (hereinafter referred to as "SR"). [4]

An important shift in the rules stipulated by the budget system of the Slovak Republic was the adoption of the Act no. 303/1995 Coll. referred to the financial regulation, which was created as a response to the need for the legal regulation of the financial rules, after the transition of the Slovak economy from the central controlled system to the market system. In this new system was defined the status and a role of the state in the economy, especially in budgetary relationships related to the subsequent division of the Czechoslovak Federal Republic into two independent unitary states - Slovakia and the Czech Republic. This law dealt mainly with the state budget as a basic financial and economic issue of an implementation of the state policy. [1, 2]

After 2004, following the integration of SR into the European structures, it means its enter into the European Union (the "EU"), there was a need to adopt the individual legislation in the scope of financial rules of the government sector and local government. [1, 2] The practical form of its adoption were two separate acts governing the issue of the financial regulation and the Act no. 523/2004 Coll. referred to the financial regulation of public administration (hereinafter the "Act on General Government Rules") and Act no. 583/2004 Coll. referred to the financial rules of the local governments (hereinafter the "Act on the Financial Regulation local governments") represent, to this moment, the base sources of the budgetary law in SR. The systematic analysis of this legislation that is contained in these two, the most important sources of the budgetary law and the budgeting, represent, from the legal and financial perspectives, the key aspect in Slovakia that is in the middle of attention of this contribution. [24, 25, 26]

Following the above mentioned the budgetary rules in Slovak (not only Slovak but also the European) represent the issue that is anchored in the legislation with the effect of law. It demonstrates the high importance and the public interest to the stabilization of the social relationships in this area. For this reason, the budget law as „a set of legal norms that regulate socio-economic relations in the budgetary system of revenue and expenditure of public budgets and development processes, distribution and control of management of public budgets," [15] are an integral part of a more general legal sector - financial law.

Based on this, there can be stated that the sources and backgrounds of the budgetary law must necessary have its legal base. Therefore, the basic sources of the budgetary law can certainly include the Constitution of SR that stipulates in Article 58 that the Slovak economy is based on the state budget. Accordingly, the Article 65 related to the local government, represent the constitutional basis for the budget management of the local government's entities - municipalities and higher territorial units (hereinafter referred to as "higher territorial units"). More detailed regulations of the management rules are contained in the legislation of a lower legal force. [24, 25, 26]

Addition to these two, already mentioned acts, we can include the Act. 564/2004 Coll. referred to the budgetary determination of income tax revenue from the local governments and the changes and amendments of some acts, and also some secondary legislation, enforcement and legal regulations such as Government Regulation no. 668/2004 Coll. from the 1st December 2004 related to the distribution of income tax revenues to the local governments and the arrangement of the Ministry of Finance of 8 December 2004 no. MF /010175/2004-42 establishing the generic classification, organizational classification and economic classification of budgetary classifications subsequently amended. [2] The source of a budgetary law, even temporary, it is currently valid act on the state budget for a particular year, the validity of which is not time limited by the annual budgetary period.
Under the influence of current changes, especially by the membership of Slovakia in the EU, it should be noted, that the EU budget and budgetary relations between the budgets of

European Member States form represent the integral part of the budgetary relations and the budgetary law. [4, 6, 7] Due to the extensiveness of the research problems, the transnational aspects of the budgetary rules will be taken into consideration only marginally. In connection to the current problems of deficit budgeting and continuously indebtedness of EU Member States, it was necessary to adopt the relevant legislation that would prevent further development of the debt crisis, while the Member States have moved towards restoring and consolidation of public finance. This requirement was specified in the Slovak Republic in the Constitutional Act. 493/2011 Coll. referred to the fiscal responsibility that thanks to the highest legal force and under the hierarchy of norms, represent the forming element of the budgetary rules of the public administration and local governments. [1, 24]

The legal reflection of the researched issue will be examined in this paper as a systematic analysis of the legislation, budgetary rules, budgets, public administration and regional and local authorities and budget process along the lines of the current valid legislation. The opinions on the financial aspect of the financial regulation will be primarily focused either on the financial relationships between the various budget levels of the government budget or on the relationship between the state budget and the budgets of the local government units. On the other hand, we try to offer a comprehensive look at the economic results of the entities and to introduce the basic concepts of the budgetary responsibility and financial discipline.

Before we proceed to the practical and analytical part of this paper, first there must be clarified the central concepts that are closely associated with the area of a budgetary management, public administration and regional and local authorities. Under this type of management and based on the regular and multi-annual budgetary principle, it is related to the management of the public resources, public finance, and public sector entities.

The key issue of the research problem is the concept of a budget that can be understood in two ways, namely in an economic way or in a legal way. [9] The contrast and mutual relationship of the budget as an economic and a legal category are also reflected into the theoretical definitions that enable to offer to us the legal and the economic theory. Balko in his monograph defines the budget as "basic financial plan of the state, of the local authorities or of the supranational bodies, that is liable to the approval in a separate proceeding for the period of one year due to that is enabled, for the period of one year, the determination and the further distribution of the monetary funds aimed to finance the needs of the whole society." [4, 5] The abovementioned definition lists a number of the conditions that must be met cumulatively, so that we can identify a financial instrument as the budget. In economic terms, the budget is a tool of a concentration and subsequent redistribution of national income. This process is driven from the entities that produce the national income (households, businesses) in favour to those subjects that use money to finance the activities that are beneficial for the whole society (public health, defence, infrastructure, etc.). [15]

The summary of all budgets established in the conditions of a particular country is a budget system. [5] In another interpretation, that term can be understood as a set of the budgetary authorities and institutions that care for a creation, distribution and the use of the public funds and controlling the implementation of public budgets. [3]

In order to agree with the experts [2, 5, 14] dealing with the budget law, possibly budget system based on that is determined the management of SR can be classified as follows:
1. The general government budget
   a. State budget (national)
   b. budgets of local governments (municipalities and higher territorial units)
   c. budgets of extra-budgetary funds
2. EU budget (transnational)

Based on the abovementioned relationships, there can be pointed out that between the EU budget (transnational level) and the general government budget of SR, it means the national level, there is a system of mutual relationships, and therefore these two levels cannot be viewed in isolation or each other unconditionally.

The legal experts of the administrative law generally agree that the public administration is "the administration of the public issues that is executed as an expression of the executive power in the state. [19] The public administration is not the abstract concept without specific content, but it constitutes the exercise of the activities of the special institutions of public administration. Inter alia, the subjects of the public administration are the integral part of them (and some other state bodies if the nature of their activity can be described as a performance of the public administration), further the local government authorities, the special interest bodies and also the other public institutions. Machajová also provides a negative definition of the public administration, which means the performance of all activities of the state, not having the character of legislative or judicial actions. [11]

The local government is a part of the public administration, and local self-government is the most significant subset of the government, along with its professional associations. [19] The local government is tied to a territory and the basic local government authorities to the municipalities and higher territorial units that follow *ex constitutione* (directly from the Constitution). [26] This at first glance seems to be problematic, as the act on budgetary rules should therefore be extended to the budgeting, regional and the local authorities, because the local self-government is a part of the public administration, but on the other hand, there is a special act, which provides the financial rules only of the regional and local authorities. This apparent legal conflict we will try to clarify in the next subchapter aimed to define the scope of these two acts (i.e. the scope of the social relationships, which standards contained therein is regulated).

3 The scope of the act on budgetary rules and the act on budgetary rules of local governments

In general, the legal theory defines the concept of the scope of the act or the scope of a rule, as a sphere of its influence, the extent of its implementation and application. The scope of the act can be examined from several points of view, but for our needs and with the aim to resolve the existing legal-theoretical problem, it is a crucial to concern its substantive scope, which defines the substantive issues regulated by act. [10, 12]

The scope of the act on budgetary rules can be found right in the preamble to the act, specifically § 1, as shown in the Figure no. 1:

Figure 1 The scope of the law on budgetary rules
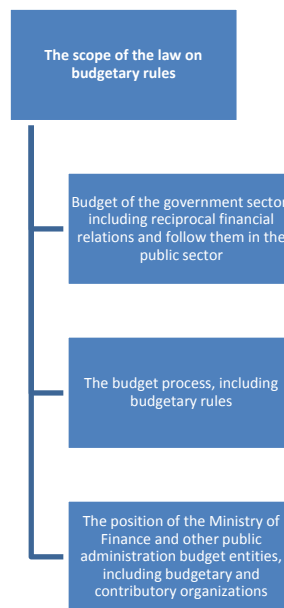
Source: own processing according to § 1 of Act no. 523/2004 Coll. on budgetary rules in the amended changes

The scope of the act on budgetary rules of local governments is also in the first provisions of act. This act applies to line conditioning relationships specified in the Figure no. 2:

Figure 2 The scope of the law on budgetary rules of local governments
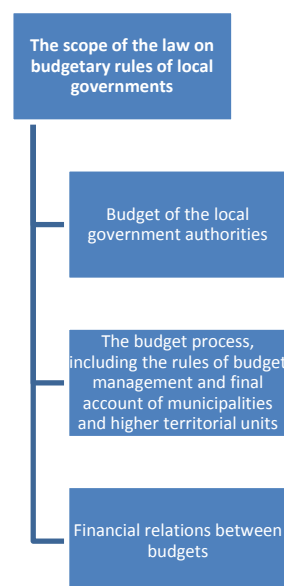
Source: own processing by § 1 paragraph. 1 of Act no. 583/2004 Coll. Financial rules of local governments

Considering the abovementioned, it should be noted that the title of the act herald some doubts about their scope and application scope, with the addition to the adjustments to several institutes redundantly duplicated. [1, 2] The apparent uncertainty resulting from the title of the act, tries to be bridged by the legislatures due to the insertion of the section 3 into the paragraph 1 of the Act on budgetary rules of local governments, which declare the relationships of the subsidiarity and individuality of both Regulations. This means that the municipalities and higher territorial units established accordingly to this Regulation are in general related to the general regulation (i.e. the act on the budgetary rules in force and effect,

as amended) with the derogations provided for in the act on budgetary rules of local governments. Although this provision solve the problem of the relationship of these acts, but in our view there is still remaining a problem that the duplicating adjustments of these institutes may be in some respects subtly different, that can represent an element of legal uncertainty into the legislation of a budgetary regulation.

A budgetary rule of the public administration is conceptually based on the defined expression of the budgetary principles, they represent some specific rules for the composition, but also for the implementation of the budget at all levels of government. [13] Babčák even does not distinguish between budget rules and budgetary principles, when being listed as synonyms, and at one point uses the word principle, the second rule, and his understanding is a substantially identical terms. [4, 5] Mentioned terminology differences still reduces the significance of principles / rules / budgeting principles contained in the statutory regulation on which works the whole budget system SR. Budgetary principles characterize how certain fundamentals thought the grounds on which it is built and based on them the whole process of creation and implementation of the budget system. [17]

In order to follow the transparency, there are created several classifications of the budgetary principles in the research literature that are based on the various criteria. We are choosing this one that is defined by Babčák. This one clearly highlights and at the same time distinguishes the budgetary principles on that is built the whole budget system. These are specifically related to the budget process:

    A. principles on which is built the whole budget system (in other words general, universal principles)

    B. principles of the budget process, that is further divided into:

        a. principles of the establishment, negotiation and approval of the budget

        b. principles of budget management [1, 2]

Figure 3 Classification budgetary principles
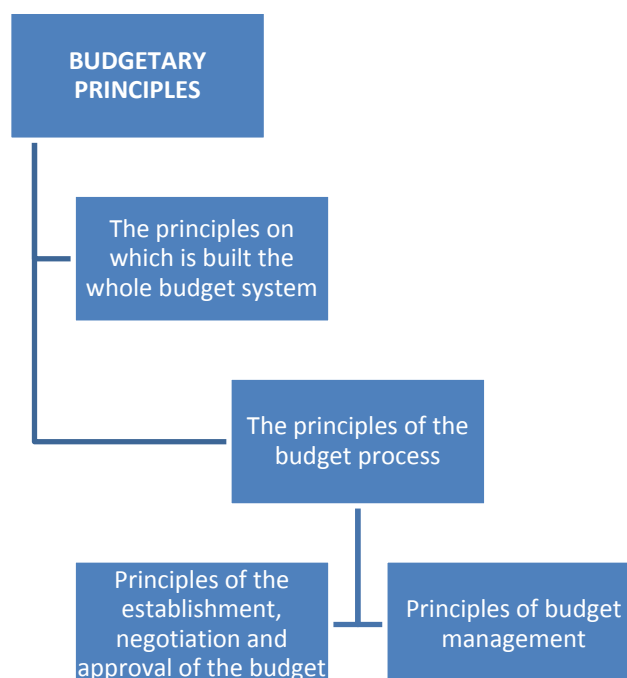
Source: own processing by BABČÁK, V. a kol. 2012. Finančné právo na Slovensku a v Európskej únii. 1. vydanie. Bratislava: EUROKÓDEX, 2012. 206 pp.

The first group of the budgetary principles might include the principles specified in the Table. 1. Their common feature is that they derive from the relevant legislation governing the issue of financial regulation as well as the static nature of a general nature.

Table 1 General budgetary principles

The principle of unity of the budget system	All budgets constitute one comprehensive unit
The principle of unity of the state budget	Using the same grading and classification of income and expenditure of public budgets
The principle of transparency in public budgets	The requirement for transparency of all budget revenue and expenditure - publicity and transparency
The principle of multi-annual budgetary planning	Budgets have been prepared on three years, while the budget for the first year is mandatory, the budgets for the past two years are informative

Source: own processing by SIDAK, M.; DURAČINSKÁ, M a kol. 2014. Finančné právo. 2. vydanie. Bratislava: C. H. Beck, 2014, 122 pp.

The second group of the budgetary principle (Table no. 2) are the principles underpinning the budget process, and thus linked to the annual compilation and updating budgets, their implementation, monitoring and at the end of the financial year the evaluation of their performance and their balancing. Whereas, these principles have a legal basis for their failure to observe or breach can be classified as a violation of budgetary discipline, to which the acts combine the accountability and saving remedies, sanctions, measures. [1, 2]

Table 2 The principles of the budget process

Conformity of the budget year to the calendar year	Budgetary year runs from 1.1. to 31.12 - same as the calendar year
Composure deficits of public budgets	The requirement to balance the current budget and capital budget possible in debt
Time use budget (public) funds	Expenditure section - some of the appropriations may be used only within a particular the budget year
Purpose of the use of budget (public) funds	The use of public funds is possible only for those purposes that are in accordance with the legislation
Public (publicity)	Public discussion of the draft state budget and its implementation in the National Council, the publication of the State Budget Act Collection of Acts
Budgetary specification	Application of unified budget classification – transparency
Detection of the budgetary implications of the legislation and other measures	The justification of the impact of draft laws and other measures on the state budget
Economy	Choosing the most economical use of the appropriations

Source: own processing by SIDAK, M.; DURAČINSKÁ, M a kol. 2014. Finančné právo. 2. vydanie. Bratislava: C. H. Beck, 2014. 123-124 pp.

Not all of these financial rules are explicitly determined in the legislation, but can be implicitly deduced from the act on the budgetary rules, some of them can be found also in the act on the budgetary rules of local governments.

4 Instead of the conclusion

At the end of this article we are comparing very concisely and clearly the legislation of the budgetary rules of the public budgets and the actual functioning of the budgetary process with the neighbouring countries of Slovakia, members of the Visegrad Group V4 - the Czech Republic (hereinafter referred to as "ČR"), Hungary and Poland. The reason for the selection of these countries is their geographical proximity and the relative homogeneity of the economic, social and legal conditions compared to the Slovak, of course with the certain specifics of each state, on the base of which we could later identify the reasons of these differences and to formulate the recommendations aimed to make more effective the functioning of the budgetary process and its management in Slovakia.

Concerning the budgetary rules, the legislation of the Czech Republic have some parallels and mutual features with Slovak legislation that is resulting from the coexistence of Czech and Slovak Republics in the joint state formation in the years from 1918 until 1993 (with a short break during 2nd World War).

Resulting from the above mentioned similar social backgrounds, similar legislation based on the comparable economic, political and social conditions are inevitably also reflected in a concrete legal form of the budgetary rules in the Czech Republic that by its content and its quantity create equal treatment of the institutes in Slovakia. [3] The same statement, we can demonstrate also in a relation to the modifications of the budgets of the local governments, as the administrative organization of the Czech Republic is based on the same basis as the administrative organization of Slovak Republic that was not significantly changed over time. Therefore, we can compare the organization of the budgetary rules of the local governments to the current valid in Slovak Republic. The comprehensive modification in this area is modified in two acts, one of which is more general and the other one (special) is dedicated to the local government. [13, 14]

Concerning the regulation and anchoring the questions related to the budgetary law institutes in Hungary and Poland we can also conclude that it is similar to that valid in Slovakia, since in both countries are the financial rules laid down by the law, which smoothly follows the rules of the financial aspects of the budgeting. The convergence of the legislation concerning the strategic institutes of a fiscal policy clearly resulted also from the requirements of the implementation of the legally binding EU acts, that shape the content of the legislation of the Member States to large extend. [20, 21, 22]

In the context of the local government budgets and of the sources of their income, we would like to highlight the fact that the budgets of the local government authorities in those countries are still financed essentially by the transfers from the state (central) budget, while, however, we can observe a tendency to gradually increase the ratio of own income sources, on the revenue side of the budget, of the self-governing territorial units. One manifestation of this development is a functioning system of local taxes and the share of their collection designed for the territorial authorities has tendency to increase.

Acknowledgments

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THE INFLUENCE OF MEASURING FINANCIAL EFFECTIVENESS AND PERFORMANCE ON THE RISKS OF BUSINESS AND ENTERPRISES

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ABSTRACT

The aim of this paper is to refer to the importance of measuring the financial effectiveness and performance of enterprises and the influence of these measurements on the risks that come from the entrepreneurial operations. From the view of methodology the analysis of the particular theoretical approaches of measuring the financial effectiveness and performance is used. As a benefit of this article we can consider the summary of the theoretical approaches and the mutual links among them whereas the emphasis is on the financial indicators that are directly connected with the measuring of the financial effectiveness and performance in the firms that have a big influence on the risk of the indebtedness and liquidity of business.

1 Introduction

The basic goals of financial management in business entities are connected not just with the recovery of funds of the enterprise but mainly with the maximization of its market value from the view of short – term and long – term horizon. With the general delimitation of the financial management there are the factors of time and risk emphasized but in terms of financial management of small and medium enterprises (SMEs) there is significant influence of the environment of the business in which SMEs is active. This influence of the environment is constantly needed to understand as a dynamically developing and in terms of financial management is needed to constantly watch and then estimate its next probable evolution, for example it is possible to state the information about the evolution of inflation, the exchange rates, and the levels of the interest rates or generally the economic. For this kind of prognosis it is possible to use the available information from the bank forecasts, from the actual evolution of the economic market situation, from the foreign ratings of home economics or from different professional publications and journals.

2 Financial management in SMEs

SMEs in the European economy have a key role to play - they are the undisputed source of job creation, inspired by the entrepreneurial spirit and vision and are extremely favourable stimulators competition and employment in Europe. In the European Union there are around 23 million micro, small and medium entrepreneurs, who provide more than 75 million jobs and 70% of Europeans, are currently employed in SMEs. Micro, small and medium-sized enterprises represent 99% of all enterprises in the European Union make up 58% of the total turnover in the EU. Their development and growth can be regarded as necessary for strengthening European competitiveness and increase the attractiveness of investment and production in Europe [11; 14; 18].

Financial economy of individual businesses may affect the external economic environment. It is explained by that, that comparing to the past, when it was assumed that the financial management of the business must react flexibly and adapt to changes of the external economic environment and to the evolution of economics, now and in the future are assumed such trends in financial management, which cause the retroaction of business entities on economic environment [10]. The thing is the circumstances, by which the economy and the financial management of SMEs may affect economics and the business environment. Exactly economic and financial activities of SMEs may influence the economy, financial and economic environment of the countries in different ways and directions like the given examples indicate:

- *high interest rates* – may cause bad availability of credit in the country and by that the businesses are gaining the sources of credit from abroad, what influences the balance of payments in the country and the currency risks are arisen,
- *high tax burden* – causes that the businesses are trying to reduce the tax base and the businesses are looking for different ways to pay lower taxes abroad or how not to pay them at all, what may cause a significant reduction in the receipts to the state budget in the country,
- *Lack of financial resources* – may cause a deterioration of payment discipline, when the growth of primary and secondary insolvency causes deterioration in the business of the enterprises and then worsen the whole economic situation [4; 18].

Many times owners of the businesses take just the outcome of the economy as a basic indicator. However, the newest trend of the last centuries is not the effort to maximize the reported earnings (accounting value of the company that is the difference between the sum of the business assets and the sum of the accounting valuated corporate commitments), but to maximize the market value of the company. Nowadays it is possible to define the basic financial goal of the business as a sustainable growth of the market value for owners that also respect the adequate satisfaction of the interests of others, other participants in the business (stakeholders) [2; 11; 13].

The basic approaches, which rate the financial position of the businesses, can be classified as:
1. The methods of economic and financial analysis, which are based on accounting earnings and book value of the company (financial indicators),
2. The methods of value management with a focus on EVA (Economic value added) indicator, which is based on the principle of economic profit and market value of the company (selected economic and market indicators) [11; 10].

It is necessary to note, that in the first case we are talking about the indicators with the static character. They are analysed in terms of accounting, excluding the current market situation. In contrast with that, the economic and accounting indicators reflect the current status of the market and the economy of the country in which the business operates. Despite the fact that

both types of indicators have their own importance, it is necessary to keep in mind that nowadays when the consequences of the global economic and financial crisis are still phasing out, it is necessary that the businesses will analyse accounting, economic and market types of indicators when managing the finance, because they really relate to one another and their mutual analysis provides relevant information about the current situation in the company.

The issue of financial management in small and medium-sized enterprises devote their attention not only foreign, but also domestic authors. A study [8] examines the importance of specific corporate, institutional and macroeconomic factors to explain differences in capital structure. It devoted to the testing of the influence of several business factors and factors of the country, which followed the debt of companies which have been categorized by size. The conclusions of the study it is apparent that the total debt of the company is demonstrated by a positive dependency on the size.

In another study [7] the authors pay attention to the means of a specific factor in 24 European countries in which it operates, and how these factors affect the capital structure of SMEs over the period 2001 to 2006. This was mainly on macroeconomic development, enterprise management and legislative and financial environment, and based on the conclusions from the study that in particular the following three specific factors show a positive correlation was with the indebtedness of SMEs.

The studies that were conducted in the Slovak Republic [5], the authors bring in their publication an overview of several researches that have been conducted and published to date. The authors emphasize the fact that many of these studies did not address the sizing classification of establishments and the analysis of financial management attention was paid only to large enterprises. These authors further emphasize that with regard to financial management also appears the concept of financing gap, which are defined as a situation where a significant proportion of small and medium enterprises cannot meet their financial needs, i.e. cannot obtain funding from the banking sector, capital markets, or by other suppliers of financial funds.

3 Approaches to measuring financial effectiveness and performance in SMEs

Effectiveness

Every business subject, who produces products that satisfy market demand, while optimally combining manufacturing factors, produces frugally, thus effectively and these two terms can be consecutively call synonyms. As a scale of effectiveness is considered a ratio of output value to input value [19]. That means, that not only overall effectiveness of all factors of manufacture, but also fractional, partial effectiveness according to individual results of company activities.

Afterwards in general it is possible to interpret effectiveness as a variable which is relative and which represents the output to input ratio, while effectiveness is preserved in case that output to input ratio is greater than 1. Maximal effectiveness of company processes can be achieved by lowering the consumption of resources and raising the manufacturing capacity. In evaluation of financial management effectiveness are the ratio indicators most important. For an example we can look at indicators of profit ratio, which define effectiveness of economical process from the perspective of a private owner of this process.

Effective management of company and managing of factors such as expenses, time, quality, or potential of employees at the company are acceptable solution while dealing with rising of productivity with final positive effect on competitiveness of the company in branch of

industry [3]. Requirement of effective management and development of company is measuring its performance. The analysis of financial management includes focusing also on performance of the company, because business management is closely connected with performance of the company [14].

Measuring the financial effectiveness in SMEs

In terms of the issue of measuring the financial effectiveness of the businesses it is possible to divide the economic methods and models into two basic groups as follows:

1. **Standard models based on accounting profit basis** that is possible to divide again on:
   a) **Standard models of the financial analysis ex post** – this is notably the analysis of the basic ratio indicators, through which it is possible to receive the basic financial information about the financial situation of the business,
   b) **Standard models of the financial analysis ex ante** – notably the analysis of the predictive and creditworthy models, with which it is possible to predict the future financial situation of the analyzed business unit.
2. **Modern** models based **on economic profit basis** that take into account not just financial costs but economic costs and market indicators that reflect the market value of the business as well.

When implementing the financial analysis of specific SMEs it is necessary to consider such kind of method that is going to be effective, reliable, and reasonable in terms of costs and is going to provide a feedback to the target group. Thus the results of the financial analysis should necessarily put together a simple, functional model of the financial analysis, in which the analysed interrelations display, objectify and subsequently interpret. [6; 11].

Performance

The concept of performance is relatively broad meaning. The performance is the sum of several factors and in the company presents a wide – ranging concept that includes the economy and effectiveness of all business processes leading to the achievement of an established target [17]. It is the ability through which an enterprise assesses embedded resources, produces profit or increases the value of an enterprise, but also as the ability which makes an enterprise to ensure its future development [20]. The performance is an abstraction and it cannot manage itself since it is an economic category, which by indicators (identified by the method and specific approach to measuring and evaluating) compares the current state with the required state (target state) [17; 20]. The author further emphasizes that without the system of non – financial indicators it is impossible to achieve complex measuring and evaluating of the enterprise´s performance.

The favourable gauge of the performance of enterprise is the value of enterprise, because it requires complete company information for measuring. Therefore the value management is a system, strategy, processes, techniques and performance benchmarks. The next figure shows how the value of the business is created [16].

Figure 1 Representation of the company's value creation
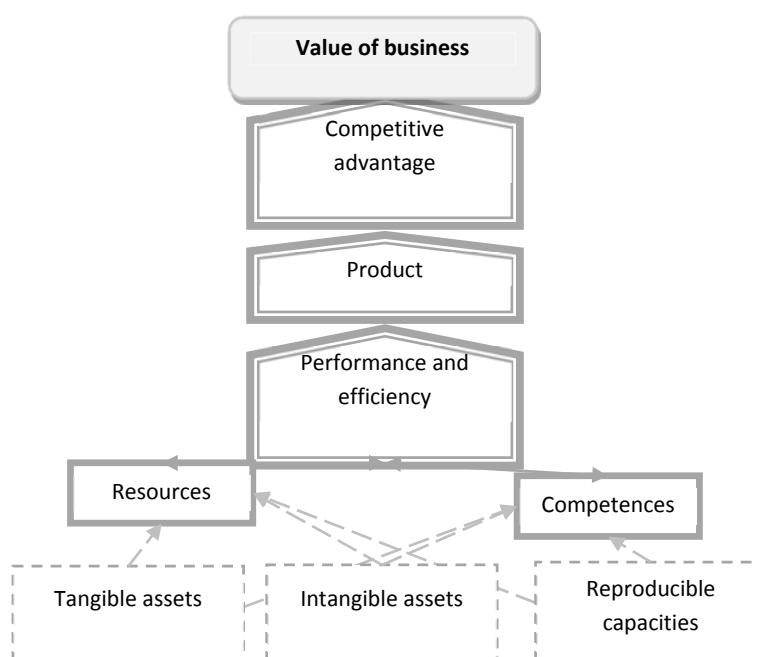
Source: [15]

Proponents of the theory of management creating the value of business distinguish two categories, namely:
1. **The performance of an enterprise as a whole**, which is characterized mainly by traditional indicators of performance,
2. **The performance of an enterprise in terms of its owners,** which is characterized by modern indicators of performance theory of value management [12].

The fact is that behind the performance of an enterprise there are covered not just financial but also non – financial indicators that create a dynamic picture of the competitiveness of the enterprise and reveal the options of further increase of its performance at the same time. There are several subdivisions of the indicators of the performance by various authors. In principle the approaches of the performance evaluation of the enterprises are based on two kinds of indicators such as [3]:

1. **Financial indicators:**

a) Indicators *focused on profitability* - **classical (traditional):**
- Indicators of absolute value of profit (income),
- Indicators of cash flows,
- The ratios based on standard financial statements of enterprises (indicators of liquidity, activity, indebtedness, profitability, market value, ...)

b) Indicators *focused on the growth of the enterprise value* – **modern:**
- The measuring of company performance in terms of increasing its own value for the owners of the company – **value enterprise management,**
- The instruments based on the principle of mathematical modeling – **a set of financial performance indicators,**

2. **Non-financial indicators**, which are based on business strategy and defined strategic goals, for example:
- Benchmarking – Intercompany comparison,

- Balanced Scorecard (BSC) – strategic and managerial system of assessment and management of the business
- Outsourcing – transfer of in – house activities usually unrelated to the main activity of the business on an external body
- Data Envelopment Analysis (DEA) – it is used to measure the relative efficiency of the organizational units based on linear programming, and many others.

Indicators of financial performance are possible to divide as follows:

Figure 2 The breakdown of financial performance indicators
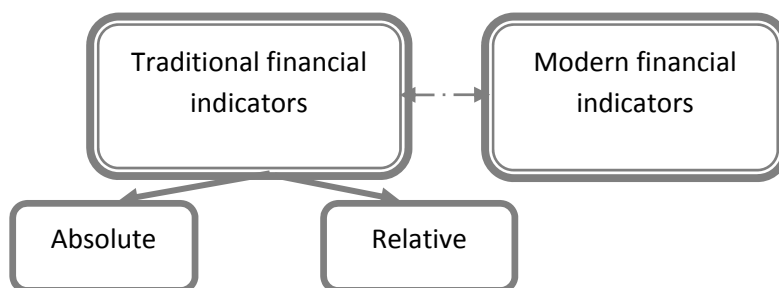
Source: (Own processing according to the professional literature)

Among *traditional* absolute indicators of financial performance in the business practice, which development by the time can be monitored, mainly belong gross and net profit, proceeds, costs, additional value, clean cash flow etc. Above mentioned author points out their disadvantage, this is that they cannot be used for intercompany comparisons. This fact can be removed if the ratio of values of these indicators with appositely chosen base, while in case of intercompany comparisons the use of department in which the company works is needed to be considerate.

Among *traditional relative* indicators of financial performance are also indicators of profitability, activity and liquidity, i. e. ratio indicators of financial analysis ex post. In case of profitability indicators it is needed to choose a kind of net profit so analysis of performance and efficiency would have as accurate as possible. It is good to compare the changes of indicators of liquidity with competition in relevant branch of industry.

Modern indicators of financial performance, that factor in the concept of managing of values and factor in the economical profit of company, as the time passes also are finding their places in the Slovak small and medium size enterprises. Here it's important to mention that here they still don't have as big meaning as abroad.

Selected financial indicators related to the measurements of efficiency and performance of financial management, which influence the risk of going into debt and liquidity of business are the following:

Table 1 Selected financial indicators

Performance rate	Effectiveness rate	Debt rate	Liquidity rate
MVA (Market Value Added)	Total Assets Turnover Ratio	Long-term Debt Ratio	Ratio of Net Working Capital to Total Assets
Price to Book Value Ratio	Inventory Turnover Ratio	Total Debt Ratio	Quick Ratio
EVA (Economic Value Added)	Inventory Turnover	Times Interest Earned Ratio	Cash Ratio

ROC (Return on Costs)	Receivables Turnover Ratio	Cash coverage	Current Ratio
ROE (Return on Equity)	Average period of collection		
ROA (Return on Assets)	Profit Margin		

Source: [1]

4 Conclusion

Measurement of financial efficiency and performance of small and medium enterprises is significant not only from a theoretical point of view. Already in the studies [7; 8; 9] have been analyzed various environmental influences, all of which dealt with the issue of overall debt, liquidity and lack of financial resources for SMEs. Based on the foregoing may recommend that small businesses pay greater attention to selected financial indicators related to financial management, as these are indicators that significantly affect the risk of debt or liquidity of the company, in the following points:

The absolute financial indicators - revenues, expenses, results of operations - within the trend analysis is possible to obtain a picture of their evolution over time and also to predict their future height.

Efficiency indicators, debt and liquidity of the company - belonging to the classic financial indicators are most appropriate means of early warning of the risk of illiquidity and high debt, because their analysis is sufficient information from the financial statements of the company.

Analysis of the environment in which SMEs operate - monitoring and analysis of dynamically changing environment brings SMEs early opportunity of indicating serious risks, despite the fact that this environment can not directly affect businesses.

Performance analysis of SMEs - in its simplest form it represents the company's profitability indicators and a higher level of analysis, for example, indicators EVA and MVA.

All these theoretical findings are valuable and their subsequent practical application is a topic for further research on the issue of measurement of financial management with an emphasis on financial indicators relating to the effectiveness and financial performance of SMEs in the Slovak Republic and which can be regarded as a basic indicator of financial risk and competitive position.

Acknowledgments

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STRUCTURAL AID FOR THE BANKING SECTOR INSTITUTIONS AND ITS IMPACT ON THE COMPETITIVENESS OF THE EU MEMBER STATES

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ABSTRACT

The subject of the article is to present the conditions of admissibility of State aid in the European Union, taking into account the rules applicable to the structural aid for financial institutions during the crisis (recapitalization and measures relating to toxic assets). The qualitative analysis of State aid granted by the Member States was carried out under the provisions of the Treaty on the functioning of the European Union and the European Commission guidelines on the development and implementation of State aid for banks. Statistical analysis was carried out based on the linear regression model. The response variable (dependent variable Y) was the GDP per capita, and explanatory variable (independent variable X) was the expenditure on structural aid for the financial sector institutions.

Keywords: state aid, financial crisis, competition policy, European Union, structural aid

JEL codes: E62, K20, K33

1 Introduction

The financial crisis and the collapsing of the financial market as a result of bankruptcy in 2008 of Lehman Brothers bank became the justification for the need for State intervention in order to prevent the bankruptcy of other financial institutions and related consequences for the real economy. Financial institutions faced then three problems. These involved: the need of banks for additional capital because of reports by banks of large losses and declines in value of assets due to associated with their possession and difficult to assess exposure to risk, difficulties in raising funds by banks to refinance their activities as a result of perturbations in the market of long-term financial instruments, as well as the collapse of the interbank short-term loans market, which deprived the banks of their major source of liquidity. Essential in this range was the position of the European Commission, whose task is to exercise control over compliance with European rules relating to the Member States intervention in the economy. A special role is played here by rules on granting State aid because their violation can lead to distortions of competition in the internal market [9; 12; 13]. European Commission, which has a wide range of competence in the field of State aid in this situation had to settle the approach of application the rules of aid admissibility of the Member States while taking into account such purposes as protecting the financial stability in the European Union, maintaining bank lending and profitability of the banking sector in the long-term perspective. Finally, the Commission took the view that the global financial crisis could cause serious disturbances in the economies of the Member States, and already undertaken by those states aid measures to support banks are an appropriate tool to prevent these disturbances.

The purpose of the article is to analyze the conditions of admissibility of State aid in the European Union, taking into account the rules applicable to the structural aid for financial

institutions during the crisis (recapitalization and measures relating to toxic assets). The analysis of State aid should lead to the verification of two research theses. According to the first thesis, the euro zone countries approved and granted structural aid for financial institutions by far larger amounts than the EU Member States that have not yet adopted the common currency. Whereas the second thesis highlights that the volume of expenditure on structural aid for financial institutions in respect of the whole European Union and particular Member States, should be positively correlated with the rate of GDP *per capita*, determining the level of development and competitiveness of the European economy. The positive correlation of GDP *per capita* with the amount of expenditure on structural aid for the financial sector would mean that with increasing amount of State aid for financial institutions their competitiveness measured in terms of GDP *per capita* should increase, and thus the competitiveness of national economies and the competitiveness of the EU economy ought to increase.

2 Literature Review

State aid was one of the major tools to support Member States in their fight against the most serious financial crisis in modern history. Since the existing community guidelines on State aid for rescuing and restructuring enterprises in difficulty [4] were not suitable for rapid response to the deteriorating situation, the European Commission sent messages about the legal basis of art. 107 par. 3 point b) Treaty on the functioning of the European Union (TFEU) [16]. These were: Banking Communication [5], Recapitalization Communication [6], Impaired Assets Communication [7] and Restructuring Communication [8]. In these communications the Commission recognized that the crisis is serious enough to justify the providing of aid on the basis of this regulation, at the same time providing the rules of consistent application by the Member States of state guarantees, recapitalization measures and aid related to toxic assets - both for individual banks, and as a part of the national program. Apart from this, in the communication on restructuring it was specified in detail how restructuring plan ought to look like (or plan to regain profitability) in the specific context of State aid provided to financial institutions on the basis of art. 107. par. 3 point b) TFEU in connection with the crisis. Guidelines in these communications were used mainly that the emergency measures taken to achieve financial stability guaranteed equal opportunities for banks operating in different Member States and banks receiving public support and those who are deprived of it. The control of State aid by the Commission in this regard was to minimize the negative externalities of public interventions between Member States, between beneficiaries of the aid of different level of risk and between the beneficiaries of the aid and banks which do not benefit from State aid, while facilitating the pursuing of the program objectives. In the long term, these actions were intended to improve the international competitiveness of the EU economy.

The competitiveness of the European Union can be considered due to the three components, which include the potential competitiveness (competitiveness ex ante), a strategy to compete (competing instruments), competitiveness realized (competition *ex post*) [1; 14; 15; 17]. In terms of the European Union development strategies – of Lisbon Strategy implemented till 2010 and the currently implemented "Europe 2020" - the competitiveness of the European Union is a potential competitiveness in the ten-year term. In so-called pyramid of competitiveness proposed by the European Commission in 1997 a set of factors was presented on which it is possible to build models of competitiveness in not only macroeconomic but microeconomic term [18]. At the top of this pyramid as the main factor of competitiveness there was the standard of living, which synthetic measure is GDP *per capita*. In turn two factors, i.e., the employment rate and productivity have the impact on quality of life. Clearly,

this concept differs from what is conventionally regareded as constituting competitiveness, that is, the relative price of a specific product or industry output originating in different nations in world markets. While important, the latter concept finds no counterpart where national competitiveness is concerned. Moreover, it implies that losses of competitiveness correspond to losses of output. While this may be correct for specific industries, it is not meaningful when a nation's competitiveness as a whole is under review.

Further decomposition of the pyramid allows for the identification of more precise determinants characterizing the level of employment and productivity, so factors affecting the overall level of competitiveness. One of them is the economic policy of the State, which is carried out, among others, through the instruments of State aid, having a substantial impact on both the competitiveness of the economy as a whole and on particular enterprises operating within it. Beside human, capital, and natural resources and the international environment the State intervention is undoubtedly one of the most significant determinants characterizing the competitiveness of the national economy [3].

3 Data and Methodology

According to the definition used by the European Commission, the competitiveness is defined as "the ability of the economy to provide residents with high and rising standard of living and a high level of employment and productivity, based on a solid basis" [10]. The measure of competitiveness is here the indicator determining the size of the gross domestic product *per capita* (GDP *per capita*) [11]. The size of GDP *per capita* in relation both to the entire EU and individual Member States determines the standard of living and level of economic development. The higher is the value of GDP *per capita* the higher the country competitiveness. At this point, it seems reasonable, therefore, to conduct a comprehensive analysis of the relationship between the EU Member States expenditure on State aid for the financial sector institutions and the size of GDP *per capita*. The response variable (dependent variable Y) is the GDP *per capita*, and the explanatory variable (independent variable X) is the expenditure on State aid (expenditure on structural aid).

Statistical analysis will be carried out based on two source tables. The first table shows the calculations for the linear regression model concerning respectively the slope parameter (directional factor β). The factor *b* of the regression function II is the estimator of the parameter β of regression function I [2]. The standard error Sb is the standard error of the estimator *b* of the parameter β. The designations "Lower 95% " and "Upper 95%" concern lower and upper limits of so-called confidence interval of numerical values for parameter β, where this parameter is with a probability of 95%.

t Stat is a test of linear relationship occurrence between expenditure on State aid for the financial sector institutions (expenditure on structural aid) and the size of the GDP *per capita*. This statistical test allows to verify the authenticity of the so-called null hypothesis that the parameter of the regression function I type β is equal to zero, with the alternative hypothesis that it is not equal to zero (H0: β = 0; HA: β ≠ 0) . The acceptance of the null hypothesis that the parameter β = 0 would mean that the increase in the value of expenditure on State aid by € 1 million will not cause any changes in the size of the GDP *per capita* which means the lack of any relationship between expenditure on State aid and the size of the GDP *per capita*. In other words, the acceptance of the null hypothesis means the lack of the influence of the State aid for financial institutions provided by the Member States of the European Union on the size of their GDP *per capita*. From the perspective taken in this paper it will be essential to reject the null hypothesis in favor of the alternative hypothesis which states that between the studied phenomena - expenditure on State aid and the size of the GDP *per capita* - there is a

significant statistical relationship. From the tables of critical values of t-Student it is seen that $\pm t\alpha/2 = \pm2.776$ for $\alpha = 0.05$ and n - 2 = 4 degrees of freedom. The null hypothesis can be rejected in favor of the alternative hypothesis only when tb < tα/2 or tb > tα/2, that is when – tb < – 2.776 or +tb > +2.776.

The *p*-value is the probability of making so-called type I error, involving the rejection, based on the results of the test, of the hypothesis that assumes the values of the parameter *β* is equal to zero, when in fact it is equal to zero in the whole population. In other words, type I error is a rejection of a real null hypothesis. The higher the value of the t-test means the lower the probability of type I error. In general, it is assumed that if the p-value is less than 0.05, the null hypothesis can be rejected in favor of the alternative hypothesis, and thus claim that there is a statistically significant relationship between the expenditure of EU Member States on State aid directed at financial institutions and the size of the GDP *per capita* of these countries.

The second table contains regression statistics. Among the regression statistics are: the correlation coefficient, determination coefficient, standard error and the parameters of F test, that is the value of F-test and the probability of making type I error, when the hypothesis is verified concerning the lack of impact of expenditure on State aid on the size of the GDP *per capita* (irrelevance of State aid expenditure in the regression model). F-test, similarly as described above t-test, is used for testing the significance of linear regression coefficient *β* evaluation. The checking of this test is a statistic F having F-Snedecor distribution of k1 and k2 freedom degrees. When rejecting the null hypothesis F>Fα of no relation between expenditure on State aid and the size of the GDP *per capita* and accepting the alternative hypothesis of the existence of a statistically significant relationship between the variables. From the table of critical values of the F-Snedecor for k1 = 1 (1 independent variable) and k2 = n – 2 = 4 degrees of freedom and α = 0.05 we read F0,05 = 7.71. Thus, the alternative hypothesis can be adopted only when F> 7.71.

4 Results and Discussion

The important dimension of State intervention in response to the financial crisis were the measures taken by the Member States in order to secure the level of capitalization of financial institutions, which involved the introduction of recapitalization schemes or providing public aid on an *ad hoc* basis. Data in this regard is presented in tables 1 and 2.

Table 1 Asset relief interventions and recapitalization measures provided by EU Member States over the period 2008-2013

Member States	Recapitalisation measures		Asset relief interventions		Total 2008-2013 recapitalisation and asset relief	
	In € billion	As a % of 2013 GDP	In € billion	As a % of 2013 GDP	In € billion	As a % of 2013 GDP
Austria	11,10	3,54%	0,50	0,16%	**11,60**	**3,7%**
Belgium	23,32	6,09%	21,83	5,70%	**45,14**	**11,8%**
Bulgaria	0,00	0%	0	0%	**0,00**	**0,0%**
Croatia	0,00	0%	0,00	0%	**0,00**	**0,0%**
Cyprus	1,80	10,91%	0,00	0%	**1,80**	**10,9%**
Czech Republic	0,00	0%	0	0%	**0,00**	**0,0%**
Denmark	10,77	4,33%	0,32	0,13%	**11,09**	**4,5%**
Estonia	0,00	0%	0,00	0%	**0,00**	**0,0%**
Finland	0,00	0%	0,00	0%	**0,00**	**0,0%**
France	25,05	1,22%	1,20	0,06%	**26,25**	**1,3%**

Germany	64,17	2,34%	79,97	2,92%	**144,15**	**5,3%**
Greece	40,85	22,44%	0,00	0,00%	**40,85**	**22,4%**
Hungary	0,21	0%	0,00	0%	**0,21**	**0,2%**
Ireland	62,78	38,27%	2,60	1,58%	**65,38**	**39,9%**
Italy	7,95	0,51%	0,00	0%	**7,95**	**0,5%**
Latvia	0,54	2%	0,41	1,23%	**0,95**	**2,9%**
Lithuania	0,23	1%	0,00	0%	**0,23**	**0,7%**
Luxembourg	2,60	6%	0,00	0,00%	**2,60**	**5,7%**
Malta	0,00	0%	0,00	0%	**0,00**	**0,0%**
Netherlands	23,02	3,82%	5,00	0,83%	**28,02**	**4,6%**
Poland	0,00	0%	0,00	0%	**0,00**	**0,0%**
Portugal	7,85	5%	3,10	1,87%	**10,95**	**6,6%**
Romania	0,00	0%	0,00	0%	**0,00**	**0,0%**
Slovakia	0,00	0%	0,00	0%	**0,00**	**0,0%**
Slovenia	3,15	8,94%	0,00	0%	**3,15**	**8,9%**
Spain	61,85	6,05%	32,90	3,22%	**94,76**	**9,3%**
Sweden	0,78	0%	0,00	0%	**0,78**	**0,2%**
United Kingdom	100,14	5%	40,41	2,13%	140,54	7,4%
EU 28	**448,16**	**3,43%**	**188,24**	**1,44%**	**636,39**	**4,87%**

Source: EUROSTAT.

With regard to the euro zone countries it should be noted that almost 75% of the measures reported to the Commission on bank recapitalization were clustered in 3 countries. They are: Germany - €64.17 billion, Spain - €61.85 billion and Ireland - €62.78 billion. The plans of aid which include the recapitalization measures were notified to the Commission throughout the period 2008-2013, while in amount term the largest aid was approved in 2010, where such aid was notified by Spain and Ireland.

By contrast, the purpose of aid measure including toxic assets was "relief" of bank balance sheet that could be used by the capital freed in this way to increase lending to the real economy. In many banks it was necessary to solve the problem of toxic assets, and measures related to these assets were often accompanied by other restructuring measures. Until 31 December 2013 in nominal terms the Member States used €188.24 billion. The associated with toxic assets *ad hoc* aid was introduced in eight euro area countries - Austria, Belgium, France, Germany, Ireland, the Netherlands, Portugal and Spain. Among the non-euro countries special attention is brought to the United Kingdom, which has approved €248.05 billion.

Table 2 Structural aid granted by EU Member States over the period 2008-2013 (in billions of euros)

Member States	2008	2009	2010	2011	2012	2013
Austria	0,90	6,29	0,58	0	2,07	1,75
Belgium	16,90	11,23	0	0	12,31	4,70
Bulgaria	0	0	0	0	0	0
Croatia	0	0	0	0	0	0
Cyprus	0	0	0	0	1,80	0
Czech Republic	0	0	0	0	0	0
Denmark	0,50	8,04	1,94	0,29	0	0
Estonia	0	0	0	0	0	0
Finland	0	0	0	0	0	0,00
France	13,21	10,45	0	0	2,59	0
Germany	29,80	57,72	51,65	3,65	1,33	0
Greece	0	3,77	0	2,59	30,94	3,55
Hungary	0	0,21	0	0	0	0

Ireland	0	11,00	37,87	16,51	0	0
Italy	0	4,05	0	0	2,00	1,90
Latvia	0	0,41	0,51	0	0,04	0
Lithuania	0	0	0	0	0	0
Luxembourg	2,50	0,10	0	0	0	0
Malta	0	0	0	0	0	0
Netherlands	14,03	5,00	4,83	0	0	4,16
Poland	0	0	0	0	0	0
Portugal	0	0	3,10	0	6,75	1,10
Romania	0	0	0	0	0	0
Slovakia	0	0	0	0	0	0
Slovenia	0	0	0	0,25	0,48	2,42
Spain	0	1,30	12,36	8,53	65,95	6,62
Sweden	0,25	0,53	0	0	0	0
United Kingdom	49,44	50,09	34,58	3,18	0	3,25
EU 28	127,53	170,21	147,42	34,99	126,25	30,00

Source: EUROSTAT.

With regard to the euro area countries, almost 96% of the aid measures notified to the Commission in terms of toxic assets was focused in 3 countries. They are: Spain - €139,92 billion, Ireland - €122.26 billion and Germany - €82.78 billion. This aid was approved by the Commission in 2008-2010, with the greatest aid reported in 2009. Whereas the biggest aid administrators are definitely Germany, which gave €79.97 billion of State aid in this form, equivalent to 70% of the total amount of aid in terms of toxic assets granted to banks in the euro area (€147.1 billion).

When analysing the structural aid for the banks, it should be reminded that at the beginning of the crisis, the Commission established a distinction between financial institutions in a difficult situation, i.e. institutions financially unstable, suffering from endogenous structural problems related to e.g. their particular business model or investment strategy, and financial institutions generally financially stable i.e. those whose problems are caused by "merely and largely" the unique situation in the context of the financial crisis, and not with the stability of their business model, inefficiency or excessive risk taking. The indicators presented in the recapitalisation communication were primarily basis for this distinction: capital adequacy, current bonuses in the CDS transactions, current rating of the bank and the future prospects, as well as, among others, the relative size of the recapitalization. When it comes to the last indicator, the indicator to distinguish banks generally financially stable form banks in a difficult situation according to the Commission it was aid received in the form of recapitalization and aid measures connected with assets exceeding 2% of risk-weighted assets of the bank. Recapitalization the bank in a difficult situation required submitting a restructuring plan to the Commission and the recapitalization of the financially stable bank - plan for the restoration of viability.

The reason for the distinction between financially stable banks and banks in a difficult situation for the purposes of submitting the restructuring plan and the determination in this regard of the variety of indicators, including a threshold of 2% of risk-weighted assets of the bank, was the fear that otherwise the capital needs arising from impairment of value of assets, higher markets expectations about the level of capital in banks and temporary difficulties in raising capital on the market will lead to the fact that financially stable banks will limit loans to the sectors of the real economy, so that in the case of using the state aid there would be no need of submitting a restructuring plan. In 2010 the entire banking sector, had however fewer difficulties with obtaining capital in the markets and could therefore meet its capital needs without having to apply for State aid.

Therefore, the distinction between banks financially stable and those in a difficult situation was no longer justified to decide which banks should discuss with the Commission their restructuring. Therefore, the banks, which in 2011 benefited from state aid in order to raise capital or in terms of impaired assets, were required to provide the Commission with a restructuring plan showing their determination to take the necessary restructuring activities and to return to viability without undue delay. In other words, as of 1 January 2011 each beneficiary of a new measure on the recapitalization or toxic assets was required to present a restructuring plan. These principles applied to all measures for recapitalization or toxic assets regardless of whether they were individual aid or were granted under aid scheme.

Table 3 presents the calculations for verifying the second hypothesis, according to which the EU Member States expenditure on structural aid for the financial sector institutions does not affect the level of GDP *per capita* in these countries.

Table 3 The size of structural aid and the GDP *per capita* − the analysis of variance: the line "variable X"

EU Member States	Regression coefficient b	Standard error S_b	t Stat t_b	p-value	Lower 95%	Upper 95%
Austria	-1,8E-07	9,5E-08	-1,88293	0,13283	-4,4E-07	8,49E-08
Belgium	1,19E-08	2,3E-08	0,516301	0,632874	-5,2E-08	7,58E-08
Bulgaria	-	-	-	-	-	-
Croatia	-	-	-	-	-	-
Cyprus	-4,8E-07	7,16E-07	-0,66757	0,540949	-2,5E-06	1,51E-06
Czech Republic	-	-	-	-	-	-
Denmark	-1,1E-07	1,29E-07	-0,82214	0,457177	-4,7E-07	2,53E-07
Estonia	-	-	-	-	-	-
Finland	-	-	-	-	-	-
France	4,39E-09	3,12E-08	0,140531	0,895033	-8,2E-08	9,11E-08
Germany	**-3,2E-08**	**6,15E-09**	**-5,15506**	**0,006721**	**-4,9E-08**	**-1,5E-08**
Greece	-7,7E-08	5,37E-08	-1,43393	0,224895	-2,3E-07	7,21E-08
Hungary	-1,2E-06	1,06E-06	-1,14459	0,316216	-4,2E-06	1,73E-06
Ireland	-3,8E-08	3,73E-08	-1,01679	0,366754	-1,4E-07	6,57E-08
Italy	-2,6E-07	2,01E-07	-1,29607	0,264677	-8,2E-07	2,98E-07
Latvia	**-2E-06**	**5,3E-07**	**-3,81273**	**0,018896**	**-3,5E-06**	**-5,5E-07**
Lithuania	4,07E-06	2,54E-06	1,602429	0,184321	-3E-06	1,11E-05
Luxembourg	**2,11E-06**	**4,12E-07**	**5,107307**	**0,006947**	**9,61E-07**	**3,25E-06**
Malta	-	-	-	-	-	-
Netherlands	9,1E-08	4,49E-08	2,023638	0,113028	-3,4E-08	2,16E-07
Poland	-	-	-	-	-	-
Portugal	-5,4E-08	5,29E-08	-1,02357	0,363902	-2E-07	9,28E-08
Romania	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-
Slovenia	-3,5E-07	2,83E-07	-1,25004	0,279427	-1,1E-06	4,32E-07
Spain	-1,1E-08	9,96E-09	-1,10275	0,33202	-3,9E-08	1,67E-08
Sweden	**-4,4E-06**	**1,07E-06**	**-4,14271**	**0,014345**	**-7,4E-06**	**-1,5E-06**
United Kingdom	1,27E-08	1,34E-08	0,952189	0,394921	-2,4E-08	4,98E-08
EU 28	-2,5E-09	2,79E-09	-0,8807	0,428215	-1E-08	5,3E-09

Source: Own calculations.

On the basis of the calculations in table 3, it can be concluded that only in the case of Luxembourg, the regression coefficient takes a positive value. Consequently, the increase in expenditure on State aid by €1 billion is accompanied by an increase in GDP *per capita* by average €2105.84. Margin of error is €412.32. Bearing in mind however the confidence

interval for the regression coefficient, it can be with a probability of 95% said that the increase of granted guarantees for banks by €1 billion will cause an increase of GDP *per capita* of Luxembourg from €961.06 to €3250.63.

For Germany, Latvia and Sweden the regression coefficients take negative values, which means that the expenditure on structural aid for the banks have a negative impact on GDP *per capita* of these countries. The increase in expenditure on public aid by €1 billion is accompanied by a fall in GDP *per capita* - respectively – with an average of €31.70, €2020.67 and €4444.2. Estimation errors are respectively €6.15, €529.98 and €1072.78. On the other hand taking into account the confidence interval for the regression coefficient it can be with a probability of 95% said that the increase in expenditure for structural aid of €1 billion will cause fall in GDP *per capita* by the value of the interval (€14.62; €48.77) for Germany, (€549.21; €3492.13) for Latvia and (€1465.70; €7422.71) for Sweden. For these countries the probability of making a type I error, connecting with the rejection of a real null hypothesis concerning lack of relation between the size of the State aid and the value of GDP *per capita*, is very small and does not exceed the accepted level of significance of 0.05. Identical request as to the proposed hypothesis can be obtained by analyzing the value of F test (26.57, 14.54, 17.16), and F significance (0.007; 0.02; 0.01). F test parameters and regression statistics for the studied relationship between the size of the structural aid for the banks and the value of GDP *per capita* in the European Union countries are shown in table 4.

Table 4 The size of the structural aid for the financial sector and the GDP *per capita* - regression statistics and F-test

EU Member States	Regression statistics			Test F	
	Corelation indicator	Determination coefficient	Standard error	F	Significance *F*
Austria	0,685477	0,469878	481,3599	3,545439	0,13283
Belgium	0,249956	0,062478	360,6677	0,266567	0,632874
Bulgaria	-	-	-	-	-
Croatia	-	-	-	-	-
Cyprus	0,316613	0,100244	1176,01	0,44565	0,540949
Czech Republic	-	-	-	-	-
Denmark	0,380202	0,144553	900,6934	0,67592	0,457177
Estonia	-	-	-	-	-
Finland	-	-	-	-	-
France	0,070093	0,004913	413,809	0,019749	0,895033
Germany	**0,932294**	**0,869172**	**360,5688**	**26,57461**	**0,006721**
Greece	0,582679	0,339515	1434,367	2,056159	0,224895
Hungary	0,496704	0,246715	207,3644	1,310078	0,316216
Ireland	0,45319	0,205381	1247,051	1,033859	0,366754
Italy	0,543828	0,295748	738,1834	1,679788	0,264677
Latvia	**0,885559**	**0,784215**	**277,5848**	**14,53695**	**0,018896**
Lithuania	0,625273	0,390966	536,2041	2,567777	0,184321
Luxembourg	**0,931151**	**0,867042**	**934,1874**	**26,08458**	**0,006947**
Malta	-	-	-	-	-
Netherlands	0,711249	0,505875	515,756	4,095109	0,113028
Poland	-	-	-	-	-
Portugal	0,455586	0,207558	319,4164	1,047691	0,363902
Romania	-	-	-	-	-
Slovakia	-	-	-	-	-
Slovenia	0,53001	0,280911	600,8682	1,562593	0,279427
Spain	0,482843	0,233137	556,4359	1,216055	0,33202
Sweden	**0,900546**	**0,810982**	**525,9985**	**17,16206**	**0,014345**
United Kingdom	0,429863	0,184782	716,65	0,906664	0,394921

EU 28	0,403008	0,162416	369,8722	0,775639	0,428215

Source: Own calculations.

In the case of Luxembourg, one can speak of a very strong correlation of aid granted in the form of guarantees for banks with the amount of their GDP *per capita* in a positive sense. This model has a very good fit to the empirical data, as its calculated coefficient of determination is close to 1.

For Luxembourg determination coefficient is 0.869172. Therefore, variations in GDP *per capita* in this country were explained in 86.92% with variations in expenditure on State aid in the form of recapitalization and measures relating to toxic assets for the financial sector, while the remaining 13.08% result from the impact of other factors. If the coefficient of determination takes the values less than 0.5, the regression explains only less than 50% of the variation in GDP *per capita* and predictions based on such a regression model may be unsuccessful because the regression model explains then very little. This means that the predictions can be created basing on the Luxembourg model, because the regression model is characterised by a good fit and is little burdened with the estimation error, which provides grounds for precise forecasting.

Germany, Latvia and Sweden are characterized by occurring between the amount of provided aid to financial institutions and the level of GDP *per capita*, strong positive correlation - respectively 0.932294, 0.885559 and 0.900546. In the case of Germany, for which the determination coefficient has the highest value, the variability of GDP *per capita* was explained in 86.92% by variability of expenditure on State aid for banks. The remaining 13.08% is the effect of random and non-random factors (other non-aid variables, imprecise fit of a straight line to the empirical data etc.). For Latvia and Sweden the determination coefficient assumes lower values and amounts to 0.784215 and 0.810982.

In the case of taking into account the structural aid it is not possible to conclude the linear relationship between the expenditure on aid and GDP *per capita* at the level of the EU-28.

5 Conclusions

In relation to the proposed research theses in the paper it also should be concluded that:

The first thesis, according to which euro area countries approved and provided structural aid to financial institutions by far larger sizes than the EU Member States, that have not yet adopted the common currency, were positively verified. This directly results from the causes of the financial crisis.

The second thesis, according to which, both in relation to the European Union and its individual Member States, the amount of expenditure on structural aid for financial sector institutions is positively correlated with the rate of GDP *per capita*, determining the level of development and competitiveness of the European economy, should be rejected . It cannot be considered as a true the thesis that with increasing the amount of State aid to banks the competitiveness of the EU economy increases. It was incorrect to assume that this correlation occurs for all Member States, because of the amount spent on State aid to financial institutions are very different at the level of individual Member States. Different is also the proportion of aid actually granted in the aid approved by the European Commission. The lack of correlation dependency or occurrence in some cases of negative correlation dependency between the State aid to the financial sector and the GDP *per capita* in the EU Member States can be justified by the fact that the characteristic to the financial crisis was that its next phases occurred associated with its transfer to other areas of economy - from financial market, the

real sector, to the public finances. The positive correlation of structural aid for the financial sector institutions with GDP *per capita* in the case of one Member State - Luxembourg - may in turn be justified by the fact that Luxembourg did not practically grant any State aid to the real economy, while approving large aid programs for the financial sector.

Acknowledgments

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IMPACT OF FINANCIAL SAFETY ON ANNUAL MARKET RATE OF RETURN ON BANKS' STOCKS IN THE COUNTRIES OF CENTRAL AND EASTERN EUROPE

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ABSTRACT

The article assesses the significance of the impact of financial safety on annual market rate of return on banks' stocks in the Central and Eastern Europe countries. A study panel - a model with fixed effects in two periods - pre- and post-crisis (respectively 2004-2008 and 2009-2014) - was conducted. As the security measures the index Z-score, the Basel risk-adjusted ratio, the leverage ratio, and the Tier 1 were adopted. As a set of control variables the macroeconomic and the microeconomic characteristics were used. The former included the rate of return on both the broad stock market index and the banking sectors of the countries surveyed, the latter - relating to the business model and financial condition of individual banks. Differences in the importance of security bank for the formation of annual market rate of return on banks' stocks in the period prior to and post-crisis were observed.

1 Introduction

In the period of global financial crisis in the years 2007-2009 all European countries suffered from a significant reduction in the value of shares of the majority of companies listed on stock exchanges, including shares of banks.

Although the prices of bank shares all over the world in the years 2008- 2009 were extremely low, differences can be observed in return rates of banks in the countries of Central and Eastern Europe in this period of time. As well as in subsequent years (by some economists considered as a period after crisis), one can observe a significant differentiation of return rates achieved by investors locating funds in securities issued by banks. The aim of this article is therefore to identify factors affecting annual market rate of return on banks' stocks from the countries of Central and Eastern Europe. The paper aims at identifying factors affecting stock estimation that were made by banks in Central and Eastern Europe, in years 2004-2014, with particular emphasis on financial crisis particularly visible after 2008.

Also changes that are the result of financial crisis occurred in the perception by investors, correlations between the valuation and financial situation of economies in countries in the region, banking sectors and individual banks.

2 Literature Review

Market price is affected by many complex factors, in which the most important factors have to be considered: the benefits stockholders receive, the confidence of shareholders, and the assessment of overall development of economic situation [3]. Among vast amounts of

research devoted to evolution of the market price of securities issued by banks, analysis should be indicated concerning the role of financial stability of banks in this process, carried out in the financial crisis in the years 2007-2009 as well as in subsequent years.

Beltratti and Stulz also investigated how differences in corporate governance and adjustment at national level affect the return rates of banks in a financial crisis. It was found out that banks with an executive board, composed of representatives from less dominant shareholders and banks, which are located in countries with a strong adjustment of capital generate higher return [2]. In addition, as in other studies, it was found out that higher capital is associated with a higher return rate.

In the tests carried out on a sample group of American banks in the period of 2006-2011 by Charles W. Calomiris and Doron Nissim, it was shown that the value of shares of the banks since 2007 reflect declining values in categories of banking activities and changes in market conditions [6].

The assumptions, that the banks create value by means of its ownership of assets and liabilities (e.g. loans and deposits), bank revenue streams are homogeneous in terms of their profitability and sustainability, and the valuation of assets, liabilities or revenue streams changes in time according to changing market conditions, were the starting point for creating an econometric model.

Contrary to the opinion, that fall in value of P/BV for banks from the United States in the years 2006-2011 reflect mainly losses that are not recognized, it turns out, that other factors explain most falls. At the fixed model parameters in time, more than three-quarters of the index changes to book value, which took place from 2006 until the end of 2008, were predictable on the basis of changes in the market exogenous variables, using the model with the coefficients estimated in 2006. It was also confirmed that the amount of dividends to be paid has become more and more important for the equity of shares with each successive years of crisis [6].

Financial leverage impact on bank's valuation changed in the times of crisis – high financial leverage was an award-winning by the market prior to the crisis, however, during and after the crisis, the high value of this index affected lower valuation. The hypothesis of a positive financial leverage impact on the valuation of banks in the period before crisis was acknowledged also in earlier studies by Cheng Hong, Schenkman and Adrian and Shin [7], [13].

In their research, Huizinga and Laeven emphasize, that a sudden drop in the P/BV in American banks, was linked during a crisis, above all, with deliberate undercutting loss of banks, especially with significant mortgage exposures, which supposed to allow "saving accounting capital", leading to artificial over-estimated book value.

This was also possible thanks to the classification of securities which were secured by mortgages (MBS) to maximum maturity, and not available for sale [9]. Argumentation with a significant fall in the index P/BV in 2007 in American banks, which is the result of underestimating expected loss in book value occurring after a faulty application of accounting principles and attempting to keep high regulatory capital by banks and supervisors, was also invoked by Knaup, Wagner and Kolev [10], [11].

Yet the research by Berger and Bouwman, based on a comparative study of American banks' wallets capitalized high and low in situations of crisis (during a recession in the early 1990s and during the last subprime crisis) as well as quiet times have shown that better capitalized banks were valued by the market slightly better at the start of the 1990s, but during the last crisis [1].

A high level of bank capital may indicate a relatively wide range of risky operations or assets of low reliability, which require greater security capital [5]. In addition, a higher level of capital may reflect presence of inefficient management, which objective is not to maximize net benefit from financial leverage. In this case higher capital should also have negative consequences for the P/BV index [6]. An empirical relationship between the price and gauges of capital adequacy, therefore remains an open question.

In tests carried out on a group of banks headquartered in twelve selected OECD countries (Canada, Germany, France, Denmark, Germany, Greece, Hong Kong, Italy, Japan, Norway, Taiwan, the United Kingdom, and the United States) during the period between the first quarter of 2005 and the first quarter of 2009 it was evidenced that, in the period before the crisis, the differences in equity participation in financing sources do not have a major influence on return rates. In a crisis, a stronger capital position was linked with better results on the stock exchange, which was the most significant in the group of larger banks.

It has also been demonstrated in this group of banks, that the relationship between return rates and equity is stronger, when the security of bank capital is measured by the financial leverage indicator instead of Basel Capital Adequacy indicator [8].

3 Data and Methodology

Countries from the CEEC region constitute quite a diverse group. In view of a geographical position, institutional diversification, level of economic development and membership in international institutions they are assigned to three sub-regions: Central Europe (CE), Sout-eastern Europe (SEE) and the Commonwealth of Independent States (CIS). The CE region comprises: Poland (POL), Hungary (HUN), the Czech Republic (CZE), the Slovak Republic (SVK) and Slovenia (SVN), which have been members of the European Union since 2004, also the Slovak Republic and Slovenia are now also members of the EMU. An additional subgroup added to the research group are Baltic countries - Lithuania (LTU), Latvia (LVA) and Estonia (EST), as well as existing members of the Euro Zone. This paper will constitute the review together as a component of a CE group. The SEE sub-region consists of seven countries, which are characterized by a significant economic and political disparities. This region was enlarged by 9 countries - Romania (ROM), Bulgaria (BGR) and Croatia (HRV) - relatively new EU members and Serbia (SRB), Bosnia and Herzegovina (BIH), Albania (ALB), Macedonia (MKD), Montenegro (NIM) and DOKO (KSV) -West Balkan countries.

The CIS subregion includes: Russian Federation (RUS), Ukraine (UKR) and Belarus (BLR). Russia and Ukraine are the countries with the highest number of residents of the CEEC countries.

CEEC countries are characterized by a different level of development in stock exchanges. In relation to GDP the highest dynamics of development in recent years has been characterized by the market in Montenegro, but a very significant reduction of capitalization was noted by Estonian stock market (Fig 1).

Figure 1. Market capitalization of listed companies (% of GDP) in 2004 and 2013
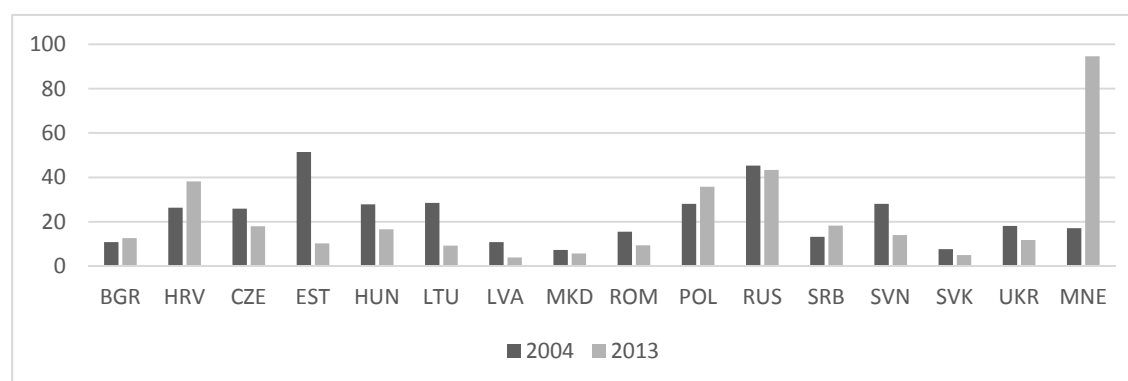
Source: Development based on the data from the database: World Development Indicators, http:databank.worldbank.org/data/reports.aspx; last entry: October, 15, 2015.

A strong differentiation in the level of capitalization of stock exchanges of the CEE countries confirms the need to conduct research in the sub-regions level.

Highly varied was also the level of financial security of banks traded on the stock exchanges in CEEC countries. For the financial safety assessment of four gauges was used based on equity (Tab.1).

Table 1 The average safety indicators of traded banks in the CEEC countries in the periods before and after crisis

Country	2004-2008				2009-2014			
	Total Capital Ratio	Tier 1 Ratio	Z-score	E/A	Total Capital Ratio	Tier 1 Ratio	Z-score	E/A
BIH	15.44	14.04	27.07	11.93	22.93	11.23	46.03	16.28
BGR	17.37	15.06	13.50	14.18	15.33	12.24	14.65	12.80
HRV	16.46	16.20	32.60	12.36	16.25	15.62	31.82	13.26
CZE	15.14	14.50	66.06	11.18	11.82	10.93	55.33	8.90
HUN	18.20	14.85	10.79	13.42	13.72	11.73	10.51	10.76
LTU	12.65	11.83	7.21	9.51	13.70	14.51	10.89	12.56
MKD	16.07	12.94	15.89	12.00	26.43	23.13	20.63	21.12
MNR	13.29	12.06	6.23	11.53	28.11	10.17	11.01	16.37
POL	14.58	13.50	32.33	11.52	14.01	12.44	30.77	10.56
ROM	14.34	12.73	8.37	10.01	13.77	11.02	10.40	11.19
RUS	15.28	11.20	14.05	11.31	15.74	12.75	17.14	13.44
SRB	24.73	23.73	14.67	21.49	29.52	26.85	13.47	35.44
SVK	14.03	12.57	33.61	8.30	12.01	11.07	26.95	6.53
SVN	7.37	5.16	-0.03	5.42	10.40	7.14	1.22	9.22
UKR	17.68	13.83	15.72	10.48	18.40	16.40	19.51	13.42
Avarage CEE	15.68	12.97	19.59	11.52	17.17	14.02	23.30	14.18

Source: author's own calculation.

The highest average value of TCR, Tier 1, and E/A during the whole period was achieved by banks operating in Serbia. While Serbian banks experienced a relatively low index value Z-Score (see Tab.2) which is a measure of distance from bankruptcy. With such significant values of E/A it should be indicated that Serbian banks have much higher variability in

performance than Czech, Slovak, Polish and Bosnian banks which on average reached significantly higher index values of Z-score during the research time.

To verify hypotheses concerning severe financial stability importance for growth of share prices of banks operating in the CEEC countries, panel research was carried out (Hausman test was carried out as well as Breuscha-Pagana test), for which the data was obtained from individual data from Bankscope database. The selection of variables in the model was conditioned by an analysis of existing research on the determinants of market valuations of banks and analysis of the correlation matrix of variables which were pre-selected based on literature review. In panel research two different periods were distinguished - before the crisis: years 2004-2008 and after the crisis: years 2009-2014.The analysis included only the data for the banks of CEEC countries quoted on the stock exchanges on 31 December 2014. Dependent variable was adopted on return rates from bank shares (RR), and the explanatory variables are presented in Table 2.

Table 2 Description of explanatory variables

Symbol	Description	Rationale / data source
a. macroeconomic variables		
Δ GDP	Real GDP growth rate (%)	Impact of the business cycle. Worldbank: World Development Indicators
CPI	Inflation, consumer prices (annual %)	Worldbank: World Development Indicators
HHI	Herfindahl-Hirschman Index for Credit Institutions	Banking market concentration. BSCEE [4]
SB	Total bank assets (% of GDP)	Size of the banking sector. Raiffeisen Research [12]
M	Rate of return on a broad stock market index	Author's own calculations based on data from stock index: BET Index (Bucharest Stock Exchange), SOFIX Indeks (Bulgarian Stock Exchange - Sofia), BUX Index (Budapest Stock Exchange), PX Index (Prague Stock Exchange), SAX Index (Bratislava Stock Exchange), BELEX15 Index (Belgrad Stock Exchange), PFTX Index (Ukraine Stock Exchange), OMX Vilnius (Nasdaq OMX Vilnius),OMX Riga (Nasdaq OMX Riga), OMX Tallin (Nasdaq OMX Tallin), WIG (Giełda Papierów Wartościowych in Warsaw). Data regarding index take into account paid dividends that come from different parts of stock exchanges and a database for Bloomberg.
b. bank-level variables (data source: Bankscope)		
ln_TA	Logarithm of Total Assets (in USD)	Bank size
L/D	Loans to Deposits Ratio	Bank profile
C/I	Cost to Income Ratio	Cost efficiency
ROE	Return on Average Equity	Profit efficiency
NPL	Non-performing loans to total gross loans	Loan portfolio risk
Z-score	The ratio of the return on	Measure of bank insolvency risk (probability of default).

	assets (ROA) plus the capital asset ratio (CAR) for a given year divided by the standard deviation of the return on assets over the period 2004-2014	A high level Z-score indicates low default risk. The value of the index crucially depends on the variability of returns and bank capitalization level, advantageous to well capitalized traditional banks with stable profit-base
TCR	Total Capital Ratio	Calculated in accordance with the methodology of Basel Committee.

4 Results and Discussion

On the basis of the panel studies, which results are presented in Table 3 (model of TCR as security measure) and Table 4 (model with Z-score as a measure of safety), it has been established co-existence of both differences and similarities in the factors affecting the valuation of banks on the stock exchange in the CEEC countries during the periods before and after the crisis.

Table 3 Panel model estimations (with TCR) for RR, CEE 2004-2014

Control variables	Pre-crisis period		Post-crisis period	
const	275.16	**	-21.437	
	(129.563)		(48.087)	
Δ GDP	-7.060	*	-0.877	
	(4.065)		(1.052)	
CPI	-1.923		-4.244	***
	(1.707)		(1.034)	
SB	-58.468		-40.739	**
	(47.686)		(20.92)	
HHI	-14.626		111.420	
	(205.32)		(108.972)	
M	1.071	***	0.977	***
	(0.128)		(0.114)	
ln_TA	-1.651		4.074	*
	(3.789)		(2.40)	
ROE	1.652	***	0.042	
	(0.534)		(0.129)	
C/I	-1.187	**	-0.129	
	(0.540)		(0.157)	
NPL	-0.697		0.042	
	(1.518)		(0.346)	
L/D	0.027		0.045	
	(0.117)		(0.068)	
TCR	-3.868	***	0.241	**
	(1.609)		(0.174)	

Note: ***, ** and * correspond to 1%, 5% and 10% significance level.

Table 4. Panel model estimations (with Z-score) for RR, CEE 2004-2014

Control variables	Pre-crisis period		Post-crisis period	
const	160.315	*	-20.242	
	(143.250)		(47.829)	
Δ GDP	-7.968		-1.109	

	(4.745)		*(1.013)*	
CPI	-2.091		-4.210	***
	(1.830)		*(1.075)*	
SB	-58.284		-32.894	*
	(56.726)		*(20.251)*	
HHI	-16.299		113.233	
	(230.315)		*(110.689)*	
M	1.026	***	0.965	***
	(0.139)		*(0.111)*	
ln_TA	-3.487		3.760	*
	(4.442)		*(2.352)*	
ROE	0.245	*	0.075	
	(0.173)		*(0.113)*	
C/I	-0.255		-0.109	
	(0.515)		*(0.152)*	
NPL	-1.042		-0.062	
	(1.632)		*(0.300)*	
L/D	0.168		0.040	
	(0.132)		*(0.035)*	
Z-score	0.270		-0.078	
	(0.285)		*(0.152)*	

***, ** and * correspond to 1%, 5% and 10% significance level.

First of all, it should be stated clearly that the rate of return rates of banks in countries surveyed, over the whole period of consideration was very strongly dependent on general mood prevailing on the financial markets, as can be seen in a validated confidence at the level: 99% relationship between return rates of bank shares, and return rate from the market index (the widely published stock exchange index of the country). During the period after the crisis there is showed a slight decrease in the average value B (beta) of banks in relation to stock market.

Very important, from the perspective of the research, is the change in the period after the crisis of the direction of impact of the value of the safety index TCR on a return rate of the analyzed banks shares. In the period 2004-2008 a high level of capital adequacy affected negatively the valuation of banks by stock investors. This impact was confirmed at 1 %. Moreover, prior to the crisis better perceived were primarily banks with a high rate of return rates from equity (positive value of regression index). Simultaneously, it should be noted that findings from the research for the US market in the lower valuation of banks with a high level of safety in the period before the crisis, 2007-2009 are also true for a diverse group of banks operating in the CEEC countries. In addition, in the years 2009-2014, for the tested group of banks, there is a visible change in perception of bank stability for its long-term business activity. With a confidence level of 95% it has been confirmed a positive relationship between the TCR and RR of banks. At the level of importance 5% it has also been confirmed that in the after-crisis period there was a negative impact of a relative size of the country's banking sector on the stock evaluation of the country's banks.

There is also a visible positive interrelation between the size of a bank and its shares return rate. Although this correlation is significant at a level of 10 %, it may constitute a hypothesis of profiting from large banks, also in the CEEC countries, additional bonus associated with the role of SIFI.

After the crisis there is also visible a strong impact of country's inflation rate on banks' shares return rates. This correlation may be a manifestation of the most recent use of non-standard instruments of central banks in some surveyed countries. Greater interference of monetary authority via supply operations, may mean that over fluctuation caused a greater interest in the capital market by stock investors, in particular in the shares of banks, which have a direct access to central banks financing. Impact of Z-score index on the return rates has not been confirmed in the CEEC countries banks in years 2004-2008 or in the period from 2009 to 2014. This is probably the outcome of the fact that this index is rarely applied to assess bank stability.

5 Conclusions

The research has confirmed that as the consequence of financial crisis the importance of financial stability of bank shares valuation has changed. This is seen especially in the case when it is used to assess total capital ratio. The emphasis recently placed by the supervisory authorities on raising capital requirements (Basel III, implemented in the EU countries by the directive CRD IV and CRR regulation) is likely to become an additional factor, increasing the importance of capital adequacy for return rates obtained by investors from the CEEC countries bank shares.

Acknowledgments

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THE REACTION OF ECONOMIC AGENTS ON THE REGULATION OF THE FINANCIAL MARKET

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ABSTRACT

The article is devoted to the description of the regulatory and legislative environment of financial market, theoretical basis of regulation and it describes the situation on the financial market in the short and long term from the aspect of decision-making by economic agents. Based on the method of content analysis and cited literature, theoretical and practical conclusions as well as apports from the research are formulated.

Keywords: financial market, economic agents, globalization, risks of the financial market, European Central Bank

JEL codes: E44, E58, F65

1 Introduction

In the period of increasing globalization and integration, the financial market fulfills a crucial role. International economic integration can be defined as a process of gradual mutual interlinking and convergence of different national economies, their economic structures, the process of deepening the interdependence between them as well as the gradual transformation of national economic structures into the new economic structure. The economic environment has significantly changed in recent years. These changes are accompanied by globalization, development of new innovative financial approaches and technical progress. The financial market is one of the most important segments of the economy, as it serves as a channel through which the funds flow between different economic entities. Creditors, debtors, financial intermediaries and institutions of the financial market act on it. The financial system is part of the economic system. The stability of the financial sector is essential for the economic system. Nowadays, many experts from the financial market debate about the financial stability of the euro area financial market.

2 Literature Review

In the literature, the financial system is defined as an environment that serves as a channel for transferring funds from those economic agents which show surplus (savers, creditors) to those economic agents which show the lack of funds (debtors). We can find two types of economic agents on the financial market:

- economic agents that do not spend all funds and have them available (creditors),

- and those agents that spend more money than they have available (debtors).

Economic agents (i.e. businesses, households or individuals, banks, governments) may be in any of these positions, depending on their economic, financial or other situation. In the literature, many authors often refer to financial market as one of the most important segments of the economy. The economic and financial crisis, whose first signs were recorded in 2007 and whose outbreak dates back to September 2008, increased attention devoted to the regulation of financial markets and financial services.

Vives [14] states that we can distinguish two periods in the recent history of financial sector. The first period is characterized by strict regulation and the stability from the 1940s to 1970s of the 20th century. In this period the competition among financial institutions was quite limited by the regulation of their activities, investments, separating the commercial banking from insurance services and investment banking (Glass-Steagall Act of 1933, USA). The stability of this period is in contrast with the increased number of bankruptcies in the next period, which is characterized by the liberalization of the financial sector.

If we understand the regulation of financial markets as establishing rules, it is necessary to say that these rules may be legal or out of law. The general legislative framework is set by the state. It can be formed through self-regulation of organizations, the rules of supranational organizations or social situation. We distinguish the primary regulation in the form of legislative orders, and the secondary regulation occurring in the form of notices, regulations, methodologies, etc. Legal rules are definite and enforceable, therefore they represent an indispensable element of the regulatory instruments. However, their optimum setting is essential. Too strict rules create excessive costs for market participants, as well as for surveillance institutions and avoid the creation of a competitive environment in the market. Too lenient rules, on the contrary, give rise to fraud, illegal transactions or deterioration of financial market participants.

The aim of financial market regulation and supervision is to create conditions for long-term stability and efficient functioning and transparency of the financial system as well as the safe functioning of the financial market. The role of financial regulation is to ensure the same conditions for all participants in the market, eliminate the risks associated with financial markets [10] and not least strengthen the credibility of financial markets in the public eye. Ensuring a healthy financial system is achieved through a variety of instruments and measures that are different in each country. In general, among the most important we can include the information obligations which the issuers and other entities are required to meet within the deadlines set by the lawmaker or regulatory authorities [13]. Legal regulation of financial markets is not uniform and there are differences in every country stemming from the different market structures, different goals and objectives that the legislators plan to achieve. The history of regulation has certainly a share on its present form as well as the legal system established in the country. The period after the World War II is a period when the idea of a united Europe took real shape. The idea of the political and economic unification was supported by efforts to exclude war conflicts in Europe in the future, efforts to create a European political power, increasing the efficiency of European economies and also by an attempt to create a large economic whole capable to compete on the world market.

The existence of a common regulatory framework or the existence of harmonized regulation is an assumption to create a single internal market.

Under the influence of the economic crisis, the European Commission focused its actions primarily on stricter control of financial institutions that are regulated by national authorities. In October 2008, the European Commission nominated a group led by Jacques de Larosière, which was aimed at creating a more efficient, integrated and sustainable European system of regulation and supervision and enhance the cooperation between European authorities of

supervision. Particular points of regulatory reform were proposed in the Larosière report, issued in 2009. The report is devoted to remedying the Basel II, and it requires higher capital requirements, the introduction of stricter rules for off-balance sheet items and better practices in implementing and evaluating internal controls. The report also deals with the role of rating agencies in the financial sector and it recommends entrust their regulation to the Committee on European Securities Regulation (CESR). The new rules cover the matters of a parallel banking, there is an adjustment to international standards towards enhancing the transparency of the valuation of assets and the attention is also paid to internal risk monitoring and management. The Group has also proposed extending the powers of supervisors and tightening penalties. The first measure, that has been adopted in response to the economic crisis, was the revision of the Directive on Deposit Guarantee Schemes and the Capital Requirements Directive. The act on rating agencies was also adopted and it has introduced the obligation of registration of all rating agencies operating in the EU. A part of a package of remedies of financial markets regulation accounted for two basic points [6]:

- Macro-prudential regulation will be carried out by a new body, the European Systemic Risk Board (ESRC) under the supervision of the European Central Bank (ECB).

- Regulation at the micro-prudential level will be in the hands of colleges of supervisors for each intergovernmental group which will be supervised by the three new European audit institutions, the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA), the European Agency for Insurance and Occupational Pensions insurance for employees (EIOPA).

Authors Hanson, Kashyap as well as Stein [3] indicate the vision of the possibility of macro-prudential supervision in the global context in their study. They point out that the theories of financial regulation are based on micro- and macro-prudential regulation. The role of micro-prudential supervision is to ensure the protection of the fund for deposit protection, prevention of moral hazard, as well as the efforts to internalize losses. According to the authors Peretz and Schroedel [8] the recession in the financial market has been deepened by these forms of risk:

- the conflicting goals - too much regulation makes the sector less efficient and weakens the competitive position of businesses,

- moral hazard - governments often underestimate the moral hazard during the economic upturn. Politicians and regulators take the necessary measures only in case of emergency,

- unregulated companies - one of the problems are unregulated or poorly regulated parts of the financial market. The increase in non-regulated activities left unnoticed a part of the financial market,

- financial innovations on the one hand bring benefits but on the other hand they increase the risk.

If the unregulated financial market is large, there is a risk of a spiral and heavy losses are made. The monetary policy strategy of the European Central Bank is based on two analytical pillars - economic and monetary pillar. The economic pillar focuses on fiscal targeting (i.e., analysis of economic growth, employment, price developments, exchange rate development and foreign trade development). The monetary pillar focuses on a longer period than the economic pillar. The monetary analysis draws from a wide range of monetary, financial and economic data and it uses a range of complementary tools and techniques. Generally accepted is the view that the monetary policy can contribute mostly to the economic welfare by

maintaining the price stability (the aim is to keep the inflation rate measured as year-to-year increase of the Harmonized Index of Consumer Prices (HICP) in the medium term close to the 2 % level and M3 growth at 4,5 % per year).

An important task of the European System of Financial Supervision (ESFS) is to analyze and monitor the links between individual countries and financial institutions, to monitor channels for the spread of shocks from one region to another, the common behaviour of market participants and joint prevention against risks. The European Central Bank (ECB), in preparation for the transition to a unified supervisory mechanism, from November 2013 launched a comprehensive assessment of the largest banking groups [17]. Crisis management in the banking sector is covered by Bank Recovery and Resolution Directive – BRRD.

Since November 2014 the ECB supervises the largest banking groups in the euro area within the single supervisory mechanism. The comprehensive assessment consists of risk assessment, asset quality review and stress test. Since the ECB announced the launch of a comprehensive assessment, banks increased their own resources by more than € 30 billion. Also three major Slovak banks are involved in the comprehensive assessment (Slovenská sporiteľňa, VÚB banka, Tatra banka), which have come under the supervision of the ECB since November 2014. Slovak banks passed the stress tests. The safety of Slovak banks is achieved through high profits from bank fees and high interests especially in the case of consumer credits. Currently, the ECB proceeded to quantitative easing of masses of money into the circulation as the low inflation, resp. deflation is a long-term problem in the euro area which is shown on Graph 1.

Figure 1 Evolution of euro area inflation in % in 2014
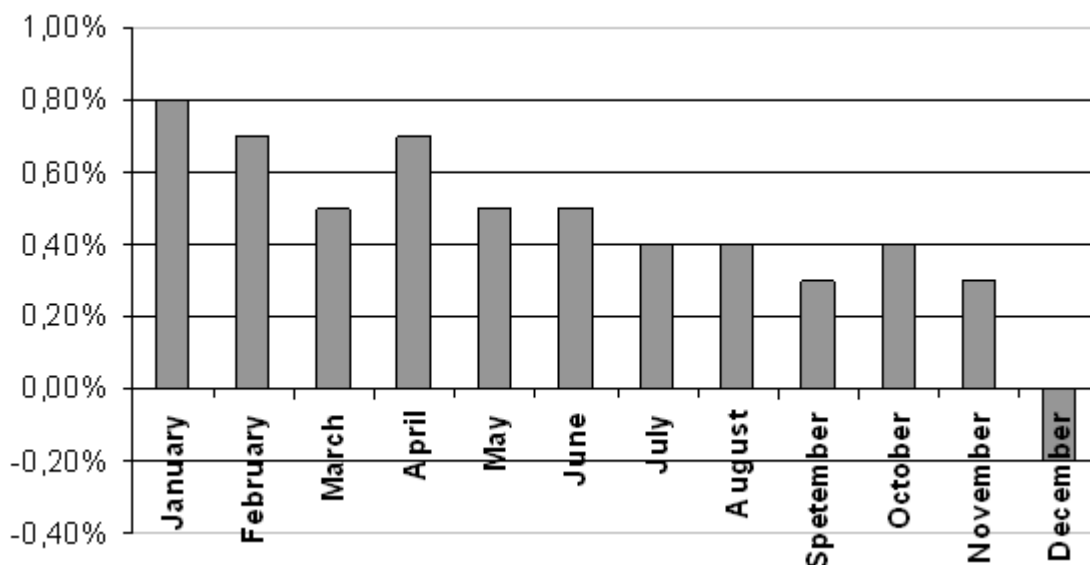
Source: own elaboration according to Eurostat data

Based on the data of graph 1, consumer prices fell year-on-year to minus (- 0.2 %) and the euro area has thus fallen into deflation for the first time since 2009. Whereby, the ideal situation is a two-percent inflation rate whose achievement is one of the essential objectives of the ECB [4].

Quantitative easing, resp. pushing money into the economy runs from March 2015 to September 2016, and it will reach € 1.14 trillion. Quantitative easing (QE) is the strategy of the European Central Bank, by which it seeks to stimulate the domestic economy in situation when holding the interest rates at zero level. The European Central Bank will purchase

securities from commercial banks (and other financial institutions) in order to increase the money supply in the economy. The ECB makes this step to encourage banks to lend, thereby contributing to faster lending. Loans will be directed primarily to the business sector, which will lead to a faster pace of economic recovery. Consequently, more employment will support household consumption and finally beat the deflation in the euro area. So pushing money into the economy could cause two scenarios, namely the promotion of business activity or attenuation of the business activity. Economic theory states that healthy economic growth comes only when entrepreneurs effectively meet the needs of their customers. The market situation is adverse, because there is a huge number of regulations and high taxes in the market. Currently, tax cuts and reducing the regulatory burden can contribute to sustainable growth. Nobel laureate in economics Milton Friedman was also aware of tax cuts benefits in all conditions ("I'm for tax cuts in any condition and under any pretext, whenever it is possible"). ECB decision on blowing money into the economy, many economists equate to regulatory actions of the Federal Reserve System in the United States. Regulatory targeting of the ECB was put in doubt by the economist of the Bank of England, Nick Butt, as the quantitative easing in the UK did not lead to more lending [19]. The impact of regulatory targeting of the ECB in the economy may produce two scenarios, namely the stimulation of business activities or attenuation of business activities. However, the fundamental problem in the euro zone [19] is that the entrepreneurs are extremely dependent on banks by contrast to the US market - eight out of ten euros that the companies have borrowed come from banks, the rest is the money from the capital market. In the USA it is reversely - eight out of ten euros that the companies have borrowed come from the capital market. The whole success of the ECB's programm will depend on the willingness of entrepreneurs and consumers.

3 Results and Discussion

An important part of macro-prudential policy is the countercyclical capital buffer. The role of this tool during the growth of the economy and the credit market to ensure the creation of a sufficient capital cushion to absorb losses in times of crisis. In times of uncertainty in the financial market which also stems from unfavorable macroeconomic developments of the EU countries, the importance of creating the counter-cyclical capital buffer increases [9]. According to the available data from the National Bank of Slovakia (during the reporting period from 2004 to 2013), the stagnation of the countercyclical figure lies in the decline of corporate loans from local banks in the majority of sectors, relatively low real estate prices, more conservative credit standards, as well as continuing labour market problems linked to the slow growth of the economy. According to the laureate of the Nobel Prize in Economics, Eric Maskin [7], the main problem of the euro zone, which weakens the stability of the financial sector, is the low production measured by GDP growth and high unemployment. According to Eric Maskin, reducing public expenditures in the EU is becoming counterproductive. It tends to attenuate the economy and when the economic activity declines, tax revenues are falling and debts rising. This situation is especially true in times of recession. The right time to reduce debts and raising taxes is when the economy is at the top. Government policy should be countercyclical. That is, increasing taxes and reducing expenditures is required if the economy is on the top. Conversely, lower taxes and spend more when the economy fails. The financial crisis does not only affect banks. Banks are the source of funds for many companies, corporate businesses and consumers. The crisis then tends to go further towards layoffs and bankruptcy of enterprises and consumers.

3.1 The impact of regulatory directive of the ECB on increasing interest rates of National Central Banks

The enterprise as an economic agent enters the financial market. Currently, European banks must meet stringent capital requirements (because of strict regulation of the financial market).

Table 1 Capital requirements for banks

Years	2012	2013	2014	2015	2016	2017	2018	2019
Capital Requirements for Core Tier 1	2,0	3,5	4,0	4,5	4,5	4,5	4,5	4,5
Capital Conservation Buffer	-	-	-	-	0,625	1,25	1,875	2,5
Core Tier 1 + Capital Conservation Buffer	2,0	3,5	4,0	4,5	5,125	5,75	6,375	**7,0**
Capital Requirement Tier 1 (bank's own capital)	4,0	4,5	5,5	6,0	6,0	6,0	6,0	**6,0**
Requirements for own capital without conservative buffer	8,0	8,0	8,0	8,0	8,0	8,0	8,0	**8,0**
Requirements for own capital without + Capital Conservation Buffer	**8,0**	**8,0**	**8,0**	**8,0**	**8,625**	**9,25**	**9,875**	**10,5**

Source: The Basel III accord / www.basel-iii-accord.com

Basel Capital Accord (Basel I) set capital requirements for banks for credit risk of at least 8%. In financial markets, creation of new types of risks (operational risk) occurred, therefore new methods of measuring the market were introduced and Basel I was replaced by Basel II (NBCA - New Basel Capital Accord). Basel II did not work during the financial crisis, therefore Basel III has been implemented. A conservative capital cushion and countercyclical capital buffer were introduced into practice in order to avoid the liquidity problem and to ensure sufficient capital for banks, and in the case of systemically important banks the capital requirement for capital adequacy will increase. Banks will create conservative capital cushion of 2.5 % for future adverse events. Countercyclical capital buffer will be applied at the level of 0,625 % since 2016. The creation of countercyclical cushion will only be required in a country with excessive risks. In the case of applying countercyclical cushion of 2.5 % the total capital requirement will reach 13 % of the bank's capital.

The total capital requirement according to the Basel III is as follows:

$$TCR = CR + CCB + CcCB + CSIB \tag{1}$$

where
TCR – Total capital requirement,
CR – capital requirement according to the Basel II framework,
CCB – capital conservative buffer,
CcCB – countercyclical capital buffer,
CSIB – capital reserved for systematically important banks.

Based on data of the NBS, banks operating in Slovakia currently meet the capital requirement according to the Basel II framework. Gradually a new concept of Basel III will be implemented till 2019, which will cause a gradual increase in banks' capital adequacy. More stringent requirements for raising capital adequacy of banks will make banks to shift the raise of capital into the price of credit. Loans to businesses will thus become more expensive, resp. unaffordable and will cause the opposite effect for development of business activities (i.e. to limit business activities). *Based on these data, we believe that the strict regulatory measures of the ECB and national central banks are likely to cause two scenarios in the economic sector, namely the continuance of commercial banks in the financial market with sufficient capital increase and the creation of buffers. Or commercial banks will not be willing to accept the pressure of regulatory measures and their financial activities will move into shadow banking, what consequently can cause deepening the financial market instability.*

In the case of total capital requirement (TCR) it is necessary to mention the fact that currently new risks exist and cannot be quantified. The inevitable problems are global risks, risks associated with information technologies (cybercrime), risks arising from climate change[1] and an ageing population [11] that will affect all economic actors (businesses, consumers, banks) and last but not least, will affect resp. disturb the stability of the whole economic system, including the financial system. In the long term, it will be interesting to watch the decision-making of market regulators. The national central banks of the Euro zone show different views in many aspects. Perhaps in each central bank there are two streams (i.e. opinion groups). One is represented by hawks who are more likely to advocate higher rates and tighter monetary policy. The second group is called the doves, and thus central bankers tend to lower rates and free monetary policy or monetary stimulus.

In the long run, the stability of the euro area financial sector is questionable. However, an assumption for ensuring the stability of the financial sector will be achieving favorable economic development of the Euro zone in the medium and long run.

Based on the content analysis and the results - risks from the perspective of financial market stability are as follows [15]:

- repayment of the accumulated Greek debt by EU Member States,

- risk of increase in the volume of investments in risky assets in global markets, which will increase the risk of the raise in risk aversion of investors,

- risk of a low return on assets in insurance companies and in funds (risk of low interest rates),

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[1] From the perspective of climate changes California is an interesting country, it is the eighth most powerful economy in the world. In July 2014 it showed loss of billions of dollars (about $ 2 billion) because of water shortage. According to climatologists the cause is the climate change made by humans, and the trends suggest that a similar drought will be repeated in the future.

- risk of worsening of the macroeconomic developments will encourage the increase in the costs of credit risk in the case of unfavorable macroeconomic developments,

- risk of deterioration in the financial market will be reflected in a higher sensitivity of banks to adverse developments in the financial markets,

- risk of weakening the profitability of financial institutions in the case of an increase in tax, resp. contribution liability. Banks along the bank levy to pay back to the Deposit Protection Fund. Moreover , banking union is preparing a new bank levy to the resolution fund and will increase fees for supervision,

- the euro zone's problem is that entrepreneurs are, in contrast to the US market, extremely dependent on banks. In the USA, the situation is reversed, eight out of ten euros that the companies have borrowed come from the capital market. In the case of instability in the financial market there is a presumption that the risks arising from the instability of the financial sector will also be reflected in the price increase of credits for businesses, what may influence the credit squeeze and business activities,

- the banking sector has been associated with moral hazard. It is based on trust, hence there is a public interest in maintaining the bank's activities in many cases, although this gets into a crisis situation. This creates a moral hazard that individual state will rescue the troubled banks by providing state aid. The main objective is to minimize the impact of banking crises on society as a whole, including taxpayers in order to maintain the financial stability as a whole,

- risks arising from macroeconomic imbalances in euro zone. Reducing the public administration deficits is insufficient due to low economic growth. A slow increase in economic growth and the current low inflation, which has gone into deflation, are indicators of the growth of the public debt in the medium run. The period of a very low inflation rate is dangerous for the stability of the financial market,

- quantitative easing by the European Central Bank from March 2015 to September 2016, is empirically associated with the creation of risks like inflation bubbles, overheating of the economy and major risks for banks,

- maintaining the stability of the financial system will be difficult, because the banking union represents a safety net for countless number of subjects, such as business and the banks themselves, but especially for the 500 million EU citizens,

- the banking union is built on three pillars. The core is a single supervisory mechanism, which gives the central bank the power of control over more than 150 largest banks in the EU. Rescue tools and fund, which currently shows € 55 billion, are understood under a unified mechanism of crisis management. The third pillar is represented by the Deposit Guarantee Fund, up to € 100 000. Member States have used € 1.6 trillion from 2011 onwards to rescue bankrupt banks [18].

ECB regulatory measures will influence the decision-making of banks and economic actors. ECB's strict regulatory measures will make banks to raise their own resources, which will be reflected in the increase in fees, the rise in price of credits and financial products in financial markets.

5 Conclusions

We have pointed out the specifics of financial market regulation in the EU in times of crisis, and we have assessed the impact of financial market regulation on the behaviour of economic agents. In times of uncertainty risk factors are the increasing globalization, weakening the European currency – euro and product orientation of enterprises. In times of globalization, companies seek to increase their competitiveness using innovative approaches. Re-engineering is becoming an important tool [2], which would help to enhance business efficiency while eliminating emerging risks in the financial market [12]. Despite the fact that in the European Union the protection of financial consumers is regulated, financial markets are highly fragmented in investment services and products. A new framework for prevention and dealing with potential crises in the financial market has been introduced. Council for crisis resolution and the national fund for the collection of monetary contributions of selected institutions arose. From January 1, 2015 the NBS took over the supervision and protection of financial consumers. Financial institutions, particularly banks, are currently undergoing some risks, which is essentially beneficial to the development of investment and technology. Banks to fund projects usually use foreign funds. The Slovak banking sector is stable in the short term (next three years). In the long term, the stability of the euro area financial sector is questionable. The decisive role will be played by strict regulatory measures of the ECB as well as decisions of the national central banks of the euro area, which will finally be reflected in the decision-making of commercial banks, enterprises as well as consumers. However, a presumption for ensuring the stability of the financial sector will be the achievement of favorable economic development of the euro zone in the medium and long run.

The stability and regulation of the financial sector of the euro zone in the medium and long term will depend on the development and course of fiscal consolidation as well as on structural reforms. The fundamental problem of the euro zone is the violation of 2 % inflation rate and the growth of government debts. The cardinal problem is the labour market, both in terms of persistent unemployment, especially of young people, and in terms of the taxation of labour (high labour taxation). The fundamental problem is the continuing trend of growth of debts of households, businesses, governments and municipalities. In the long run, it may be stated that the financial sector will be stable if it is able to smoothly perform its basic functions even when negative shocks occurs in the external and domestic financial and economic environment. The stability of the financial sector is the presumption for the healthy functioning of the real economy.

Acknowledgments

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PUBLIC ADMINISTRATION AND FISCAL POLICY AT LOCAL LEVEL: CASE OF UKRAINE AND SLOVAKIA

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ABSTRACT

This article is a first step for further research concerning fiscal decentralisation in European countries. Within mentioned first part we will concentrate on two selected countries – Slovakia and Ukraine. The aim of this article is to summarise and compare the peculiarities in the field of public administration and fiscal policy at local level in Ukraine and Slovakia. As a value of research can be considered the identification of main features and steps for fiscal policy of Ukraine through the experience of Slovak Republic.

Keywords: fiscal decentralisation, fiscal policy, public administration

JEL codes: H77, H70

1 Introduction

Public administration and fiscal policy could be considered as the main government tools at the local level. Let us start by giving definitions of the main terms. For the purpose of the research public administration at local level is the implementation of government policy at local level and fiscal policy at local level may be defined as the activities of local public institutions in managing local public revenues and expenditures.

Ukraine has chosen the way of realizing the concept of fiscal decentralization through the implementation of reforms in public administration and fiscal policy at local level. In order to archive the level of economic growth of European Union countries it is vital for Ukraine to absorb the experience of the countries – EU members, which have curtain similarities in public administration and public finance. Slovak Republic may be considered as an example for Ukrainian economy and finance improvement because of such reasons: both countries are unitary republics with three tiers of government and comparable structures of public finance at local level; have advantageous geographical positions; have joint state frontiers, and eventually are the Slavs with certain mental similarities of the population. But the countries are tremendously different in economic indicators, for example GDP per capita: Slovak Republic GDP (PPP) per capita is \$29,209 and GDP (nominal) per capita is \$16,138 [8], while in Ukraine these rates are equal to \$7,989 and \$2,199 [9]. The particular interest for Ukraine in studying the experience of Slovak republic is that Slovak republic became a member of European Union in 2004, and it has been facing the similar problems that Ukraine faces nowadays. We assume that after 10 years of Slovak experiences with the process of fiscal decentralization the main results might be used within the conditions of Ukraine. The

main task of the research is to analyse public administration and fiscal policies in both countries in order to identify main steps of the reforms of the public administration with the focus on fiscal policy in both countries.

2 Literature Review

The issues of public administration and fiscal policy and their implementation at the local level are reflected in many scientific publications. Scientists usually investigate fiscal policy in given public administration structures. Thus Bahl R. [1] concentrated his attention on tax assignment, Bird R. M. [2] investigated local taxes and their links with expenditures and accountability at the local level, Oates W. E. [18] worked on the second-generation theory of fiscal federalism, Savchuk S. [20] made a research on fiscal policy in Ukraine. Gordon R. H. [6] investigates issues of tax assignment, tax burden, and public services efficiency at local level. Super D. A. [5] claims that the relations between the central and local taxes and programs of the public expenditures are becoming controversial and fiscal federalism is facing the problems with fiscal cooperation. Taking into consideration common history of Slovak and Czech Republic in the current and future research of this field we will also follow publications of the Czech authors and Slovak authors, such as for example Neubauerová E., that concludes that decentralisation of public administration is not a guarantee of it´s efficiency. On the one hand it helps to division of powers and responsibilities on all level of public administration, on the other hand excessive decentralisation raises the risk of differences in providing public services or the promotion of public interests [15]. Válek J. and Kušnírová J. [22], that deal with parcial questions of these topic, principally tax system, in terms of tax collection. Marišová E. [12] studied the competence of government and change in the municipal finance in Slovak Republic.

However, taking into account the latest developments in the public sector in Ukraine, it seems to be reasonable to conduct permanent searching for the ways of overcoming the drawbacks in public administration and fiscal policy in Ukraine, both for the shortcomings existed before and appeared after the legislative changes.

3 Data and Methodology

Methodological background for the research constitutes general principles and methods of scientific research such as methods of analysis and synthesis, theoretical generalization and comparison. Theoretical and methodological base of research is publications of domestic and foreign scientists in the field of public administration and fiscal policy. Informative base of the study is normative and legislative acts of Slovak Republic and Ukraine, analytical reports of different organizations and experts in the sphere of public finance and fiscal policy at local level, researches results of domestic and foreign scientist, etc.

4 Results and Discussion

4.1 Case of Slovak republic

Slovak republic as a unitary country belongs to the young countries. The process of the reform of public administration and fiscal policy is strongly affected by historical consequences of previous regime. The very first stage of the public administration reform in 1990 brought considerable range of the application to the principle of subsidiary in practice. The first steps of the decentralization of the competences from the state administration to the local one have been implemented in 1992. The municipalities were given not only into self-

governing regime, but also this regime is still almost autonomous. The local government institutions, in contrast to local government itself, were built as the institutes with a strong centralization in terms of state administration. The regional self-government units didn't exist till the acceptance of the Law 302/2001. Eight regional self-government units have been created. The process of large fiscal reform in Slovak republic started in 2002, after ten years of forming regional and local governments since autonomous Slovak republic has been established in 1993. The first step towards fiscal decentralisation was the moving of the responsibilities. Year 2004 is well known because of huge tax reform accompanied by making tax system simpler, introducing the proportional tax rate of 19 % and many more. In 2005 fiscal decentralisation officially started and it was following partial aims: independence for local government authorities in decision making for using their own resources; responsibility while using public funds; justice when deciding about the allocation of public resources; transparency in determining the allocations through the objective statistical indicators [12].

In 2013 Slovak republic started another large reform process. It includes following action, which should be implemented till 2020: the integration of specialized local public administration – till the half of the 2014 (it has been implemented through the Law. Nr. 180/2013) [11]; providing costumer service centres for citizens – 2014/2015; performance of optimization of public administration, processes and structures of central public administration – 2014-2020 [14].

4.1.1 Public administration

There are three levels in the structure of public administration – central government level, regional level and local level. At the central level we will be talking about central government, at the regional level there are regional self-government units, and municipalities at the local level. Beside the mentioned structure of public administration, there are in total four budgetary components of the public administration: central government budget; regional government's budgets – municipalities and regional self-government units; social security fund's budgets; other public administration subject's budgets.[1] Moving at the local level we should not exclude description of the official relations between mentioned tiers. Based on the law about budgeting rules of local government, there are three forms of the relations between the central government budget and budgets of lower local governments: tax share; subsidies for covering the costs of the transferred competences; other subsidies [23].

In order to analyse public administration at local level, it is necessary to briefly describe the competences. There is important difference between original and transferred competences of the local governments. The autonomous operations of self-governments units and municipalities are expressed by their original competences: The original competences of the municipalities are as follows: education; transportation; nursing services; original competences; The original competences of the regional self-government units are as follows: education; transportation; social affairs; culture; 1st and 2nd classed roads; The transferred competences of regional and local governments must fulfil two criteria at the same time: central government's task has been transferred to local/regional level by law; state is covering the costs of the transferred performance [13].

4.1.2 Fiscal policy

As a key element of the fiscal reform at local level might be considered:

a) the transformation of the local fees into local taxes. Local taxes are original, actually owned income of the regional units. Even the laws about the local taxes are issued by central

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[1] In our further research we will work with ESA 2010 classification, by which classification of public administration is slightly different and it depends also on correct terminology use and translation.

government the regional self-government unit has the right to issue the general authoritative rules in order to amend it. This significant change in terms of local finances has occurred in 2005, since when the original competences have been not further financed from state subsidies, but from their own tax revenues – personal income tax and local taxes. To conclude, the difference is that while the transferred competences are financed by particular parts of the State budget, original competences are financed from the tax revenues of municipalities and regional self-government units;

b) providing the financial equalization through the personal income tax. Compared to the local taxes, the personal income tax has larger volume and share in tax revenues in generally. On the other hand, the importance for local budgets is lower, because municipalities and regional self-governments units can decide about the using of the revenue, but can't decide on the tax rate, tax administration, that remains in the competence of state. In 2014, the personal income tax share was as following: 67 % to municipalities; 21,9 % – regional self-government units; 11,1 % – central government. To compare, in 2015 the personal income tax share was as following: 68,5 % to municipalities; 29,2 % – regional self-government units; 2,3 % – central government. In the 2016 tax share should have increasing trend for local level of the public administration;

c) the change in setting of the subsidy mechanism. The following table shows us the increasing trend of the absolute values of the subsidies addressed to local levels. Nevertheless the absolute values can create a distorted picture of the reality, in the future the research we will be concentrated deeply on their structure and trends.

Table 1 Approved budgets of Central government (thousands €) (Slovak republic)

Years	2015	2014	2012	2010	2005[2]	2000*
Revenues	14 494 921	14 108 312	13 624 720	12 530 994	8538338,678	6 101 333
Tax revenues	10 037 549	8 690 538	9 227 958	8 619 969	6704953,993	5 477 196
Expenditures	17 478 558	17 391 918	17 299 980	16 277 000	10580558,02	6 698 824
Subsidies to lower levels of gov.	1 110 300	1 076 497	1 080 594	1 046 646	849728,9053	66 388
Total surplus / deficit	-2 983 637	-3 283 606	-3 675 260	-3746006	-2042219,35	-597490,54

Processed according to Budget Laws of Slovak Republic for particular years.

The figures, that follow in next part of analyse should create an overview for budgeting of local governments. Let's start with the Figure 1 and Figure 2 presenting the structure and ratio between particular parts of local budgets.

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[2] Amounts are converted from SK currency to EUR currency (1 EUR = 30,126 SK)
Source: processed according to approved budget laws (Ministry of finance SR). Retrieved from:
http://www.finance.gov.sk/Default.aspx?CatID=6958

Figure 1 Share of Revenues by Fund of Regional self-government unit's budget (Slovak republic, 2010-2015)
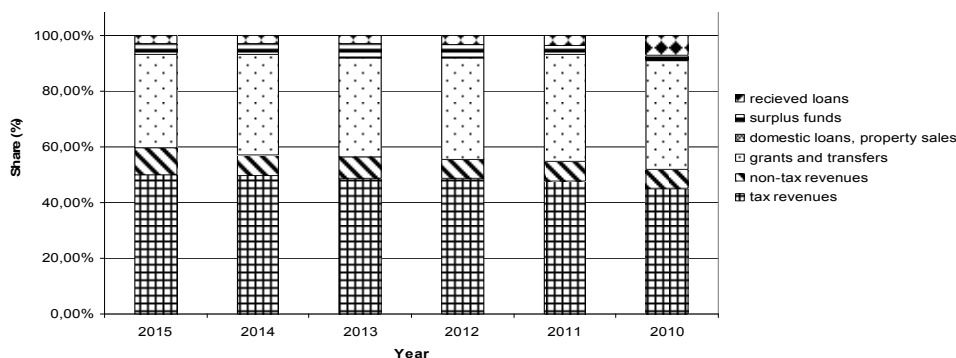
Source: processed according to Ministry of finance SR data. Retrieved from:
http://www.rozpocet.sk/app/homepage/rozpocetVCislach/rozpocetVerejnejSpravy/rozpocetOS/2015/

Based on both figures we can demonstrate the fact, that the tax revenues and grants and transfers revenues are bringing the most of the revenues for local budgets at the level of regional self-government units as well as at the level of municipalities. Based on the figures 1 and 2, we can see quite increasing trend of tax revenues at both levels. It can be connected with the government effort to increase efficiency of tax collecting, increasing tax burden during the recession and others. Figures 3 and 4 demonstrate the percentage share of the parts of expenditures at both local levels.

Figure 2 Share of Revenues by Fund of Local budget of the municipalities (Slovak republic, 2010-2015)
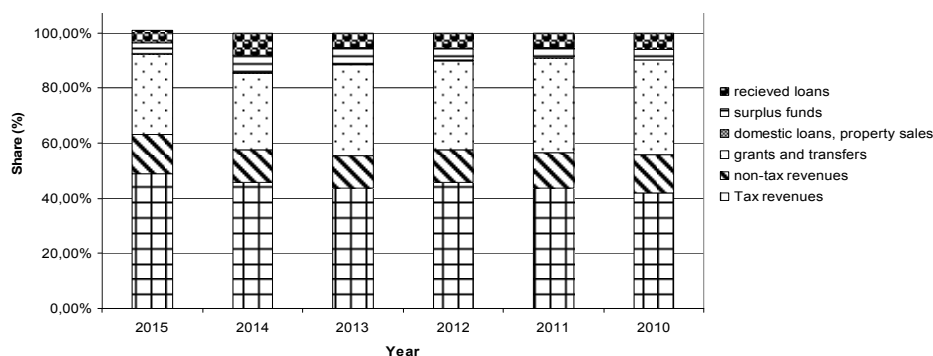
Source: Processed according to Ministry of finance SR data. Retrieved from:
http://www.rozpocet.sk/app/homepage/rozpocetVCislach/rozpocetVerejnejSpravy/rozpocetOS/2015/

Figure 3 Share of Expenditures by Fund of Regional self-government unit's budget (Slovak republic, 2010-2015)
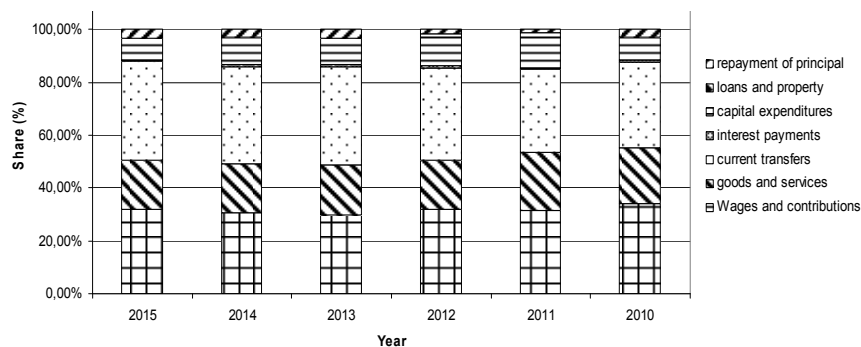
Source: processed according to Ministry of finance SR data. Retrieved from:
http://www.rozpocet.sk/app/homepage/rozpocetVCislach/rozpocetVerejnejSpravy/rozpocetOS/2015/

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Figure 4 Share of Expenditures by Fund of Local budget of the municipalities (Slovak republic, 2010-2015)

Source: Processed according to: Ministry of finance SR. Retrieved from:
http://www.rozpocet.sk/app/homepage/rozpocetVCislach/rozpocetVerejnejSpravy/rozpocetOS/2015/
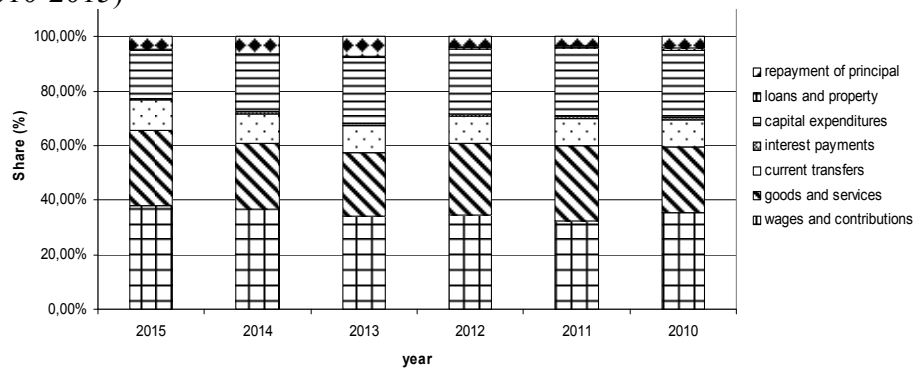
We can see that shares are more divided within the structure of the revenues. Local governments spend the most of their budget on the wages and contributions, and goods and services provided. There is a significant difference in the capital expenditures, where the local governments of the municipalities spend more than governments of the regional self-government units. On the other hand, regional self-government units spend significantly more on the current transfers. For the further research it is important to look at relative data of both countries compared to a GDP (as a % of GDP). Based on the data presented, we can conclude only that the expenditures on both levels are quite stable.

4.2 Case of Ukraine

The process of the recent large-scale fiscal policy and public administration reforms in Ukraine started in 2014 with the amendments to the laws concerning *inter alia* public administration and fiscal policy at local level. Previous attempts of reforming local finance systems leaded to no crucial results because of the lack of concentration on local fiscal policy, public administration and local taxation. In 2014 the main processes of fiscal decentralisation launched including reorganizing of public administration system at local level (communities' amalgamation) and increasing the fiscal autonomy of local self-government (new set of local taxes and fees).

4.2.1 Public administration

Nowadays Ukraine is a unitary state with the following administrative-territorial structure: 24 regions (oblasts) with each oblast further divided into districts (raions), Autonomous Republic of Crimea and special status cities of Kyiv and Sevastopol; 490 districts; 459 cities, 783 villages and 10,278 rural councils [4]. From the state proclamation the public administration in Ukraine consists in executive authorities and local self-governments. The structure of public administration is similar to Slovak republics. There are three levels of government – central government level, regional level and local level. Local government relies on administrative division. The implementation of delegated executive powers is also under the control of the relevant executive bodies. Ukrainian system for governing the localities is characterised by a high degree of duality and overlapping competences between elected local councils on the one hand and the administration of the central state on the other, eroding the development of strong self-government at the local and regional level, and undermining the effective provision of public services. As it is stated by Budget Code of Ukraine, they are responsible for expenditures on education, health, culture, physical culture and sports, social welfare, environmental protection, etc. but on different levels [3].

There are several stages in formation of the current model of governance concerning administrative reform efforts in Ukraine. The years between 1991 and 1996 were quite chaotic. In 1997 a State Commission on Administrative Reform in Ukraine was created that approved the Concept of Administrative Reform in Ukraine in 1998. In the same period, the Parliament enacted some other laws relating to public administration: the Law on Local Self-Government in Ukraine (1997) and the Law on Local State Administrations (1999). During 1999-2001 presidential decrees significantly updated the system of central executive bodies. Government agencies were formed based on the European model. During 2005-2010 Ukraine experienced political turbulence, and as a result only several important bills were passed during this period, such as the Law on Central Government, Law on Civil Service and the Law on Cabinet of Ministers of Ukraine. In 2010-2012 changes in the government were implemented immediately after the amendments to the Constitution (through the Constitutional Court), which returned more powers into the hands of the head of the state [4]. In 2014 the 2004 Constitution was reinstated and parliamentary commission for constitutional reform was set up to work on horizontal division of powers and decentralisation reform. Public administration reform is now in process in Ukraine, but according to the National Reforms Council [16] implementing of its stages is significantly behind the schedule. The main shortcomings concerning local issues are as follows: development and adoption of law(s) on decentralization of essential administrative services (20 % implemented); adoption of a new law On Service in Local Self-Government in line with European principles of public service, supporting regulations to implement the new Law (70 %); development and adoption of indicators of effectiveness and efficiency of government performance and civil service including effectiveness of the use of public funds (0 %), etc.

4.2.2 Fiscal policy

As fiscal policy at local level is about the activities of local public institutions in managing local public revenues and expenditures, we will look through main revenue sources and directions of expenditures in recent years. Local budget revenues accounted for 22,2 % of consolidated budget revenue in 2014. At the same time, changes occurred in the structure of revenues by budget fund. Thus, the share of local budget revenues for the General Fund decreased by 2,0 ppt and increased for the Special Fund by 1,2 ppt (see Figure 5). According to the amendments adopted, the revenues of the general fund of local budgets have been expanded through: transferring from the state budget 100 % of the administrative services fee, 100 % of the customs duty, 10 % of corporate income tax for the enterprises of the private sector; transferring the single tax and property tax (taxation of real estate and cars with large engine capacity) from the budget of development, and environmental tax from a special fund (except radioactive waste) while increasing its share to 80 % (the previous rate was 35 %); imposition of such new compulsory payment as excise tax on retail sales of excisable goods. In turn, the share of personal income tax (one of the major tax sources of local budgets in Ukraine) has changed: in accordance with the amendments 25 % of tax revenues from the territory of regional centres, districts, budgets of amalgamated territorial communities is allocated to the state budget; 15 % – to regional budgets; 60 % – to the budgets of regional centres, district, amalgamated territorial communities (60 % of revenues in the territory of Kyiv allocated to the state budget, 40 % – to the budget of Kyiv) [3].

Proclamation of the course towards decentralization in Ukraine has led to significant changes in the tax and budget legislation. Changes adopted in Budget and Tax Codes of Ukraine under which the budget is executed in 2015 is the most significant shift towards fiscal decentralization in recent years designed to solve the problem of constant shortage of financial resources in local budgets. Major changes in the Tax Code relating to local fiscal policy concern local taxes and fees. Thus, the excise tax on retail sales of excisable goods has

been imposed; property tax has been reformed by including tax on real estate other than land, transport tax, and land fee in it; simplified taxation and reporting system has been reformed, etc. Thus, despite the reduction in the actual number of local mandatory payments from five (single tax, tax on real estate other than land, the fee for parking of vehicles, tourist tax, fee for parking certain business activities (fee for trade patent)) to four (property tax, single tax, fee for parking of vehicles, tourist tax) [21] this year an increase in revenues from local taxes is expected.

Figure 6 shows the increase in local taxes and fees in local budget revenues (without inter-budget transfers) as a result of ongoing reforms. Nevertheless, personal income tax remains the most sufficient local tax revenue, even though it is not local. In this case the use of state taxes as an instrument of public finance for local social and economic systems development on the one hand is due to the problem of "soft budget constraints" [14], and on the other hand concerns the restriction of the ability of local governments to influence local economic development systems using tax instruments (such as setting tax rates and benefits) [1, 2].

Figure 5 Shares of Revenues by Fund of the State and Local Budgets in Consolidated Budget Revenues in 2010-2014
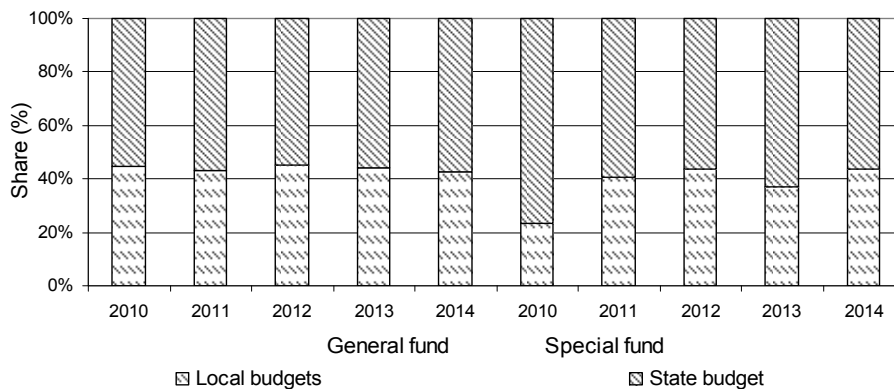
Source: IBSER Budget Monitoring: Analysis of Budget Execution (2014, 2015) [7]

Figure 6 Structure of Local Budget Revenues in 2010-2014
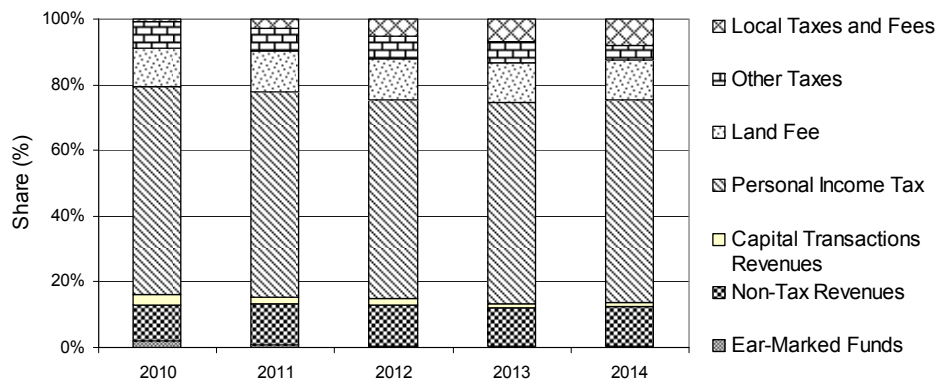
Source: IBSER Budget Monitoring: Analysis of Budget Execution (2014, 2015) [7]
Notes: as it is mentioned above, from 2015 land tax became a part of property tax (local one), which will definitely increase the share of local taxes and fees in 2015.

Figure 7 Shares of Expenditures by Fund of the State and Local Budgets in Consolidated Budget Expenditures in 2010-2014
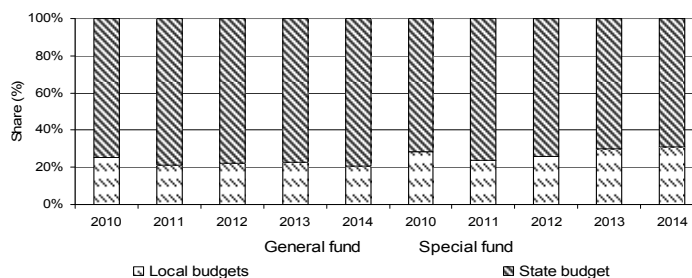
Source: IBSER Budget Monitoring: Analysis of Budget Execution (2014, 2015) [7]

From the expenditures side, local budget expenditures accounted for 42,7 % of the consolidated budget expenditures in 2014, which is 0,4 ppt less than in 2013. Also, the share of General Fund expenditures decreased by 1,4 ppt year-on-year and amounted to 42,6 %, and the share of Special Fund expenditures increased by 6,6 ppt to 43,5 % (see Figure 7). The level of GDP redistribution via the local budgets of Ukraine (the share of local budgets in the GDP) amounted to 14,27% according to the 2014 data [7]. If we compare revenue and expenditure sides of the local budget in Ukraine (Figure 5 and 7) it is obvious that local revenues do not meet local expenditures. As usual, the majority of local budget expenditures are used for society and culture (education, healthcare, social protection and social security, culture and arts, physical culture and sport) according to the structure of local budget expenditures by functional classification. The structure of local Budget Expenditures by economic classification is given in Figure 8.

Figure 8 Structure of Local Budget Expenditures by Economic Classification in 2010-2014
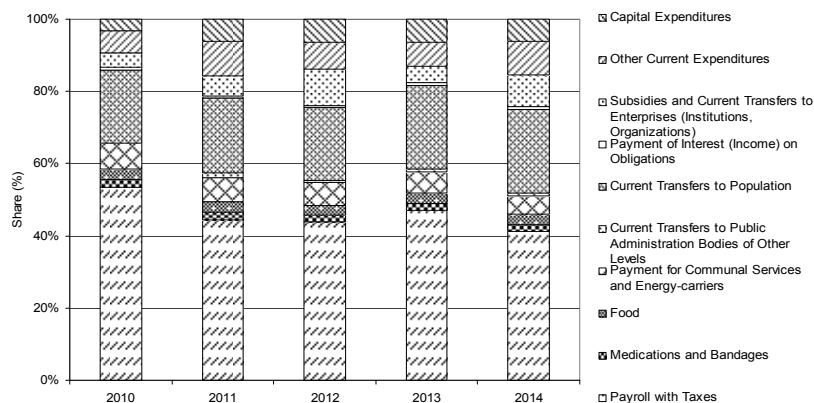
Source: IBSER Budget Monitoring: Analysis of Budget Execution (2011, 2013, 2015) [7]

The structure according to economic classification shows us that payroll with taxes have the biggest share among local budget expenditures, and capital investments have relatively insufficient share, which is a sign for probable problems in the future.

5 Conclusions

Through this article we brought a brief overview, by which we wanted to point out that for the future it has a sense to do comparative research between Slovak republic and Ukraine. Nevertheless Ukraine is not EU member, there can be found many common elements in development of both countries (historical evolution), included also implementing the similar fiscal policy tools at local level. We identified following similarities: structure of public

administration seems to be strongly similar (further research will be aimed at its pecularities); figures based on data of both countries show us similar structure (the ratio between particular parts of the revenue's and expenditure's structure is more or less similar).

It leads us to the conclusion that for the furthure research the data should be comparable. System elements seem to be comparable. Deeper analyse requires time and it exceed the framework of the article. It is hard to predict the future evolution of Ukraine within the internation economic space, but Slovak Republic as a geographicly close country can't be immune to the evolution of the country, with which we share a border that is the border of Schengen area, on top. It's even more positive fact that Slovak republic has something to offer (as an inspiration for Ukraine) in terms of the implementation of the main experiences in the field of the fiscal decentralisation process.

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THEORETICAL APPROACHES TO INTERNALIZATION OF NEGATIVE EXTERNALITIES

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ABSTRACT

Our planet´s population undergoes an intense globalization process. All governments´ representatives, as well as the entrepreneurs in all industry branches should, the sooner the better, become aware of the threat the globalization and modernization processes represent for the quality of the environment and of the impact this phenomena have on all people´s lives today as well as on the lives of the future generations.

Keywords: environmental pollution, external effects – externalities, internalization of negative externalities

JEL codes: Q51, Q56, Q57, F64, H23

1 Introduction

The concept of externalities is a relatively important part of the economy and also other scientific disciplines. At present it is discussed mainly from the view of harming the environment. Problems related to environment pollution result from the existence of side effects in the area of production and consumption. These side effects are termed by the economists as external costs – externalities.

2 Theoretical approaches to determine externality

Nowadays the term externality is discussed mainly in connection with harming the environment. However, externalities are also a common part of our daily life.

We can observe contradictory views of individual economic schools and renowned economists both on defining the term externality, as well as on the concepts for solving externalities. Some of them doubt the very existence of externalities, others refuse to recognise their existence as a cause for state interventions and tend towards private solutions to externalities [5].

There are many authors who have significantly contributed to the theory of externalities, among them R. A. Musqrave, J. E. Stiglitz, H. S. Rosen, A. C. Pigou or R. H. Coase. They are distinguished authors dealing with public finances and some of them are Nobel laureates for economy.

Externalities arise when someone does not bear total costs of his activities, or on the contrary, when he does not get the total benefits from his activity [3]. Holman does not consider chemical, physical or biological processes to be the cause of externalities; however he explains them as violation of someone's rights.

According to Rosen, externalities arise when one person's action impacts the well-being of other person and this process is carried out outside the market. In his opinion, negative externalities have negative influence on economic effectiveness because undesired effects are

not included in the products' prices. Externalities can be produced by consumers and companies; they can be divided into positive and negative ones. Their cost depends on the object and scope of damage. Rosen thinks about including the externalities into the category of undesired public estates, mainly because their consumption is unrivalled and an individual is not excluded from the consumption [6].

Negative externalities, which represent one of the most serious problems in the current world, prevail in economy. According to Stiglitz there are not only negative but also positive externalities. In his opinion, externalities created by individuals or society increase the costs of other individuals, as well as the costs of the whole society. On the other hand, in case of positive externalities, the actions of an entity in turn bring positive benefits to other entities [8].

In our view, externalities can be characterized as side effects of economic activity of people transferred to other entities without competence. They do not pass the market, i.e. they are not valued at market principles. Those that do not bear all the costs of their economic activity, will tend to produce more than the socially optimal amount of goods, which are its result [4].

3 Approaches to solving negative externalities

Environment economy recognizes as one of the major causes of environmental damage the existence of negative externalities. The negative externalities result in the fact that product prices do not reflect the social costs of production, as well as they do not reflect reality. The absence of costs that are associated with the emergence of negative externalities in prices means that the burden of cost increase is not borne by the one who caused them, but by someone else.

In addressing the negative externalities the key issue is considered to be determination of proprietary rights and punishment of negative externalities production. But in reality it is often difficult to determine proprietary rights and to find a link between the externality producer and externality itself.

Economic science provides a variety of approaches to address negative externalities. All solution concepts can be classified into two major groups, i.e. into the private solution of externalities and public addressing of externalities.

3.1 Public solutions to negative externalities

Public solution of externalities was pursued mainly by the economists of classical school. Their main representatives are A. C. Pigou and P. Samuelson; they both start from the Pareto optimum. Pigou tax is a tax levied on each unit of the polluter's output in the amount equal to the marginal damage which affects the efficient level of output [6].

According to representatives of the classical school of economics the government interventions in the economy are well-founded and the most effective tools to combat the negative externalities are considered taxes and fees. Using taxes in a non-market way increases private costs and their approximation to social costs.

Quantitative expression of social costs is not easy, and it is therefore difficult to define the optimal tax liability for producers of externalities. Nevertheless, taxes are the most common form of regulation. Among such taxes we include consumption taxes (e.g. the tax on tobacco and tobacco products, ecological taxes, etc. [2]. One of the negatives of public solutions can be the issue of costs quantification, as well as the fact that classical economists base their assumptions on perfect competition.

To correct negative externalities, it is beneficial that the businesses are switching to the use of the so-called green technologies that reduce the volume of emissions. In many cases, these changes represent increased costs and also lower production for companies. The system of portable emission permits uses market relations between producers of negative externalities to degrade negative externalities. In such case, the respective government sets a maximum possible level of pollution and the number of pollution permits. Basically, it means the sale of unused permits by a low cost company to a company that has high costs to clean up pollution [4]. Emission permits have the character of securities and are traded on the market.

In addition to subsidies and Pigou's taxes, governments use also other methods to solve negative externalities [7]:

- In practice, it is impossible to completely eliminate or ban the externality. The respective governments issue legal rules that prevent the formation of externalities (e.g. a company is obliged to build a purifying plant, etc.). Another example may be also the EU emission trading system.
- The government can motivate companies to protect the environment through a single subsidy suitable for a project that will decrease the degree of pollution in future and demands a lot of capital.
- Backup systems (deposition-refunding) stimulate reuse, recycling and disposal of a product. It is an effort to reduce waste by supporting its multiple uses and recycling. Their environmental efficiency is determined by the percentage of their economic return. Whether it is an effective solution of environmental problems depends on the comparison of the cost of these systems with the cost of alternative solutions with similar environmental results.

The Government may replace private companies by state institutions (budgetary and contributory organizations) and provide the activities with lower cost. This generally refers to industries that produce positive externalities, such as health and education.

The existence of externalities can be also seen as a failure of the market mechanism. We consider it logical to let the government contribute to problem solving by their interventions. But not in every case state intervention is needed, as there are known also several alternative solutions for negative externalities.

3.2 Private solutions to negative externalities

One of the possibilities of private solutions to negative externalities may be an agreement between individual parties or legal procedure. In given solution it is necessary to determine proprietary rights and ensure their enforcement. In addition, two opponent sides are necessary, the side of claimant and the side of abuser. Claimant, who is at the same time the aggrieved party, files a complaint on abuser who is guilty of detriment to the claimant [2].

Another way of private solutions to externalities can be direct determination and also enforcement of proprietary rights. The above mentioned method is promoted mainly by economists of the Austrian school (Block, Mises) and representatives of the Chicago school (R. Coase). Proprietary rights are sold to a particular entity, which also takes care of their administration and receives fees for their use. Mainly externalities with regional or local scope are treated by the said method. Externalities in nationwide scope are solved through public system of regulation. We often encounter the fact that the state property is contaminated to a greater extent than in the case when it comes to private ownership.

3.3 Approaches focused on internalization of negative externalities

Internalization of externalities is another important type of externality solution falling into the category of private solutions. The most significant economists, who addressed the issues of internalization of externalities and contributed to the greatest development of this theory and at the same time pursued the achievement of the social optimum were above all: Pigue and his ecological tax, application of prices according to W. J. Baumol and W. E. Oates, Coase's theorem which favours a decentralized system of internalization of negative externalities. Coase's theorem supported J. Buchanan a W.C. Stubblebine [1] but underlined substantiation of state interference in cases where transaction costs are higher than the benefits from the inclusion of externalities in the costs of the business sector.

The issues of internalising the negative externalities were addressed also by other well-known economists such as Dales, Titenberg, Pearce, Zylicz, Dochniarz, Bolan, Porter and others. Each of these economists enriched the theory of internalization of negative externalities by his view, demonstrated the existence of institutional, market and political errors that are caused by the absence of proprietary rights to the elements of the environment, pointed to the exclusion of negative externalities from the costs of polluters, but also drew attention to the negatives of providing subsidies. The above mentioned consequences of errors are that the producers do not receive correct information on the actual scarcity of resources that are being depleted, neither on ecological damages caused by their production or consumption. .

Producer of an externality should as if merge with an entity that is damaged by the externality. Encouraging entities to such behaviour is very complex and therefore internalization occurs both with positive and negative externalities. Among the minuses of the above mentioned solution can be also included imperfect information and also the fact that from the historical point of view the proprietary relations have not been adequately defined, as well as high transaction costs of creating a contract at internalizing externality.

4 Conclusions

The concept of externalities is an important part of the economy, public finance, as well as other scientific disciplines. In the current worldwide globalization process the problem of externalities is discussed mainly in terms of environmental damage and also its protection.

Economic theory recognises different approaches to address negative externalities. The primary solution concepts can be classified into two main and most important groups, namely private solution to externalities and public solution to externalities.

The paper objective is not to provide a comprehensive interpretation and overview of theoretical background to the solved issues. The reason is both a broad spectrum of approaches of economists and also the unavailability of original resources. The aim of the paper was to draw attention to solving the issues of negative externalities.

Solution to the issues of externalities is offered through regulation limits, Pigou's tax, Coase theorem or tradable emission permits. It depends on the decision of respective governments how individual externalities will be regulated, whether by taxes or other mechanisms created by the state.

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ANOMALIES OF PROCESS RISKS AND STRATEGIC MONITORING

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ABSTRACT

The assumption of decomposition of global risks defined by its value of likelihood and severity was one of the main objects of the basis of research. The main formulation of hypotheses and detailed discussion of the paper is to define the starting point for the analysis on the basis of causality of risks to the processes that determine the formation and risk influence to the overall examination system. The analysis is based on a function and systematic approach consistent with the assumptions of adverse selection and the role of moral hazard.

Keywords: components of risk, expected utility theory, financial risk, information value

JEL codes: G32, D81,

1 Introduction

Despite the definition of axiom of rational behaviour of subjects in their proceedings and decision making under conditions of uncertainty and risk in the evaluation of all available information, not every decision of economic operators is settled on a maximum limit of usefulness or budgetary curve. Therefore, in assessing the risks in the global environment is not possible use the decisions based on the axiomatic assumptions of perfection of the functioning of financial markets, since not all entities in their decisions are based on the assumption of rationality. The dynamism of the global policy factors is transformed with the higher rate of variability. It is influenced with higher level of intensity, and so weightiness that the role of local governments and countries are getting into the back seats and to the fore in international action of cross-border risk factors come in the international context [18]. The dynamics of these changes is so significant, that international cooperation cannot eliminate the significant factors in the section of their own jurisdiction and therefore, is based on the design of proposals for "grey" measures.

2 Likelihood and severity

The implementation of an effective system to assess the effectiveness of the management for the identification and assessment of the risk is based on three factors: early identification, assessment of the likelihood and the setting of priorities for the allocation of the resources which are available for control. Process risk is a specific element on the market. In its identification were therefore used assumptions of historically known traditional approaches.

On the basis of economic theory each individual is a rational subject, not only participant on the financial market. Risk taker prefers a higher rate of return before the lower rate and lower rates of risk before higher. Decisions of the rational individual are based on all available and identified information and to evaluate them individually and then interact using the form of reciprocally. After careful consideration of all the information, which is dependent on the value of adopting a decision and at the same time the future expected values defined

expectations of preferential "states of nature". In the case that would have met all the prerequisites for the decision-making of individuals decision taker, the market would be effective and would avoid any variations that cause stock bubbles, securitization, the existence of the funds and the derivative market. As well as financial market imperfections arise from a lack of knowledge of information or its evaluation [1]. Information asymmetry explains the emergence of generic situations, where one of the participants has more information than the counterparty.

Research on the information asymmetry dedicated Michael Spence and Joseph Stiglitz [3]. Their specification of the area is based on adverse selection and the extent of moral hazard. The option of adverse selection made up of the decision maker was given the opportunity, or to risk insurance cover. The evaluation has proven that the risk in the event that the insurance option elected by the decision taker the rate of its exposure is higher, than the other decision-makers. Because of its action on the risk situation will be preceded by the selection of the insurance of the risk situation. Nevertheless, insurers are trying to achieve a maximum degree of saturation of information to remove the additional level of risk, which has an impact on the implementation itself, that in the event of risk by the imperfections of information chosen by the lower rate of compliance of insurance risks, or compensate for the increased cost of insurance, which shall be borne by the insured person [8]. The degree of moral hazard lies in the conduct of the policyholder and the insurer to change the conclusion of the insurance coverage for the risk of the operation in the form of loss of precautionary motive by risk taking.

Constructing a selection of an investment instrument is therefore necessary to take note of all the information that is on the market. In accordance with the provisions of the basic theses of the efficient market hypothesise, the price reflects all relevant information at any time – and is, therefore, the effective information. Price change is therefore possible only in symbiosis of changes or new information. This is the argument about using the "random walk" and elimination of the risk, therefore, it is not random. The effectiveness of the information covers only the essential and relevant information on three levels: low level, semi-high level and strong form. In contrast to the low level of semi-high level is based on historical and current information from trusted information system and public available information, and their value is fully displayed in the price of the financial instrument notice.

In the weak form only historical information are rated and technical analysis would not have sufficient explanatory power. The strongest form contains panel of public resources, as well as confidential sources, and therefore it is not possible to increase the commercial position of the perfect financial markets [2]. Using the mathematical analysis of the efficient market theory the explanation was based on the considerations – Louis Bachelier, in conjunction with the Samuelson definition [21] and Fama´s analysis [3] - on the active market perform just well informed and intelligent investors, who are entering the market for the conditions for perfect appreciation of stocks – reflecting all available information which are correlated with the reference value –benchmark [4].

The reason for the absence of an effective build-in mechanism, which would equalize values of likelihood and severity, is marketing. If there was a highly effective built-in stabilizer in global risks, it would be necessary to explain to the participants in the international market, or even influence behaviour. If we start from the premise that there are two groups of participants in the market, and one of them is informed on a higher level than the latter, so at the same time, gain well informed participant means the loss of less informed group of participants [8].

On the basis mentioned above, it is important to monitor the effectiveness of the monetary allocation. The primary effectiveness is in the management of the commercial banks. This efficiency is determined by the perception of the risk at the local level in the final evaluation in relation to legal or natural persons. For the effective evaluation of the risk is the result of the aggregate increasing in the monetary supply. Using the tools on the secondary allocation through capital market authorizing the issue of government bonds or a state debt securities (model CAPM) and thus can effectively influence the volume of monetary supply in the domestic market as well, as on international market. Using this intervention an aggregate monetary supply thus remains unchanged.

Rowe´s [20] theory is based on the definition of risk as the possibility of unintended negative consequences of events or activities. This approach is not necessary associated with additional costs, since it is possible for the entity to implement the decision to undergo or avoiding risks. For definition of global risks, the possibility is but improbable. Rescher´s research [19] is based on the original concept of risk, which defines the risk as the possibility of occurrence of a negative result. That premise also affects the possibilities of its measurement. Defining its value is based on the method of definition of individual risk components and their combination. If it is possible to subsume weights to individual components of the identified risks, it is necessary to determine the penetration of global and microenvironment. This set brings then more likely targeted measures immediately after the identification of potential risk even at its inception, not only in the course of its implementation. Kaplan and Gerrick [11] scheme out to evaluate the risk values of the three components as essential components of risk. They are composed of three files that contain the structure of the course of the various scenarios or individual course of events.

The dimension or severity of the consequences of using common denominators can be measured by the precisely financial definition of price function. The severity of the risk is therefore determined by the general scope of its impact on the likelihood of the transformation of the value of the universal indicator. Its demonstrations are settled on the value of a dimensionless unit, as in the utility function [4]. Correct identification of the selection units as appropriate benchmarks to measure the impact affects the scope of the objective function. This function must represent diverse risks in the global environment through the expression of the macro and micro environment.

Morris and Hough [17] get along on multi-criteria decision on sources of risk. It is therefore necessary for identification of risks to take into account the disposition of resources and analysis on the response, followed by summarization. Their definition is based on a clear hierarchy of setting clear goals and performance criteria reflecting the requirements of the various parties. Mutual evaluation seeks to create a strategy for identifying risks which may be different from the strategy of the objectives or management strategies. Using the type of reduction, we receive generic use tools to identify risks, which deal not only by threats, but also by potential benefits, from which they arise. Flanagan and Norman [4] focus on the threat of the potential risk of loss, in case when the entity (averse to risk) fears of the minimum level of loss. Based on the situation of the global environment in introducing new institutional or management market that can bring dynamic maximize opportunities while delivering not only potential growth, but also losses. Risk decision thus means the choice between risks taking the same loss with high probability of something to get something uncertain. Institutional risk in his writings elaborated Kähkönen and Arto [9]. A key factor in the evaluation of risk in the global environment is its objectivity. His mathematical expression can be understood rather subjective, as will be assessed only by the potential gains or losses. It is the cause of identification of fictitious risk or its revaluation in connection with its probability value. Therefore focus on the area of risk which, while having a low probability value, but for their

implementation can have a significant impact in their implementation, compared to the situation of low probability values with a high threat of consequences.

3 Exposure method

The above mentioned traditional approaches, however, did not cover the whole scale of identification of risks in the required form. It was due to the constant development of risk and in particular the global risk assessment. Strategic planning, therefore, in the absence of monitoring risks in real time, felt more pressing, in order to ensure "in time valuation" and at the same time that changes were evaluated immediately. So it was not possible to size up, but to assess the overall exposure to correct mathematically only.

This exposure, however, was not only static, but dynamic, and therefore a real nebula measurement had to be in review a mechanism of evaluation "in time" and therefore the evaluation had to evaluate a dynamic width of exposure. Therefore, for the needs of global risks, it was necessary to use the exposure method.

Exposure method is not based only on risk analysis, but it is necessary to test possible future scenarios of risk alternatives and on that basis then evaluate the potential costs for likelihood risk scenarios. Qualification of risk exposure based on the sequence of steps we evaluate usable application of the plan to evaluate alternatives. Application plan therefore includes:

- to assess the degree of risk that may arise from factor analysis of micro and macro environment and as a basis for decision on the remedial measures,,

- to assess the effects of identifies resources,

- the setting of the priorities with respect to geographic location,

- determination of target parameters of adopted measures,

- to assess and determine the future alternatives,

- the assessment of the effectiveness and efficiency of the measures or their phases.

Figure 1 System of Corporate, Business and Strategic Project
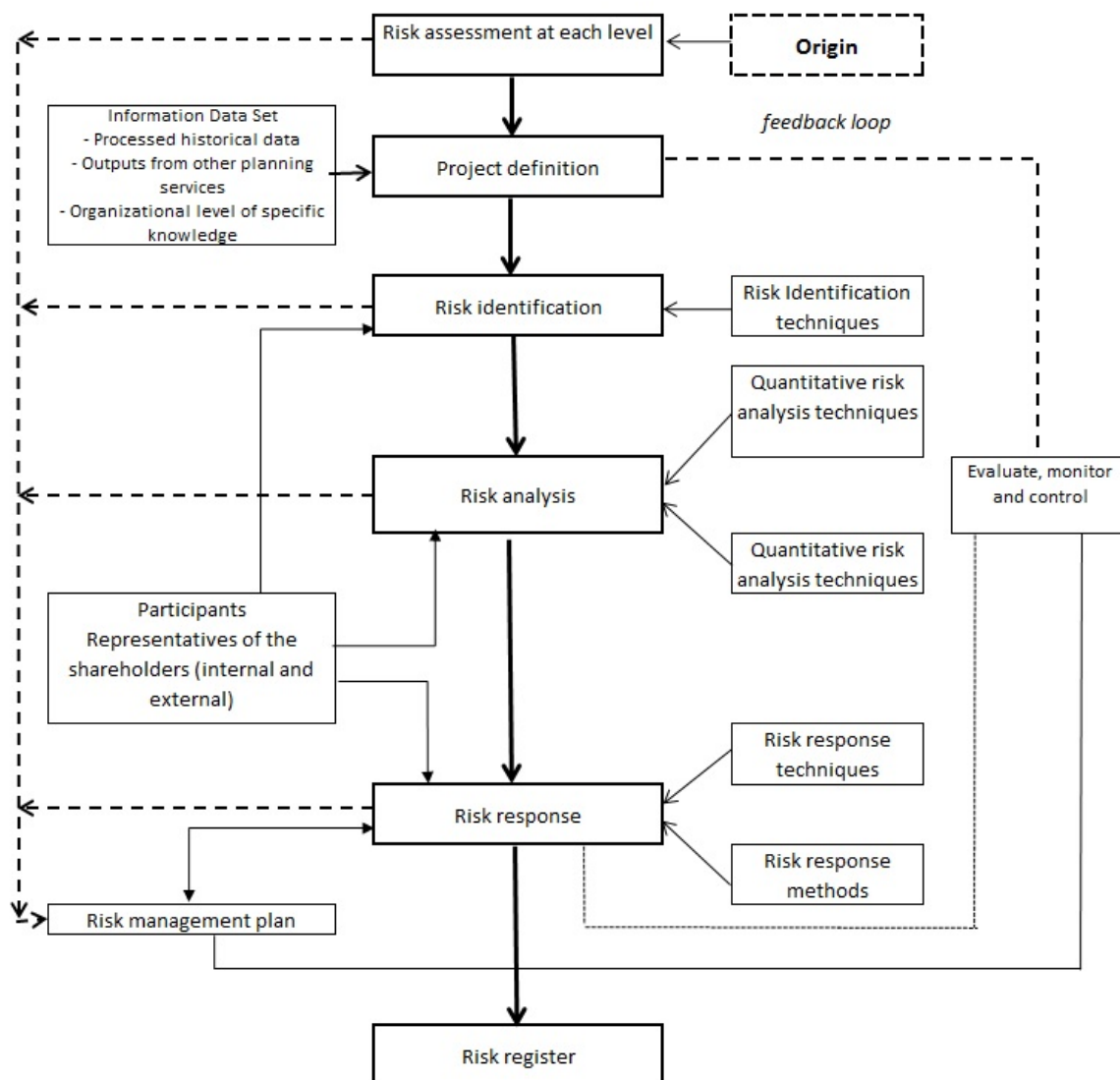
Source: SMITH, J.N., 2003. Appraisal, Risk and Uncertainty. London. ISBN: 978-0-7277-3185-2, pp: 116.

Appropriate methodologies for exposure for each level of identification and risk analysis tools used and methods defined in the system of Corporate, Business and Strategic Project by Nigel J. Smith [22] from the University of Leeds. The model defined by J. Smith where a group of "Participants" is set up as a group of relevant stakeholder representatives, which also includes internal and external environment. This group is defined in the area of micro and macro-risk, along with objective and subjective evaluation, and thus, it is no more relevant to examine dynamic and static character of changes in individual risk types, but only their notable elements in relation to the subjects.

After evaluation of risk at every level of the individual instruments are effectively implemented in symbiosis of their methods and procedures. It is examined by means of the feedback of all levels in real time, so the process is easier opposite to elaboration of economic analysis, because the cycle of the risk is dynamic, and is maintained during the throughout of its execution. The important evaluation of the risk is estimation of the value for its entry level given the financial volume of the project to the overall objectives and therefore not only as absolute values. Assignation of value of risk in view of "Participants" takes place in the loop at all stages and the result is thus determined by its exposure and management tools. The

results are thereafter recorded in the Risk register that serves as a database of resources at the level of identification. In the case of a different instruments results, response risk should be monitored, which are designed to define procedures and methods for the retrospective evaluation. Participants are part of risk evaluation at each level of the process and the information that passes across through the process and the result is actively monitoring, evaluating and controlling.

The conceptual framework is thus based not only on legal framework but also on the principles for risk assessment defined for the actual time line and for the geographic termination. Using the method of risk measurement is therefore not important independent data collection and data series, but also:

- process of the collected information, preparation and evaluation of input data,

- verification of the hypothesis based on available traditional instruments,

- analysis of the results of the test information,

- geographic termination and degree of openness of an economy,

- risk analysis (assessment of global risks, identifying the risk factors),

- monitoring of risk exposure,

- the cost of monitoring and eliminating risks

- long-term conceptual plan to eliminate the monitored risk factors.

4 Conclusions

Evaluation of the microeconomic and macroeconomic risks identifies and summarizes risk analysis. It consists of a process of integral partial comparative studies to assess the partial impacts related to the degree of risk exposure. There are many views on the observation to keep track of current risk exposure. Strategy risk exposure, however, can be defined in terms of the above mentioned approaches, which were formed historically and from the perspectives of different economic approaches of economic schools. For the dynamics of the surroundings, however, it is necessary to use "cut-and-dried" models, in spite of the anomalies located in the global risks; therefore, it was necessary to examine the consistency and coherence of the methods of Smith J. N. on global risks. They do not need to have economic origins or background, but in spite of their impacts may occur exclusively in the economic or commercial sphere. It was therefore necessary for further research to prove or disprove the possibility of the implementation of the model, which will be used in order to identify the risks, because the only way how to use factor analysis in their valuation is to reduce the importance of the procedural anomalies.

The disadvantage is specific risk assessment, because is determined by the degree of threat using only the ex-post procedure. Evaluates the factors for a given states of nature extrapolating data from the historical data series, and also compares them with a set of factors on the course of the target area in any given situation and target groups. The result is a summary of the entity´s vulnerableness that depends on the level of the circulation and intensity of action. The vulnerability of the entity can be defined in three lines: consequences of geographic impact; aspects of protectionism of the entity and factors states of previous protection mechanisms and their evaluation.

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FINANCING OF INNOVATIVE DEVELOPMENT IN ARMENIA AND UKRAINE

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ABSTRACT

The world's most innovative countries rely on the strong resource base characterized by variety of sources and forms of investment into R&D. The state plays a significant role in increasing own investment in new knowledge and technologies, and also stimulating private capital inflows to this sector by means of various tax and financial instruments. The purpose of this paper is to determine the problems of funding of innovative development in Armenia and Ukraine, and explore the instruments to mobilize financing sources for innovative activities in these countries. In the paper the analysis of financing of innovation in Armenia and Ukraine is carried out, challenges of innovative development of these countries, especially in the field of financing are revealed, and possibilities of creation of effective funding mechanisms for innovation activities are considered. The paper suggests several new measures to facilitate access to capital for Armenian and Ukrainian businesses.

1 Introduction

The global economy undergoes the large-scale structural changes caused by fast development of science and technologies now. This process in the developed states where broad application of technological and administrative innovations in production and the social sphere turned into one of the main driving forces of economic growth and increase of a standard of living of the population is swept especially up. Innovative rise is promoted in the West by rapid growth of capital investments, first of all private, in advanced technologies, and also existence of effective national systems of R&D financing providing the movement of investments into the most perspective hi-tech projects and their high availability to all subjects of innovative activity including small business. As a result thanks to large-scale investments into basic and applied research in the developed countries essentially new, quite often called post-industrial, the type of "economy of knowledge" based on broad intellectualization of productions and continuous improvement of approaches in the field of management is formed today. In Armenia and Ukraine the special importance is represented by an assessment of prospects of the adjustment of mutually beneficial cooperation of business and the state in the innovative sphere which abroad plays a key role in strengthening of an innovative component of national economic growth.

2 Literature Review

Despite the growing number of the works devoted to problems of investments attraction into the innovative sphere, in domestic economic literature deficiency is still felt in the field of the complex researches opening questions of formation in Armenia of complete system of innovations financing which would provide effective support to hi-tech projects at all stages of innovative process and also would promote the direction of investment resources in the most significant areas of R&D for the country.

Innovation and innovative development are becoming increasingly interesting to researches, policymakers, and businesses for achieving their economic goals. As early as in 19th century an outstanding Ukrainian scientist M.I.Tugan-Baranovsky pursued on the innovative development of economy and described the ability to acquire and generate innovation as an engine of the country's competitiveness in foreign markets [21]. The importance of innovations as essential driver of economic development in the world economic theory was highlighted by J. Schumpeter, who indicated that innovation is not only the creation of new products but the change in the technology of production [18].

Later on many researchers from all over the world dedicated their works to the problems of innovative development of the economy. Studies conducted by them demonstrate that only innovative activities of enterprises, implementation of innovative technologies, transition to new management systems, investments in human capital can stimulate the emerging of the economy from the crisis [14]. Innovative development of economy requires significant investment; therefore all researchers search the new financial instruments to fund and support innovative activity and innovation projects [9], [10], [11]. It is necessary to note, that innovation is a subject of fundamental uncertainty [2]: only a part of technological innovations will be successful in terms of solving the problems as originally articulated. That is why it is needed to explore carefully the instruments to mobilize financing sources for innovative activities, especially in developing countries. The importance of financial provision is confirmed by conducted econometric analyzes [7], that show that access to finance is an important issue for firms' innovation activity and their ability to benefit on the world markets. Firms with foreign capital participation and those with good access to domestic bank loans – that is, firms with less binding financial constraints – innovate more than others.

Public and private investment in human capital, R&D and other intangibles is determined as the priority goal in the OECD Innovation Strategy that applies not only to developed countries but also to emerging and developing ones [15].

In our paper we also search the new effective measures and instruments for public financial support of innovative development in Armenia and Ukraine, and determine the ways of interaction between public and private capital for funding of innovative projects.

3 Data and Methodology

Data used for the analyses is taken from the database of the State Statistics Service of Ukraine, the National Statistical Service of the Republic of Armenia, the Eurostat and World Bank official statistics. Information base of paper is based on the Armenian and Ukrainian laws and regulations in innovative development policies, regulatory framework of the EU and OECD, scientific publications.

System and functional approaches acted as methodological base of the paper. During the research general scientific methods and receptions, such as scientific abstraction, the analysis

and synthesis, comparison, induction and deduction were applied. Along with it for establishment of high-quality and quantitative communications and dependences between the studied phenomena in the work methods of the economic and statistical analysis actively were used.

4 Results and Discussion

The state has a huge arsenal of measures that could stimulate the innovative development of enterprises. However, financing measures is almost the major component of economic provision of innovative activity. Therefore, each state determines the creation of organizational-economic mechanism of R&D funding as the important task of innovation policy. In the framework of the mechanism it is advisable to identify trends and instruments of funding for the purposes of promotion and development innovative activity. Public funding of innovative entrepreneurship should be made only after the estimation of feasibility of various innovative projects, as well as the selection and justification the purposes of R&D.

Organizational-economic mechanism should include institutional support, creation of infrastructure, informational and legal framework for innovation, ensure the interests of all parties of innovative activity and create the conditions to stimulate R&D. We have to recognize that both in Armenia and Ukraine all components of this mechanism require changes and reorganization in order to improve financial provision of innovative activity.

4.1 The performance of financing of innovation activity in Armenia

The world economic crisis significantly affected the Armenian macroeconomic environment. It became clear that it is necessary national innovative strategy and new model of economic development for Armenia which could resist to different shocks. For Armenia the major strategic task needs to be considered formation of innovative economy, improvement of educational system, development of science and technological progress.

In the National competitiveness report of Armenia the importance is attached to a problem of modernization of technologies and management systems and it is noted that it assumes application of modern ICT decisions and flexible management systems [6].

By consideration of Armenian export structure on technological level allocate three commodity groups: resource-intensive, low-tech and high-tech goods. According to data of Customs service of RA export of resource-intensive goods in 2013 was 43% that though a low indicator, but considering that the country is quite poor in natural resources, this figure causes concern. Thus, this indicator tends to increase caused by growth of the mining industry. Export of the low-tech goods was about 51%, and hi-tech goods - 6% [3]. In the structure of hi-tech goods export the vast majority was scientific equipment, then chemicals, electronics and telecommunication products. Similar export of high-tech goods shows that R&D in Armenia doesn't lead to creation of the commercialized high-tech goods. In Armenia import of high technologies have increased since 2004 that is partially caused by intensive development of telecommunication branch (5-10% of the general import from 2004 to 2012). According to data of the National Statistical Service of RA computers, electronics and telecommunication accessories were 70-80% of the imported high-tech goods, and a share of hi-tech machinery and equipment - about 2%.[1] It means that is also limited the localized innovation by means of new technology import.

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[1] Indicators are calculated on the basis of the official data from the National Statistical Service of the Republic of Armenia 2004-2012

One of the main components of formation and development of innovative economy is the correct management of information and knowledge. The component processes of knowledge management are acquisition of knowledge, production of knowledge, dissemination of knowledge and application of knowledge [4]. Thus, major factors of economy of science are knowledge and the human capital. Follows from reports of the UN on the human capital that in such developed countries as the USA, Finland, Germany, Japan, Switzerland, etc., the share of the human capital have reached 80% of national wealth of these countries. The human capital can become a cornerstone of national competitiveness if in the Armenian society the role of education changes radically [5]. In 2013-2014 educational year there were 73 576 students in 23 Armenian state higher educational institutions from whom 62 266 or 84.6% were in paid system, and 11310 or 15.4% - studied for free. In 2013 the number of employees of organizations engaged in scientific R&D was 5230 which decreased by 6.5% in comparison to the previous year (for details see table 1 below).

Table 1 Expenditure on R&D and Innovative Activity in Armenia

Indicators\Years	2009	2010	2011	2012	2013
Domestic costs for R&D, total (mln. drams)	8,473.4	7,987.9	9,276.6	9,713.2	9,355.7
of which:					
at the expense of budgetary funds	5,079.1	5,298.0	6,066.2	6,750.6	6,711.0
Number of organizations engaged in R&D, total	83	81	72	72	62
Number of employees of organizations engaged in scientific R&D, total (persons)	6,926	6,558	5,718	5,598	5,230
of which:					
researchers and technicians	5,895	5,460	4,748	4,421	4,234
support personnel	614	672	566	556	605
other	417	426	404	621	391
Volume of scientific and technical works (mln. drams)	9,422.1	8,711.7	9,245.6	9,731.9	10,236.6
R&D	8,619.6	8,209.4	8,898.3	9,409.5	9,943.9
scientific-and-technical services	802.5	502.3	347.3	322.4	292.7

Source: Authors; on the basis of the official data from the National Statistical Service of the Republic of Armenia; [12], [13].

Scientific and technical potential on the one hand characterizes possibilities of the country to apply achievements of the scientific and technical progress (STP), and on the other hand -

extent of direct participation of the state in STP. In quite difficult and complete system of scientific and technical activity especially important indicator is R&D volume. 85% of R&D are around the world carried out in the USA, Japan, Germany, France and Great Britain, thus in this area the leader is USA. In Armenia in 2013 volume of scientific and technical works was 10,236.6 million drams (it increased by 5% in comparison to previous year), from which R&D - 9,943.9 million drams (for details see table 1). The developed countries spend not less than 2-3% of GDP for R&D. For example, in 2012 Israel spent 3.9%, Finland - 3.6%, Germany - 2.9%, Sweden - 3.4%, the USA -2.8% [22]. In Armenia the science receives financing up to 0.25% of GDP (for details see table 2 below). In spite of the fact that the means provided for science increased by 1345 million drams or 13.3%, their share in GDP almost didn't change.

Table 2 Budgetary Expenditure on Science in Armenia

Indicators\Years	2009	2010	2011	2012	2013
Expenditure on Science, total (mln. drams)	8,374.6	8,355.6	9,433.1	10,088.1	11,433.1
Expenditure on Science as a percentage of GDP (%)	0.27	0.24	0.25	0.23	0.25

Source: [17].

Decrease of science financing led to reduction of scientific and technical capacity of Armenia. While the number of researchers continuously grows in the developed countries, in Armenia their number in 2013 was 4234, having reduced on 1661 in comparison to 2009 (for details see table 1). The problem is that many high-tech specialists leave the country. Personnel outflow from science occurs more quickly than from other spheres of economy.

Thus, the analysis shows that our ambitions and expectations in this sphere can be met if the state pursues consistent, purposeful policy of development that will lead to an entrance of the large foreign companies and inflow of investments into Armenia.

4.2 The performance of financing of innovation activity in Ukraine

Since Ukraine's independence in 1991, according to the state economic and social development programs [19], [20], the strategic goals of the economic development were indicated as sustainable development through the innovation, introduction of investment and innovation model, the transition to advanced innovative technologies, creation of profitable financial and credit conditions for innovation, the development of non-banking financial sector in the form of credit-guarantee institutions, insurance, investment and innovation funds. However, in practice, innovative development did not become one of the main characteristics of the national economic growth of Ukraine. There were a few years of positive trends, but they were mostly temporary and led to only weak changes in the economy. So, in Ukraine innovative processes can be characterized as unstable and as a lack of clear long-term incentives for innovative activity.

It should be noticed that the character of innovative activity in Ukraine does not correspond with the current level of innovative processes in countries for which innovative development is a priority of economic strategy. Analysing the data in Table 3 we can conclude that even though the innovative activity of enterprises is growing, its growth rate is too small to be meaningful. The share of enterprises that engaged in innovative activity (16%), and share of the enterprises that introduced innovations (12%) are extremely low for the economy, of which priority goal is to develop an innovative economy. Moreover, the share of these enterprises is almost invariable and even Ukraine's economic crisis in 2013-14 did not

significantly influence on their number. In particular, it can be explained by the lack of understanding by national producers of the importance to introduce the innovative technologies for improving their competitiveness both in domestic and global markets. Another negative trend in Ukraine is that only a small share of R&D active enterprises defines the development of new products and processes as their priority aims and as the basis of their competitive strategy. Instead, the most companies focus on the adapting of imported technologies and know-how. Thus, new technological processes put into service decreased almost twofold, which can be explained by the expensiveness of such projects, absence of the free funds in enterprises, no motivation to restructure the manufacturing.

Table 3 Indicators of Innovative Activity in Ukraine

Indicators\Years	2008	2009	2010	2011	2012	2013	2014*
Total R&D expenditure (UAH mln)	11,994.2	7,949.9	8,045.5	14,333.9	11,480.6	9,562.6	7,695.9
of which							
-Own funds of the enterprises	7,264.0	5,169.4	4,775.2	7,585.6	7,335.9	6,973.4	6,540.3
-State budget	336.9	127.0	87.0	149.2	224.3	24.7	344.1
-Foreign investors	115.4	1.512.9	2,411.4	56.9	994.8	1,253.2	138.7
-Other sources	4,277.9	1,140.6	771.9	6,542.2	2,925.6	1,311.3	672.8
Enterprises, that engaged in R&D (%)	13.0	12.8	13.8	16.2	17.4	16.8	16.1
Enterprises, that imployed R&D (%)	10.8	10.7	11.5	12.8	13.6	13.6	12.1
New technological processes put into service (process)	1,647	1,893	2,043	2,510	2,188	1,576	1,743
of which							
economical and resource savings (number)	680	753	479	517	554	502	447
Innovative types of products put into production (names)	2,446	2,685	2,408	3,238	3,403	3,138	3,661
of which							
new types of technique (number)	758	641	663	897	942	809	1,314
Implemented innovative products (%)	5.9	4.8	3.8	3.8	3.3	3.3	2.5

* excluding the temporarily occupied territories of the Autonomous Republic of Crimea, the city of Sevastopol and part of the anti-terrorist operation zone.
Source: Own calculated on the basis of the official data from the State Statistics Service of Ukraine

Funding of the innovative activity is mainly performed at personal costs of the enterprises, involvement of the investments is unstable, and credit lines are mostly inaccessible. Within the last decades foreign investments played rather an important part in funding of the innovative activities. However, during 2014 – because of the military operations in the East of Ukraine – foreign investments into innovative projects shortened 9 times, which almost

depleted innovative activity of the enterprises on the background of UAH devaluation, bank crisis and shortening of budget funding.

As stated by scientists, substantial part of the state expenses on the scientific-research sphere falls to financing of the organization structure (namely over 90%), which only indirectly favors the development of innovations. On the contrary, funding of the organization structure in the entrepreneurship sector makes only 25% from the total funding amount for R&D.

According to the researchers, the majority of the public R&D expenditure accounts for funding organizational structure (ie over 90%), which only indirectly promotes innovation. In contrast, in the business sector financing organizational structure is only 25% of the total amount of R&D [8].

Overall the share of R&D funding from the state budget is too little and fluctuates within 0,01-0,02% (for more details see table 4 below). For comparison, in developed countries this indicator is 2,5-3%.

Table 4 Public R&D expenditure in Ukraine

Indicators\Years	2008	2009	2010	2011	2012	2013	2014*
GDP (UAH mln)	948.056	913.345	1,082.569	1,316.600	1,408.889	1,454.931	1,566.728
GDP (USD mln)	123.124	114.383	135.972	164.787	176.265	182.026	99.358
Public R&D expenditure (UAH mln)	336.9	127.0	87.0	149.2	224.3	24.7	344.1
Share of public R&D expenditure in GDP (%)	0.036	0.014	0.008	0.011	0.016	0.002	0.022

* excluding the temporarily occupied territories of the Autonomous Republic of Crimea, the city of Sevastopol and part of the anti-terrorist operation zone.
Source: Own calculated on the basis of the official data from the State Statistics Service of Ukraine

In Ukraine the public R&D expenditure is divided according to the legislation of the strategic priorities of innovation activity. The analysis of financing of R&D and technology transfers shows that 91.3% of public expenditure is used according with the strategic priorities of innovation and the rest 8.7% - in other areas [16].

4.3 Financing of innovative development in Armenia and Ukraine: problems and solutions

The main problems of innovative development of Armenia and Ukraine are:

- lack of significant structural changes in the enterprises' reorientation to the new standards of economic behavior, including the introduction of market mechanisms of their functioning, innovative development projects, transition to the environmental standards of production;

- technological backwardness of the majority of domestic producers, their inability to introduce the modern innovative technologies in production, to modernize production and, consequently, to ensure the high quality of goods and services and compliance them with technical standards for entering foreign markets;

- lack of motivation for domestic producers to introduce the innovative technologies into production;

- reducing of the financial and credit capacity of market participants. In terms of the depreciation of the Armenian and Ukrainian currency, capital appreciation in those countries

both commercial banks and domestic producers are faced with a shortage of working capital at the stage of preparation and introduction of innovative projects;

- lack of the state support of innovative development, especially in the part of financing, promotion and information support of innovative activity; lack of understanding by both businesses and public authorities why the producers should implement the eco-innovative projects.

As analyses shows the annual public R&D expenditures in Armenia and Ukraine are very low and not sufficient, and there is a strong need to find new sources of financing such as private capital, venture capital, creation of public-private funds. It is advisable to reorient financial support from the direct public financing of innovative activities to the indirect government support of innovative development. In this case it is important to attract the private financial and credit institutions for funding of eco-innovation projects as widely as possible.

Unfortunately, macroeconomic situation in Ukraine and Armenia does not give investors any guarantees that in case of successful realization of the innovative project sponsored by them, they will be able to fully count on receiving their deserved dividends. Specialists are persuaded that there are all the reasons to expect that after the project starts to render the net profit, a lot of volunteers will appear willing to receive their "part" through imposing additional social obligations, increasing budget payments of different levels, or even via hostile takeovers [1]. Under such circumstances risks for realization of innovative project increase drastically and simultaneously motivation of introducing innovations decreases. If one takes into consideration that both Ukraine and Armenia try to involve funds of foreign investors for innovative activity, one will see that introduction of national guarantee system and insuring of innovative credits comes into the fore.

Necessity of national regulation for the formation processes of ecological innovation market is caused by its increasing value for economics, ecology and society in general. This makes it extremely urgent to determine the instruments of financing the implementation of environmental innovation, since it is mostly expensive projects that require long-term investment.

Due to the absence of current assets enterprises are not willing to introduce new eco-technologies into manufacturing processes. And under circumstances of the financial crisis, increase of state debt issues in general and banking sector in particular, growing load onto the national budget and budget deficit dot not allow to introduce new national programs for R&D funding in the branch of environment protection, and the liquidity issues met by banking system prevent manufacturing crediting, not to mention increasing of funding amount for ecological innovative activities. Above this, traditional sources are fully or partially not suitable for funding of the ecological innovative activities of the enterprise.

Main tax support elements of the innovative activity should be the following: deferral of taxes in case of additional expenses for innovative goals; decrease of the tax on the amount of the expenses increase for the innovative goals; exemption on taxation on profit received from realization of the innovative projects for several years; preferential taxation received from the shares of the company performing innovative activities; lowering of the profit tax rates in order to direct standby funds onto R&D; providing of benefits for those projects being executed according to priority programs; withholding of the fees to charity funds, which activity is connected with innovating sponsoring, from the profit before taxation; crediting of the part of the profit from the innovative organization to special accounts with the further usage for innovative goals.

Simultaneously with measures for financial encouraging of innovative development it is necessary to introduce measures able to create limited influence on the activity of the enterprises and force them to introduce innovative projects, especially in the ecological innovative sphere. Among such measures it is worth introducing norm setting for emissions from ecologically dangerous enterprises, penalties for exceeding of such norms and pollution of the environment, fees for usage of the natural resources and pollution of the environment, etc.

5 Conclusions

In Armenia and Ukraine the most complex problem of innovative policy is stimulation of active participation of business in all stages of innovative process. For this purpose it is necessary to use financial privileges into R&D for investments stimulation by the private sector. From the institutional point of view there are no venture capital funds financing innovative and technological projects in Armenia and Ukraine. In this field perspective direction can be a granting state guarantees to investments in venture projects that will lead to decrease risks. For mitigation of bank risks the state can guarantee partially or completely to banks in granting the credits without pledge. In Armenia and Ukraine for venture funds creation it is necessary to improve the legislation on the basis of stimulation and regulation system of partnership "the state - the private sector". One of the most important directions of the state policy in the sphere of science, technologies and innovations will be international scientific and technical cooperation. In Armenia and Ukraine for creation of innovative society and in particular innovative economy it is necessary to develop and realize system of long-term forecasting and strategic planning that assumes existence of the following conditions: legislative basis, activity of effective budgetary system in all spheres, the solution of a personnel problem.

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PRESENTATIONS

-Finance at Risk-
How To Finance Our Common Sustainable Future (SDG's)

The Power of a Monetary Ecosystem

Bratislava 2015

Stefan Brunnhuber

Millenium Goals have been replaced by the Sustainability Development Goals (17) Sept. 2015 in NY

UN 2015

"What is required is additional liquidity at a high scale, at full speed, and soundly targeted towards SDG's in a smart way that is different from what has been done in the past."

Global Proportions

	Trill USD
World GDP	75
Shadow Economy	50
Entropic Sector	30
MO	7
SDG	4
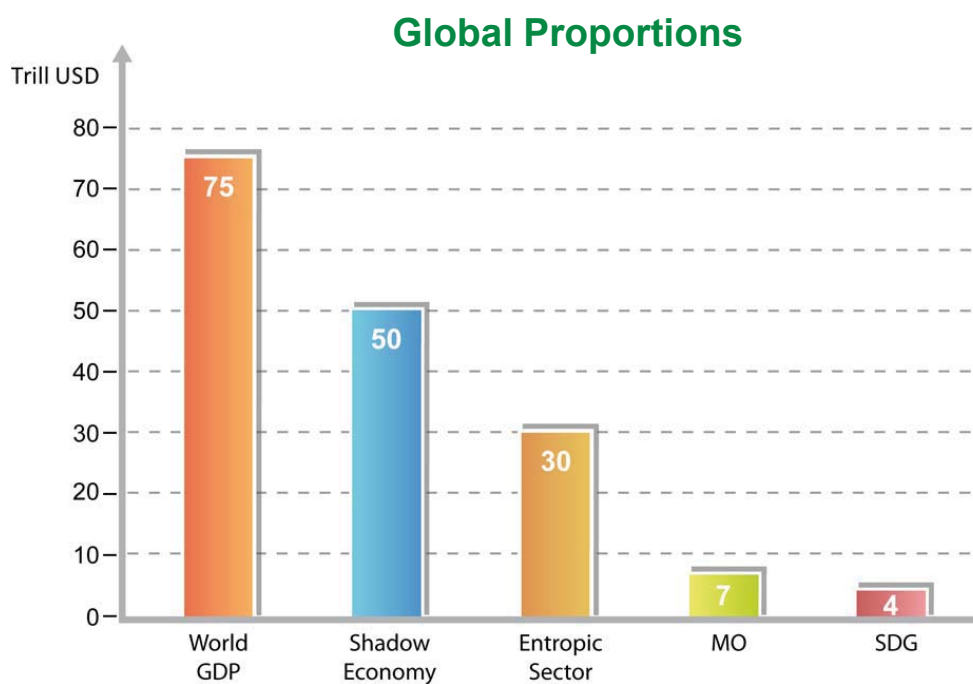
Debt-Trap: Public debt to GDP ratio
Who will pay the Bill?
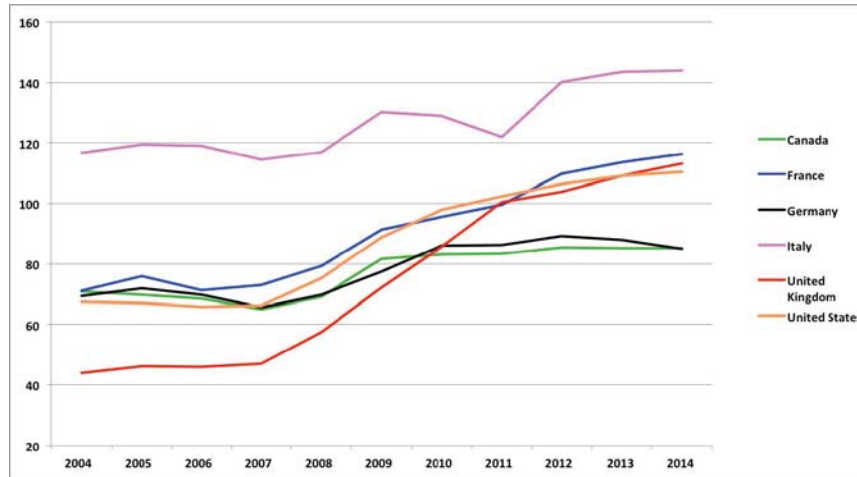
OECD-Outlook 2015

Liquidity-Trap: Quantitative Easing failed
to Increase credit to Private Sector
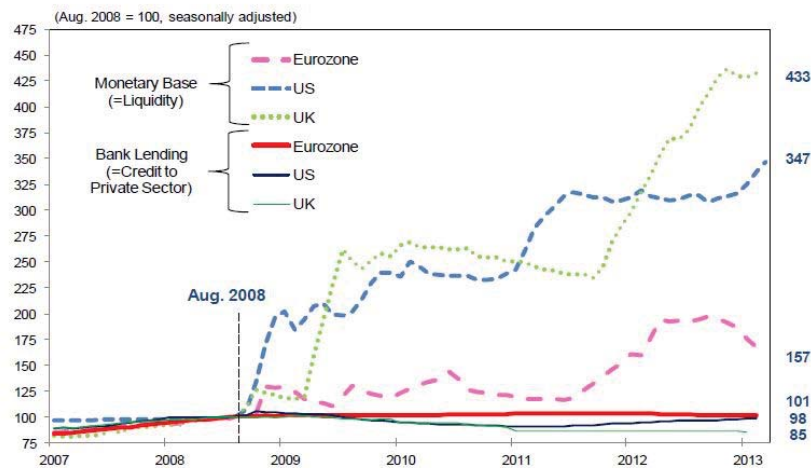
IMF 2012, Sinn 2012, WB 2012, Koo 2013

5 Dilemma to Cope With:

Debt-Trap

Liquidity Trap

Shadow economy

Increased Wealth Disparity

Instability

Finance at Risk: The System is unstable

Sinn 2015, US Das, Papaioannou et al. 2012; Lietaer et al. 2013
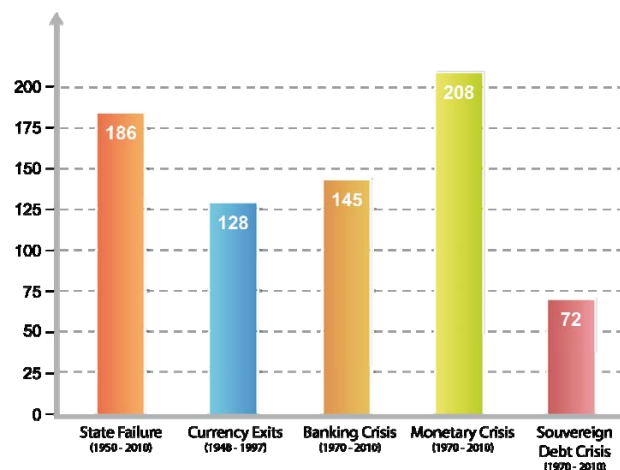
Finance at Risk: The System is expensive

Impact:
• Output costs
• Transfer costs
• Indirect costs
• Direct costs

          25% GDP

Pension gap (pre-post)   13% - 26 %
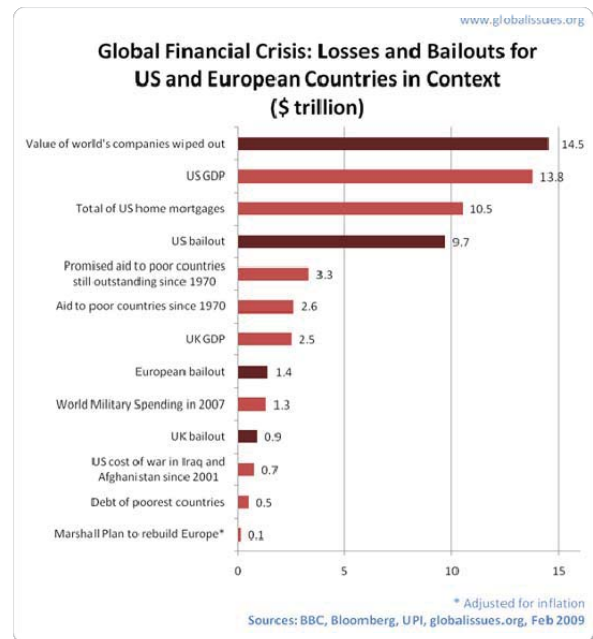
Gorton 2012, BIS 2012, Stern 2008, OECD 2012, ILO 2012, GFC 2013

Intermediate Result:

Unstable-Expensive

Debt-trap; Liquidity-trap

Conventional Solutions: Regulation - Co-Financing

Conventional Solutions:
,Regulation - Taxation - Co-Financing,

International Monetary Fund, World Bank, Central Banks,
United Nation, Governments

QE^{kon} [7]

Commercialbanks

Liquidity Trap
Debt Trap

Realeconomy [75]

Shadow Economy [50]

entropic sector [30]

SDG
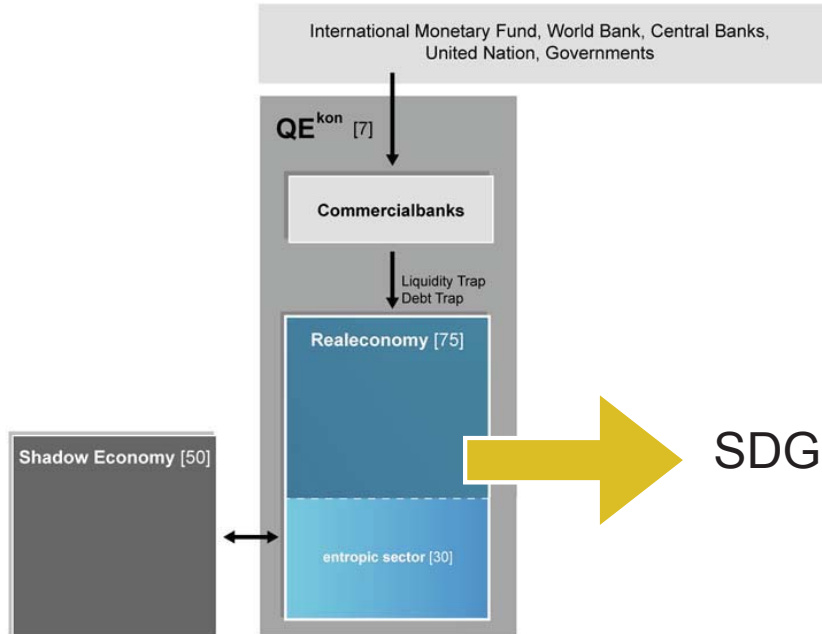
From Silo - to Systems thinking:
Towards a Monetary Ecosystem
Monoculture versus Biotop

The Physics of Stability:
Collapse and Recovery in Natural Ecosystems
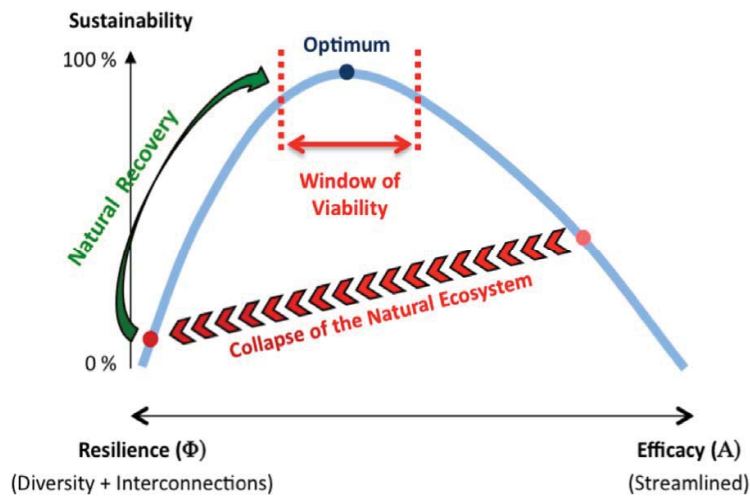
Lietaer Brunnhuber 2013

The Physics of Stability:
Efficiency and Resilience
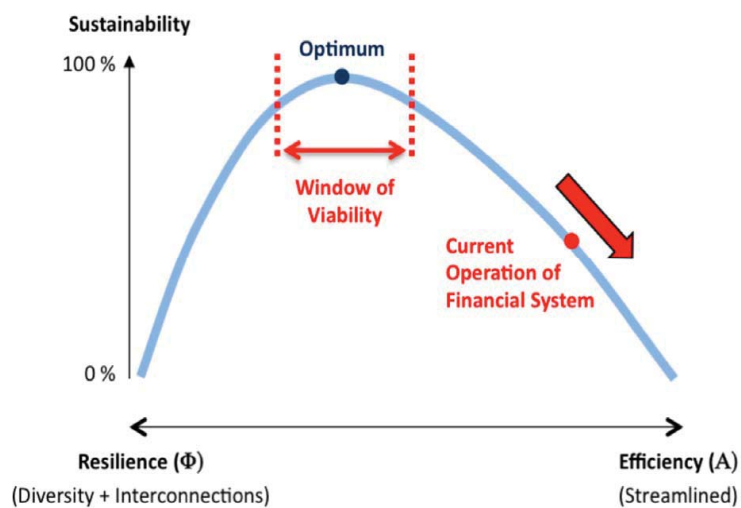
Lietaer Brunnhuber 2013

"We are psychologically trapped by the idea that there can be just one monetary system, providing a single, specific form of liquidity for all purposes, pretending that the power of allocative distribution is most efficient."

The Elephant is in the living room:
‚Everybody sees him, but nobody talks about it'
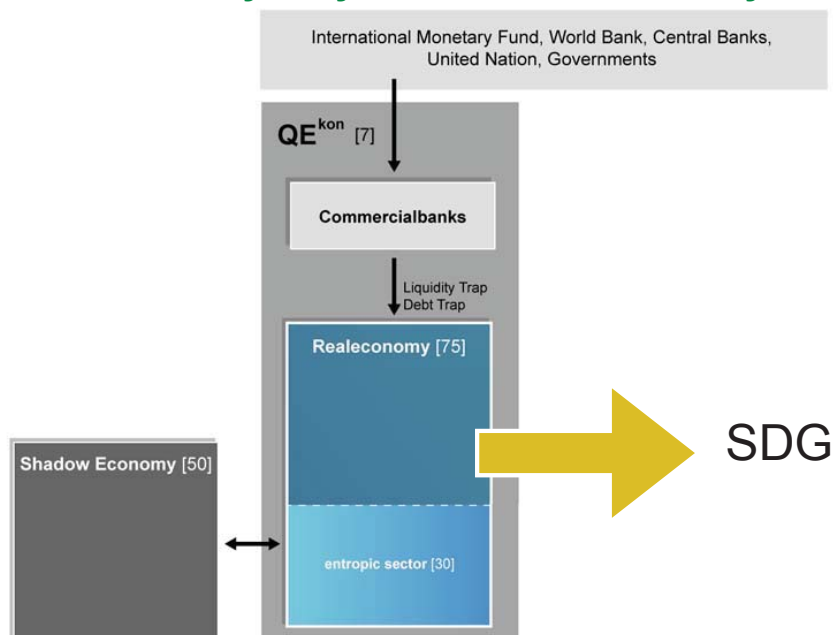
The Elephant is in the living room:
‚A parallel QE to finance SDG's'

International Monetary Fund, World Bank, Central Banks, United Nation, Governments

QE^{kon} [7]

QE^{SDG}

Commercialbanks

Public / Private Investments / Direct Aid

Liquidity Trap
Debt Trap

Realeconomy [75]

Shadow Economy [50]

substitution

reverse pricing

entropic sector [30]

Sustainability Development Goals (SDG) [4]

Qualitative Growth
Reduced Immigration
Positiver Rebound-Effects
Reduced Warfare

A complementary parallel currency system:
General principles

Parallel processing: function in parallel and *complement* current financial incentives

Maintain equilibrium: buffer and balance economic instability and/or scarcity of bank-debt money

In operation: > 4000 low scale complementary currencies in place worldwide (Furia-Kippu, WIR, TimeDollars, LETS, Regio, Frequent-Flyer, C-3 etc.)

A win-win approach: Risk-default, countercyclical, social capital, income, employment, green growth, inverse pricing-effect, substitutes for shadow economy & entropic sector

Summary:

Unstable - Unreformed - Expensive

Debt-Trap; Liquidity-Trap

Conventional solution have not worked

Out of the Box-approach: a parallel QE-SDG

QE-SDG can operate on different scales

Expansive Growth: HDI and Footprint

HDI and Ecological Footprint per person for Nations by World Regions

Finance at Risk: The System is unstable

Management of Slovak State Debt in Post Crisis Period

Daniel Bytčánek

Bratislava, 23rd November 2015
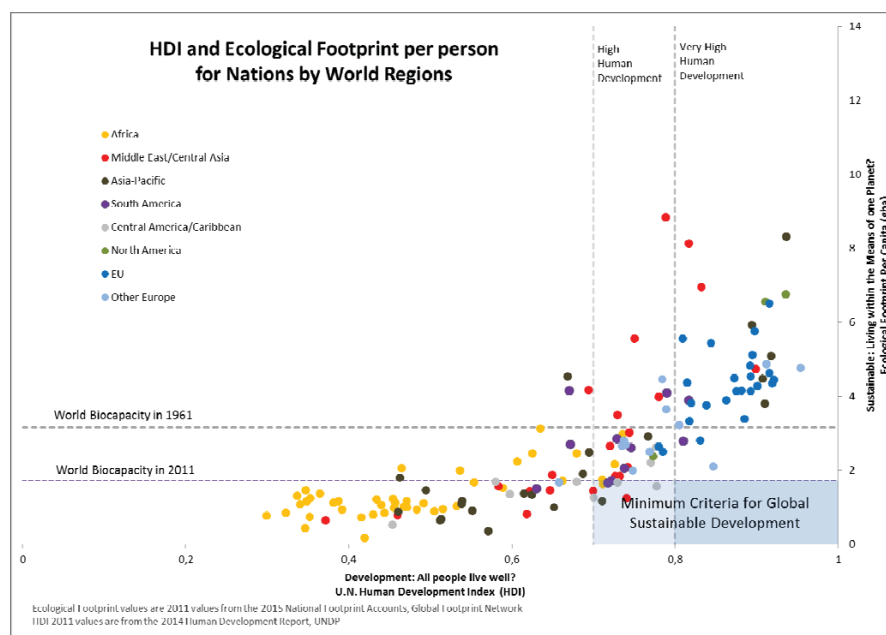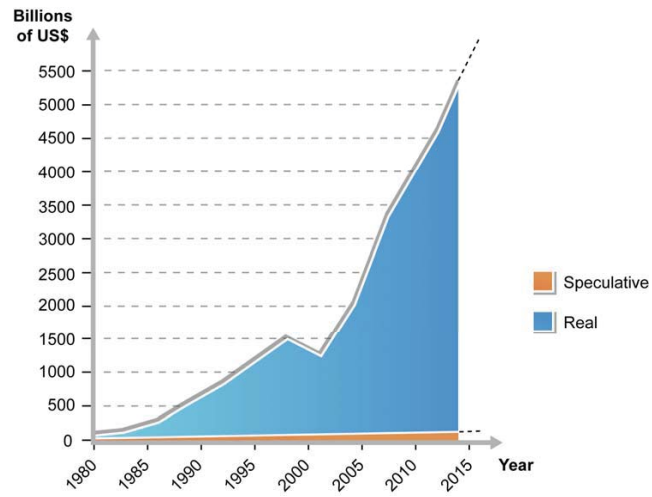
Content

1. Public finance after the crisis

2. ARDAL's reaction and the steps taken

3. Current situation

Public Finance During the Crisis...

- The fiscal situation substantially deteriorated after 2008
- Sharp increase in deficits and subsequently increase in the debt
- The debt management requirements have changed

Source: Ministry of Finance 3
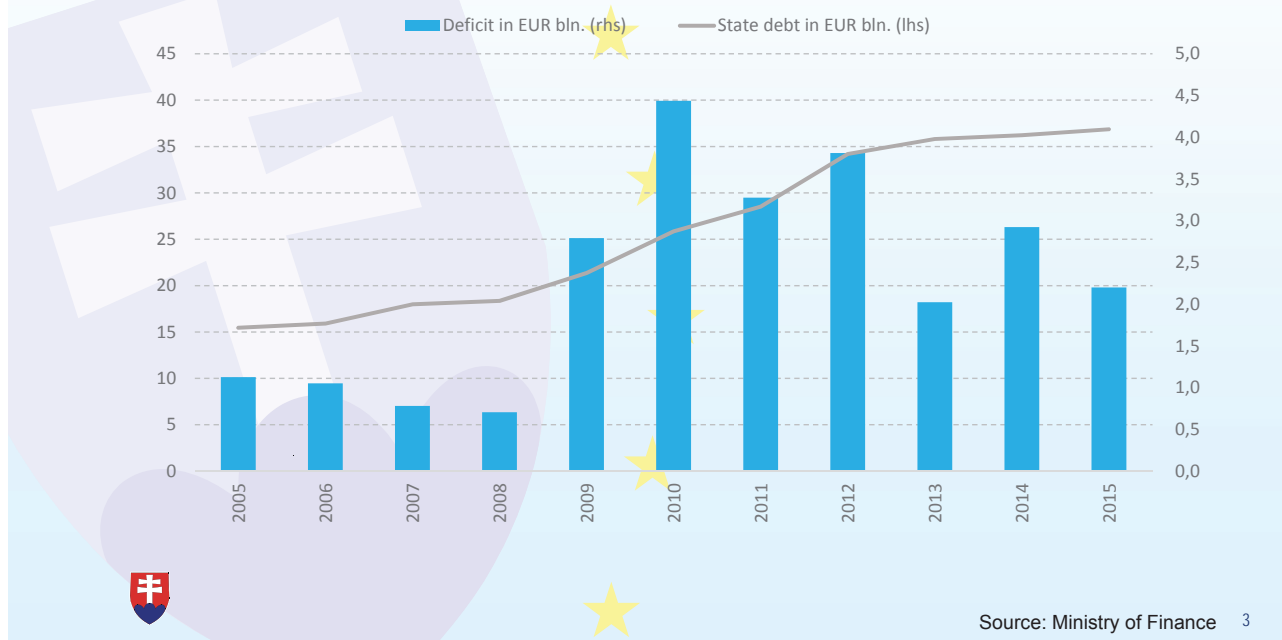
... Has Significantly Increased the Financing Needs

- The exceptional increase in refinancing needs since the crisis
- It was necessary to finance EUR 9 bn. in 2010, compared to EUR 2.5 bn. in 2008

Source: Ministry of Finance and ARDAL 4
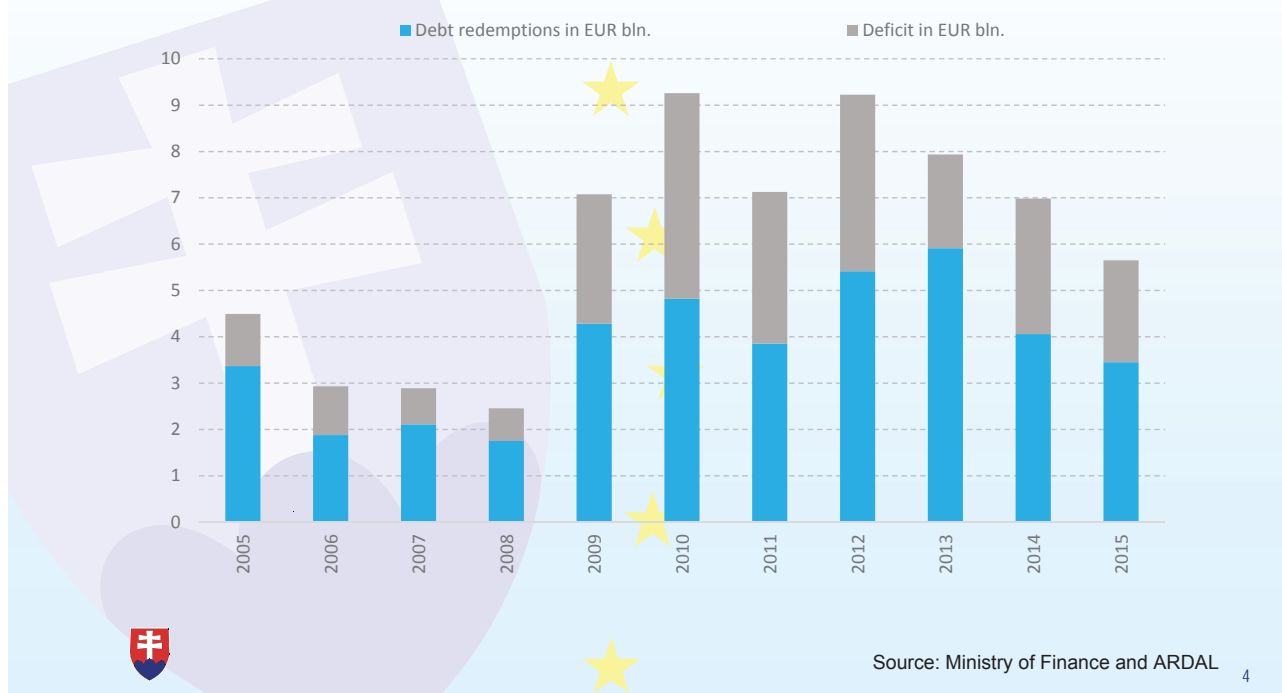
ECB and Sharp Decline in Interest Rates . . .

- Sharp decline in ECB rates directly after the crisis escalation at the end of 2008
- No significant decline in SK yields until two ECB LTRO tenders at the end of 2011 and at the beginning of 2012
- Historical low in yields in April 2015 (DE 10Y bond practically 0 % p. a.)
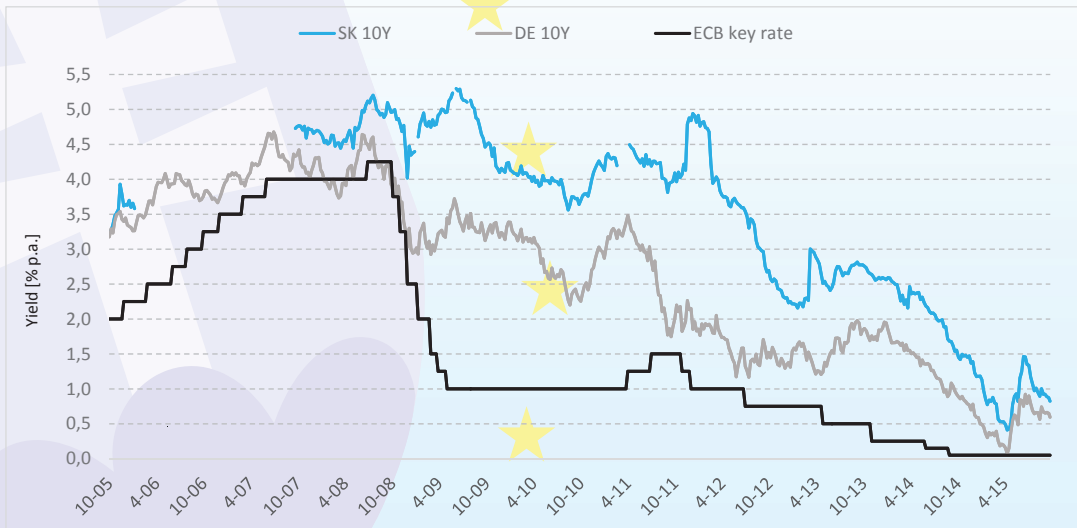
Source: Bloomberg   5

... Have Helped to Hold in Interest Costs

- The Interest rates development allowed to restructure the state debt portfolio and helped to improve its risk parameters at the same time
- The accrual interest costs in 2015 are predicted to reach those back in 2012
- Stagnation of costs despite the nominal debt growth
- The effect of lower interest rates is showed in accrual costs with a time lag

Source: Ministry of Finance and ARDAL

6
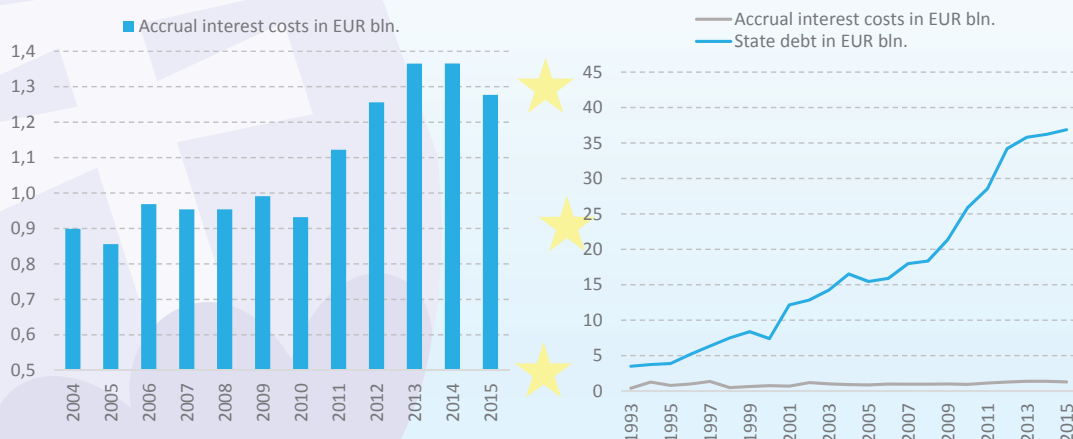
ARDAL Substantially Increased the Duration and Maturity...

- ARDAL significantly improved the risk parameters of the debt despite the nominal debt growth and costs stagnation.
- Gradual increase in average maturity and duration since 2009.
- Improvement of the parameters in the last years as well, while there was no increase in the costs.

Legend: Duration of bonds and loans — Average maturity of bonds and loans

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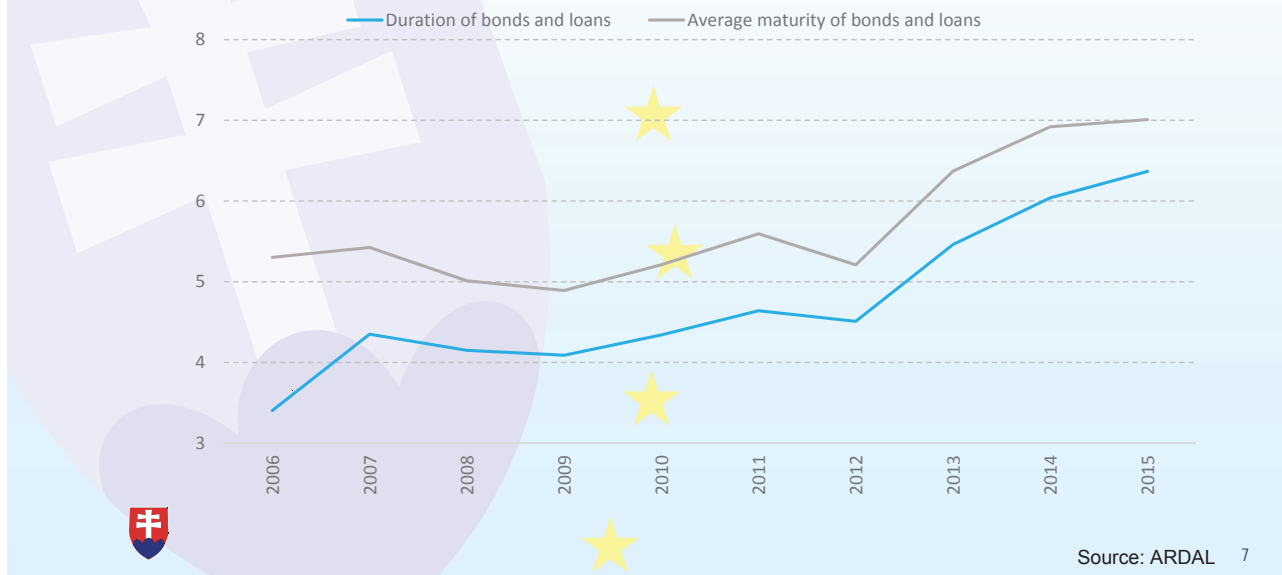
... as well as the Risk Parameters from the Strategy

- Improvement of the risk parameters set in the Debt management strategy also resulted in improving the average duration and average maturity of the debt portfolio.
- Redemptions form the first years moved into subsequent years
  - Example: drop in cumulative redemptions in the first 3 years: in 2011: 45%, currently only 33%

Chart: refinancing risk (cumulative redemptions by years – accumulatively, in %)

Legend: 2011Q4 2015Q2
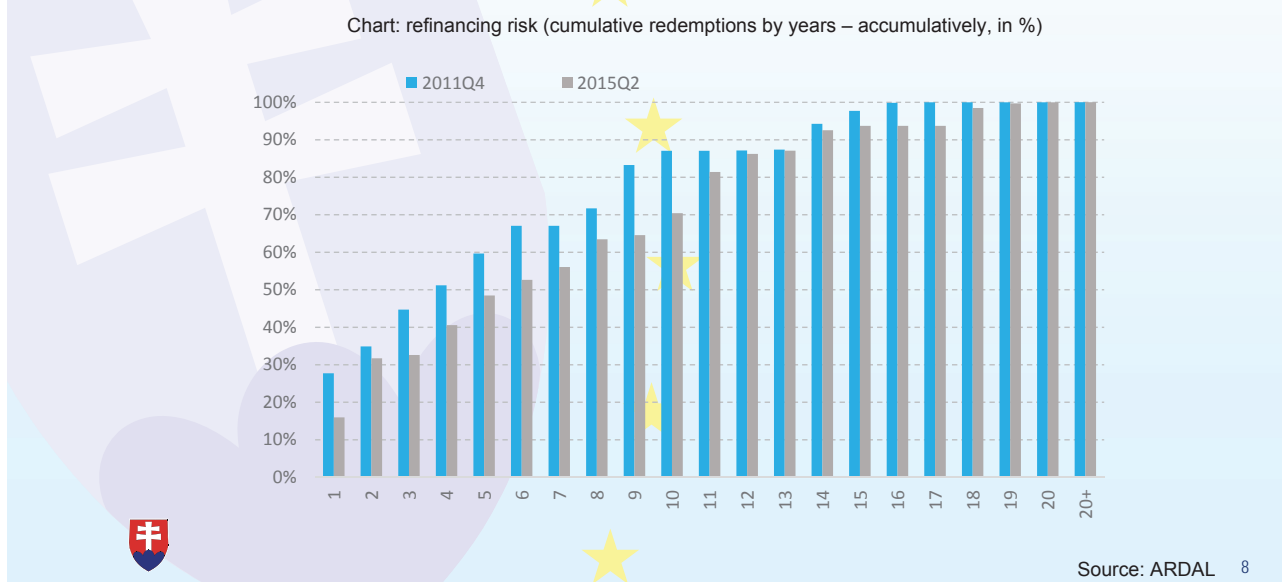
It was Necessary to Find New Investors

- Significant increase in the nominal debt + limited absorption capacity of local market = need of investor's base diversification

- Issues denominated in USD, CZK, NOK, JPY, CHF → increase in foreign currency debt share from 0% to 8%

- All foreign currency issues are hedged against FX risk – SR carries exposure as if the bonds were in EUR.

- Attracting new investors without additional cost and exchange rate risk

Legend (left pie): EUR, USD, CHF, NOK, JPY

EUR 100%

As of 31.12.2009

Legend (right pie): EUR, USD, CHF, NOK, JPY

USD 3%, CHF 3%, NOK 1%, JPY 1%, EUR 92%

As of 30.6.2015
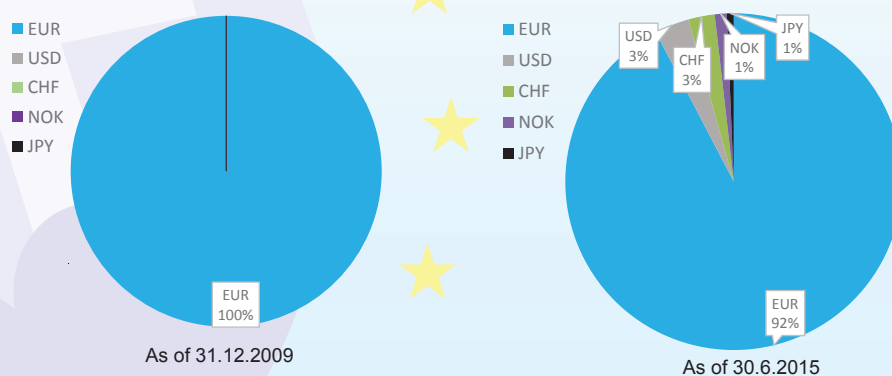
Source: ARDAL

9

Debt Management Influenced by Debt Brake

- Thresholds set by the constitutional Act on fiscal responsibility:
  - A – 50% of GDP – a letter from the Minister of Finance to the Parliament
  - B – 53% of GDP – Government s proposal of measures to cut the debt
  - **C – 55% of GDP – expenditure freeze**
  - D – 57% of GDP – balanced general government budget requirement
  - **E – 60% of GDP – upper limit, vote of confidence in the Parliament has to take place**

- Starting from 2018, the thresholds will gradually decrease by 1 p.p., in 2027 the upper debt limit will be 50% of GDP

General government debt to GDP (%) and Debt Brake

Legend: Gross debt (exl. EFSF and ESM) ■ EFSF and ESM ■ Gross debt ●

Year	Value
2000	49,6
2001	48,3
2002	42,8
2003	41,5
2004	40,6
2005	33,8
2006	30,7
2007	29,8
2008	28,2
2009	35,9
2010	41,1
2011	43,4
2012	52,1 (2,4)
2013	54,6 (3,3)
2014	53,6 (3,5)
2015	53,0 (3,4)
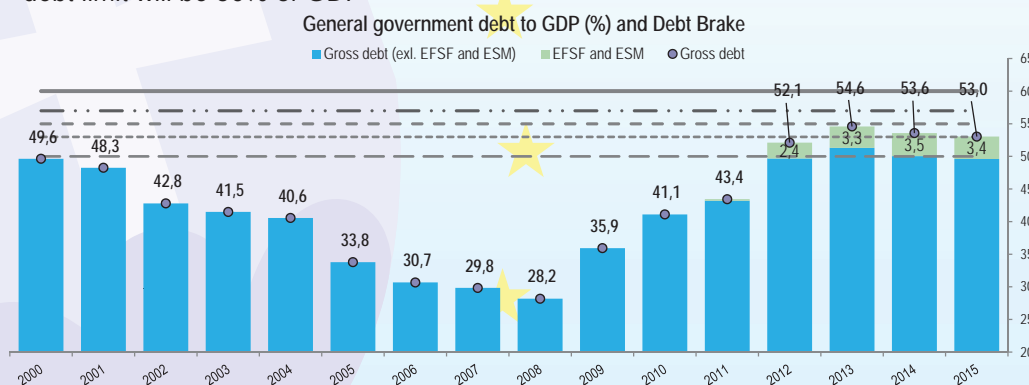
Source: Ministry of Finance , Draft Budget (July) 2015   10

Fight Against Tax Evasion

- Effort of government to fight against tax evasion, thus improve fiscal variables

- Strong ETR on VAT growth since 2012 => rise in tax revenues

- ETR (effective tax rate) denotes how many % of the value of sold goods and services are transferred to state as tax. The lower the ETR, the bigger the tax evasion.
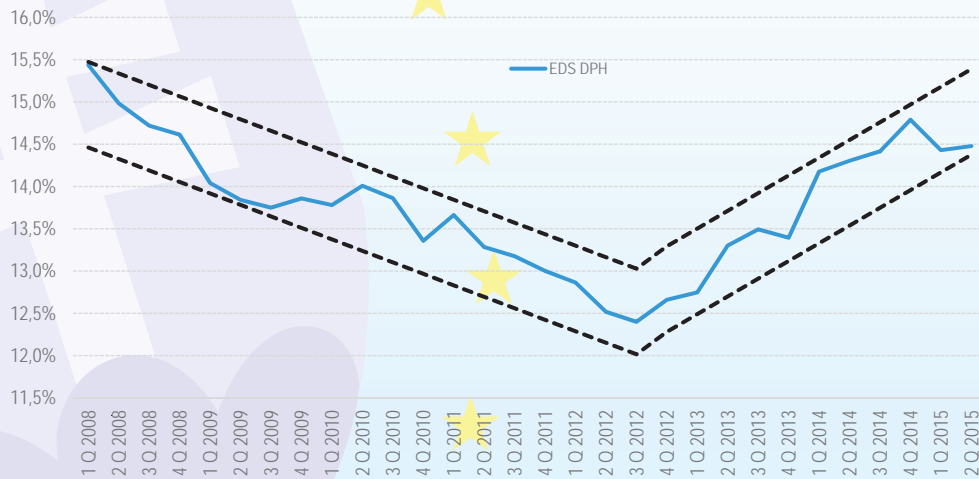
Source: Ministry of finance   11

Current Situation is Very Favourable

- The current yields of SK bonds on the secondary market are 3rd lowest after Germany and EFSF

- Slovakia belongs to the core euro area countries, debt management at the standard international level (best practice)

- NBS / ECB presence on the secondary market

Maturity	10 Year			Trading Mode			
Country		CMI	Security	Bid	Ask	Yield↓	Y
1) Germany			DBR1 08/15/25	103.875 /	103.885	0.593	
2) EFSF			EFSF 2 ⅛ 24	112.165 /	112.280	0.617	
3) Slovakia			SLOVGB4.35 25	133.810 /	134.555	0.760	
4) Netherlands			NETHER0 ¼ 25	94.920 /	94.945	0.789	
5) Finland			RFGB 0 ⅞ 25	99.930 /	99.940	0.881	
6) Austria			RAGB1.2 10/25	102.860 /	102.890	0.898	
7) Belgium			BGB 0.8 06/25	98.940 /	98.965	0.912	
8) France			FRTR 1 11/25	100.085 /	100.105	0.989	
9) Ireland			IRISH 5.4 25	136.970 /	137.135	1.214	
10) Italy			BTPS 1 ½ 25	98.185 /	98.195	1.710	
11) Slovenia			SLOREP2 ⅛ 25	102.695 /	102.940	1.796	
12) Spain			SPGB 2.15 25	102.385 /	102.435	1.883	
13) Portugal			PGB2 ⅞ 10/25	104.210 /	104.270	2.391	
14) Greece			GGB3 02/24/25	69.850 /	70.350	8.137	

Source: Bloomberg   12

... But ARDAL Still Needs to React to New Information

- Even if the situation is stable, there is still new information arisen that has not been incorporated in the debt management. The liquidity management has to react to:
- EU funds with time delay
- privatization of Slovak Telekom: uncertainty about the total amount of financial transaction and its timing
- 2nd pillar opening: fast legislation change, unexpected one-off revenues
  - Only elderly people and people with lower salaries left the pillar => rational decisions

Podiel vystupujúcich sporiteľov podľa veku a VZ

Rozsah VZ v €	do 25 rokov	od 26 do 30	od 31 do 35	od 36 do 40	od 41 do 45	nad 45 rokov	spolu
bez VZ	7.8%	9.1%	11.2%	12.6%	14.6%	21.1%	13.7%
0-200	6.9%	7.2%	8.8%	11.4%	14.8%	23.8%	13.3%
201-400	6.1%	6.8%	8.2%	11.0%	14.6%	24.1%	13.7%
401-600	6.5%	6.7%	7.6%	10.3%	13.4%	23.2%	12.5%
601-800	5.3%	5.2%	6.0%	7.9%	11.1%	21.1%	11.6%
801-1000	4.5%	3.8%	4.6%	5.8%	8.1%	17.4%	8.9%
1001-1200	2.8%	2.7%	3.1%	4.4%	6.1%	14.0%	7.0%
1201-1400	2.7%	2.0%	2.3%	3.0%	4.4%	11.2%	5.2%
1401-1600	2.0%	1.5%	1.6%	2.3%	3.3%	10.1%	4.2%
1601-1800	2.1%	1.0%	1.0%	1.8%	2.6%	8.7%	3.4%
1801-a viac	3.5%	0.7%	0.7%	0.9%	1.4%	5.0%	2.0%
spolu	6.3%	6.2%	7.1%	8.6%	10.9%	19.1%	10.9%

Source: Ministry of finance   13

Financing in 2015

- Expected refinancing at EUR 5.8 bn. in 2015

- 3 new lines of bonds were expected to be open (10 year, 30 year and 5 year with floating rate of coupon).

- Only one new line of bonds has been opened. It was the GB 228 with maturity in 2027.

- The total nominal debt of EUR 3.8 bn. (bonds, syndicate, loan) has been issued so far and there is very small probability to sell another EUR 200 mil. of bonds till the end of this year.

- The significant decline in issuance of the new debt against the plan is mainly caused by privatization revenues (Slovak Telekom), revenues of delayed EU funds, money from second pension pillar and decreased cash deficit of the state budget.

- The mentioned reasons also contributed to the fact that the other two planned bond lines have not been opened in 2015.

14

Financing Plan for 2016

- The expected refinancing at EUR 5.8 bn. in 2016 (redemptions and deficit)
- Two (three) new lines of bonds are expected to be opened (via syndicated sale)
  - A bond with maturity of 15 years at the beginning of 2016
  - A bond with maturity of 10+ (30) years in the second half of the year, based on the market conditions
  - (A short-term bond with maturity 5 years)
- The auctions will take place on the third Monday of months alike in this year (with the exception of June and probably August and December as well)
- Two bonds with different maturities will be offered on each auction day
- The likelihood of T-bills issuance is very small

A Few Interesting Facts about Debt Management

- The lowest accepted average yield interest rate in auction: minus 0.0955 % p. a., on November 17th, 2015, 3Y bond
- The lowest yield interest rate bid in auction: minus 0.15 %
- The bond with the longest time to maturity: 20 years – several bonds
- The transaction with the biggest total amount: EUR 2 bn. in 2009 and 2010
- The biggest redemption on a single day: EUR 3 bn. – several benchmark bonds
- ARDAL is managing the biggest portfolio in the country (EUR 40 bn. i. e. 53% of GDP) and conducts about 3 000 transactions per year
- According to an unofficial statement of World Bank, ARDAL is the smallest debt management agency (based on its budget and number of employees) among agencies with similar responsibilities

Contact

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web: www.ardal.sk

Reuters Dealing code: DLMA

Reuters and Bloomberg: DLMA

Lost in Complexity

Building a decentralized fiscal framework for Europe

Ľudovít Ódor & Gábor P. Kiss

Motivation

„Europe's Economic and Monetary Union (EMU) today is like a house that was built over decades but only partially finished. When the storm hit, its walls and roof had to be stabilised quickly. It is now high time to reinforce its foundations and turn it into what EMU was meant to be: a place of prosperity…"

Five President´s Report

Proper fiscal frameworks should ensure sustainability while avoiding pro-cyclicality. Europe fails on both fronts.

The fundamental problem of the current fiscal framework
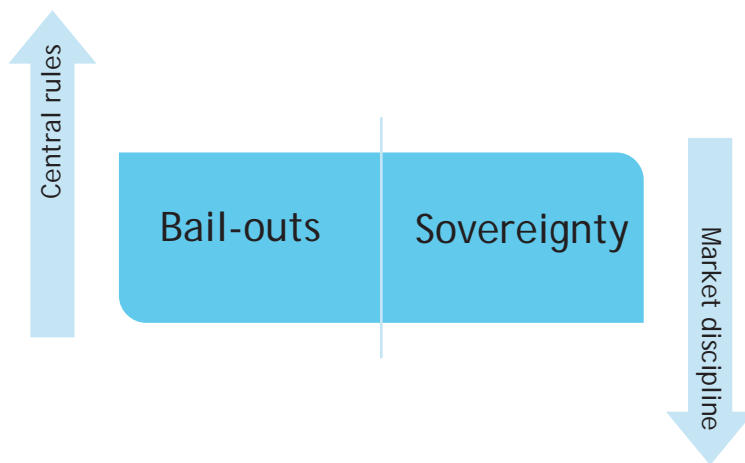
One can not have budgetary sovereignty and bail-outs at the same time

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The European fiscal framework is extremely complex

Paradox: It has so many rules, that at the end it rests on a discretionary decision of the Council.
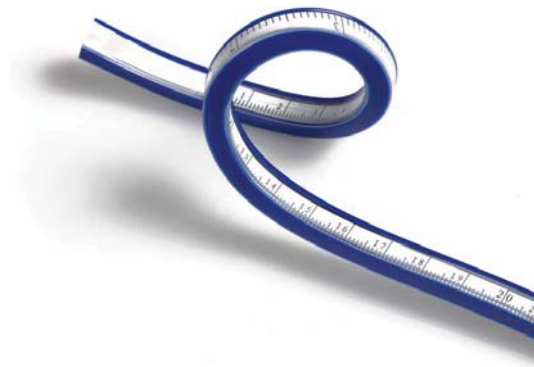
The application of European rules is so flexible that it is practically unenforcible (one-size-fits-all methodology vs. country specificities)

Foundations of a new framework: five objectives

▶ Better alignment of theory and practice in fiscal policy making

▶ Full utilization of synergies between fiscal rules and institutions

▶ Compatibility with a more complete design of the EMU

▶ Better balance vis-á-vis the Kopits-Symansky criteria (smart rules)

▶ Escaping Goodhart´s law

Lessons from theory and practice (1)

	Monetary policy	Fiscal Policy
Understanding the economy	New micro-founded models	Models from the seventies dominate in practice
Institutional set-up	Independent central banks	Political decision making
Objectives	Inflation targets	No clear consensus; some notion of sustainability
Operational rules	Short-term interest rates as an instrument and simple rules (optimal policy)	Tax smoothing in theory vs ad-hoc fiscal rules in practice
Dynamic behavior and expectations	Firmly anchored inflation expectations, importance of time-inconsistency	Importance of fiscal expectations recognized mostly in crisis times
Communication	Open communication, high transparency	Fiscal gimmickry is the rule not the exception
Theory vs Practice	Convergence	Important differences prevail

FP: more instruments, supply—side effects, redistribution but large differences do not justified

Can we have another „Quiet Revolution" (Blinder, 2004) and move towards „science" (Leeper, 2010)

Lessons from theory and practice (2)

▶ Optimal debt trajectories are country-specific and time-varying

▶ It is not optimal to make immediate and complete adjustments to shocks to debt (if expectations are well anchored)

▶ Fiscal limits (Laffer curves, transfer regimes, expectations) (Bi, 2010)

▶ Deficit bias can be also country specific and time-varying (Calmfors and Wren-Lewis, 2010)

One-size-fits-all solutions are suboptimal

The main objective is to eliminate the deficit bias as efficiently as possible (mix of rules and institutions)

How to do it better? Synergies between fiscal rules and institutions

Four basic challenges
- ▶ flexibility vs. enforceability
- ▶ simplicity vs. adequate definition
- ▶ optimality vs. effectiveness (Portes and Wren-Lewis, 2014)
- ▶ one-size-fits-all vs. adequacy

Fiscal councils can substantially ease these trade-offs

Compatibility with other pillars of the union

Focusing solely on fiscal policy issues is not sufficient
- ▶ Banking (financial) union (eliminating the diabolic loop – no zero risk weights on sovereign, concentration risks, capital market union)
- ▶ Bail-outs and the sovereignty principle (ex-ante resolution schemes, CACs)
- ▶ Stronger fiscal union? (home bias limits risk sharing, counter-cyclicality at the EU level)

Evaluation vis-á-vis the KS criteria

Positive	Neutral	Negative
Transparency +	Adequacy	Simplicity --
Flexibility +	Efficiency	Consistency -
		Definition -
		Enforceability -

Source: Ódor (2014)

Decentralized fiscal framework

Our proposal
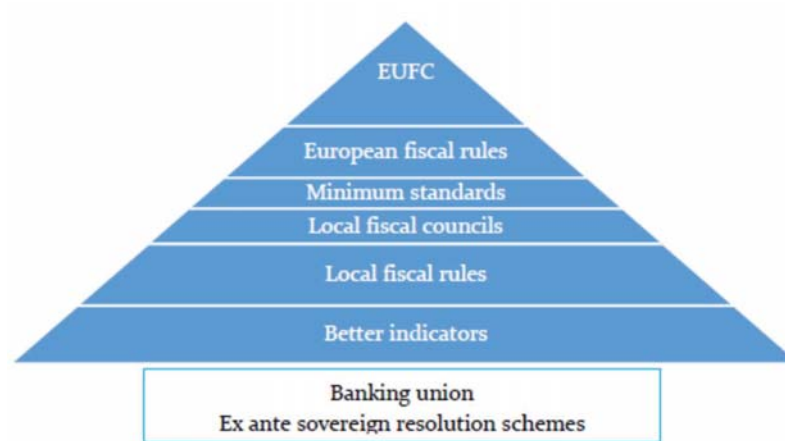
Similar to Wren-Lewis (2003); subsidiarity principle

Separated accountabilities
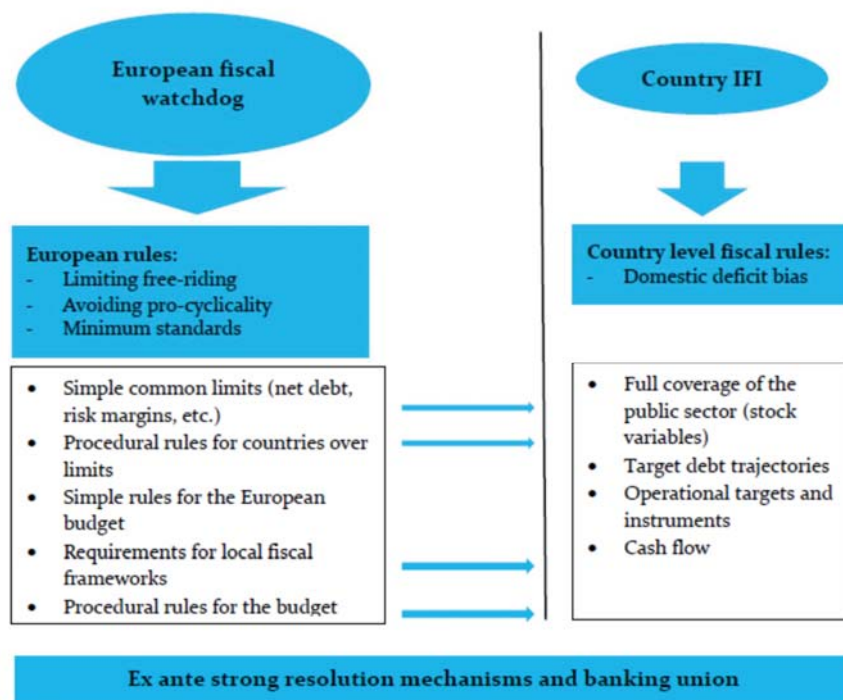
National level

Problems with currently used indicators

Main problems	Possible remedies
Partial coverage of discretionary action	- use of public sector balance sheets - international accounting standards (substance over form) - analytical indicators covering quasi-fiscal activities
Over-reliance on (extremely uncertain) real-time estimates of the output gap	- robust estimates: battery of methods - ex-ante evaluation mainly or longer ex-post horizons - disaggregated methodology for CAB - bottom-up crosschecks
Not consistent and transparent identification of one-off and temporary measures	- full disclosure of one-off items - consistent methodology (only self-reversing measures are considered)
No adequate focus on cash-flow	- more emphasis on medium-term solvency - sensitivity analysis of interest expenditures

Escape Goodhart's law by better fiscal indicators

▶ Goodhart's law: „I walk slowly, but if you try to catch me, I start running" (M. Buti)

▶ Previous policy conclusions: escape Goodhart's law by monitoring more than one variable. BUT:

▶ Policy relevant headline indicators prepared by statisticians, who have several other objectives and cannot react in a timely manner.

▶ Policy relevant structural deficit have several Achilles' heels. These serious methodological problems identyfied but not solved due to bureaucratic/political reasons.

▶ Solution: policy relevant indicators should be controlled by country IFIs

Simple decomposition

	Permanent	Temporary
Exogenous	part of structural deficit (P1)	medium-term cyclical component (T1) revenue windfall/shortfall (T2) surprise inflation/disinflation (T3) volatility of yields + lagged effects on interest expenditure (T4) long-term volatility (T5)
Endogenous (discretionary)	part of structural deficit (P2)	creative accounting and one-offs (T6) deviations from necessary investment level (T7)

Ideally one needs to have an idea about P1 + P2

Better indicators

	Current methodology	Alternative1	Alternative2
Headline deficit	$b_{ESA}= P_1+P_2+T_1+T_2+T_3+T_4+T_5+T_6+T_7$	$b_{ADJ1}=b_{CASH}-T_6$	$b_{ADJ1}=b_{ESA}-T_6-T_5$
Structural deficit	$s_{COM}= P_1+P_2+T_2+T_3+T_4+T_5+T_{6a}+T_{6b+}T_7+I$	$s_{ALT}= P_1+P_2+T_5+T_7$	
Underlying deficit			$u_{ALT}= P_1+P_2$

National fiscal rules and institutions

1. Country-specific „optimal" stock indicators as long-term anchors (inter-temporal net worth; high legal power)
2. Analytical flow indicators derived from 1 as medium-term objectives
3. Simple expenditure rules as operational targets (including discretionary revenue measures)
4. Independent national fiscal institutions as a first line of defence

Role of watchdogs

National level:

Interpretation and communication of fiscal policy (signaling)

Evaluation and monitoring of fiscal rules

Analytical (expert) role

Oversight of sub-national governments

Calculating fiscal indicators

European level

EU rules

1. Minimum standards (rules for transparency, fiscal indicators, complete public sector coverage, smart fiscal rules, basic remit of IFIs, guarantees of independence of IFIs, etc.)

2. Limiting free-riding (net debt or sustainability indicator or risk margin); loss of full sovereignty if limits breached

3. Avoiding aggregate pro-cyclicality

EU institutions

▶ European Fiscal Council (EUFC)

▶ Checking compliance with minimum standards and EU level fiscal rules

▶ Potential tools: inputs to country-specific recommendations, ECJ, activation of escape clauses, „comply or explain", participation in ex ante veto over national budgets, deficit targets

▶ 3-5 council members + analytical staff

▶ Financing from EP or ECB

▶ Cooperation with local fiscal councils

▶ Decisions still at the EC

Will the EFB do all this?

Conclusions

1. Accountabilities should be clearly separated in a currency union.

2. Optimal debt trajectories and deficit biases are country-specific and time-varying.

3. No progress is expected without better mix of fiscal indicators and independent fiscal institutions (both at local and the European level).

Thank you for your attention!

OR

What do we know about Fiscal Stabilizers Effects now?

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Typical channels of fiscal stabilization:
-automatic stabilizers,
- discretionary measures/fiscal policy,
- government size,
and their effects are one of the key research topics of Department of Finance and their PhD students.

Motivation

Attractiveness from the scientific point of view

Broad space for useful fiscal policy recommendation

Empirical findings from the recessions and debt episodes in SK

The scientific examples of motivation:
„Are automatic stabilizers an old and good idea? Or an old and bad one?
Should we use them more? Less? In a different way?"

Blanchard, O: Commentary to fame Cohen-Follette paper. Economic Policy Review / April 2000.

Other examples: Should we try more and near to objectively measure or
estimate the fiscal stabilizers effects or their interdependency with the
business cycle ? If answer is yes, then why ?
Should we use more the country specific analyses (with time series testing
models) or country blocs analyses (panel data approach)?
Should we try to develop more theory or fiscal stabilizers methodology ?

3

Fiscal policy examples of motivation:

„There is a broad consensus that automatic stabilizers—variations in taxes
and transfers that occur automatically in response to changes in output and
employment—have an important role to play „
(Baunsgaard and Symansky 2009).
or
„Now Is the Time: Fiscal Policies for Sustainable Growth".
(World Economic and Financial Surveys, IMF 20015):
How can concrete Fiscal Stabilizers contribute to the Output Volatility ?
How Fiscal stabilizers can influence Country specific Budget Balance Rules ?
What is Impact of the Output Gap on the Fiscal Balance ?
or
How the fiscal stabilizers or social security sub systems can contribute to the
fiscal sustainability or to the future savings and investments of a country ?
4

What we have learned from the Slovak recessions and debt episodes ?

	GDP growth	pub. debt (PD) to GDP	$\Delta(PD_{-1}/GDP_{-1})$	prim-deficit to GDP
Transition recession 1990 - 1993	app. -25 %	-	-	-
Post transition shock 1999	0 %	47,8 %	+ 13,3 %	- 4,5%
World financial and economic crises shock 2009	- 4,9 %	35,5 %	+ 7,7 %	- 6,9%

Intuitive lessons from 2009: High sensitivity of SK on the world economy performance, high volatility of GDP connected with sensitive fiscal position. In this case: are fiscal stabilizers working less effective ? If it is so - why ?

5

Our next research questions ?

How the size of the government of the SK can influence the GDP fluctuation ?

How unemployment insurance system as an only one real „automatic stabilizer" can smooth GDP volatility in Slovakia ?

Is the reformed 3 pillars pension system working as fiscal stabilizer or in reverse direction ?

How strong/week can we evaluate efficiency of the fiscal stabilizers (automatic and government size) is in the Slovak economy ?

Ochotnický,P., Čambalová, A., Káčer, M: Fiscal Stabilizers in the Slovak Republic Bratislava Economic Meeting 2010

6

Output volatility and government size – where is the position of SK ?
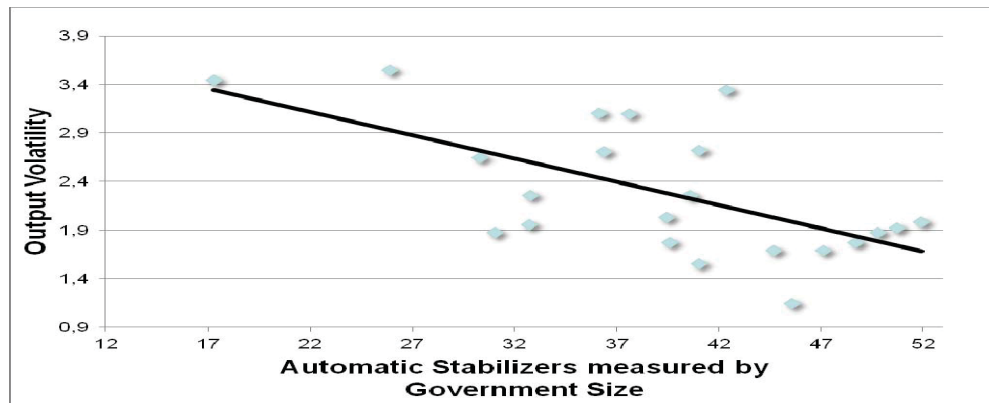
Fatás, A.: The Effectiveness of Automatic Stabilizers. Workshop on Fiscal Policy, IMF June 2, 2009

7

How unemployment insurance system can smooth GDP volatility in Slovakia ?

In the analysis we have used the concept of hypothetic elimination of the automatic stabilizer.

We exploited a traditional approach of income and expenditure multiplier, which was expanded by concept of export multiplier for a small open economy.

The main finding was, that the general effect of the unemployment insurance system caused mitigation in GDP volatility, which is in the case of real GDP lower by 4,03 % than at the GDP level achieved without an existing unemployment insurance.

Ochotnický,P., Čambalová, A., Káčer, M: Fiscal Stabilizers in the Slovak Republic Bratislava Economic Meeting 2010

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May we consider the reformed pension system in SK as fiscal stabilizer or de stabilizer ?

If the balance of pension system (pay as you go - public pillar) is in equilibrium, it is possible to consider pension system as standard built-in stabilizer.

In the reality, the original Slovak pension system reform (with reducing contribution to pay go by - 9 %) - the pay as you go pillar, is producing permanent deficit

In this case, pension system:

-reduced the fiscal stabilization function through lower size of the government or by drawing the government assets

- can lead to the long term equilibrium in the future, only in condition of over optimistic economy growth with the higher contributions to the pay as you go scheme.

9

What are our suggestions or recommendation for the fiscal policy ?

Based of finding a small common contribution of the fiscal stabilizers to the GDP volatility:

Change in government size ? - Slowly.

Change in design of traditional built-in stabilizers ? - Why not ?

Change in the transformed pension system ? - Yes.
How?

1. *Rebuilding the pay as you go pillar in a flexible formula regarding the cyclical position of the economy*
2. *Administrative reduction of contribution rate to the full funded pillar in the recession phase. ***

* Ochotnický, P., Čambalová, A.: Carefully and complex. Economic newspaper. 2008.

EU cohesion policy as the key discretionary measure in the Slovak regions

When can EU fund drawings act as fiscal stabilizers ? (Question of the appropriate timing).

By using the regional data of SK, the estimations of panel regression model have confirmed two important determinants of regional GDP volatility:

1 % increase in share of the EU funds drawings on GDP is resulting in 0,7015% decrease in regional GDP volatility,

in case of 1 % increase of the regional government size, the range of regional GDP volatility was reduced by 0,6732%.

OCHOTNICKÝ, P., BOÓR, M., SZITÁSIOVÁ, V.: Do have the structural funds and regional 11
government size...

Which fiscal stabilizers and additional factors have the biggest influence over the economic cycle in cross-country estimation?

In model estimation we have included the most discussed factors among economists and as the results show, the volume of output volatility in EU is mainly influenced by:

- *Government size (-)*
- *Openness of the economy (-)*
- *Size of economy (-)*
- *Drawing of EU Structural Funds (-)*
- *Economic cycle of EU (+)*
- *Government size²: fiscal smile (+)*

For more information, please see: Boór, M. (2015). Stabilizing role of Government size – dissertation thesis. Supervisor: Ochotnický, P.

12

New challenges for financial stability

Štefan Rychtárik
National bank of Slovakia

17th International Scientific Conference
FINANCE AND RISK

Outline

1. Low interest rate environment

2. Household credit growth

    1. Growing indebtedness of households
    2. Residential real estate market

3. Macroprudential measures by the NBS

Low interest rate environment

- Increasing probability of prolonged period of low interest rates
- Undervaluation of certain risks becomes material
- Changes in risk appetite
  - Shift from government bonds to corporate bonds and equities – higher credit risk
  - Longer durations of bond portfolios – higher interest rate risk
- Financial stability point of view:
  - Prolonged period of low interest rates – accumulation of imbalances
  - Increase in interest rates – materialization of accumulated risks
- Low interest rates can create pressure on changes in financial system
  - Financing of enterprises outside the banking sector (e.g. bond issuance)
  - Shift of savings from banks to other parts of financial sectors (e.g. mutual funds)
  - Changes in banks' business models due to falling interest margins

Household debt development (I)

- Falling interest rates:
  - During 2009: helped households to reduce their debt service
  - Since 2013: encourage households to maximise their debts
- Fastest growing bank credit to households within the EU (13% p.a.)
- Different trends in banks credit compared to regional peers
- September 2015: credit growth reached new all-time high

Chart: Y-o-y household credit growth in the EU

Old EU member states ······ New EU member states ─ ─ ─ Slovakia ──
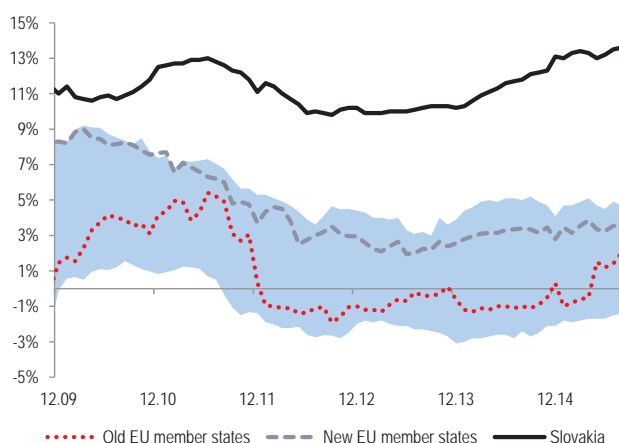
Chart: Nominal y-o-y changes in the outstanding volume of loans

All household loans
Y-o-y change in the volume of housing loans (in EUR millions)
Share of the shadow banking on the lending market (rhs)

Source: ECB   Source: NBS
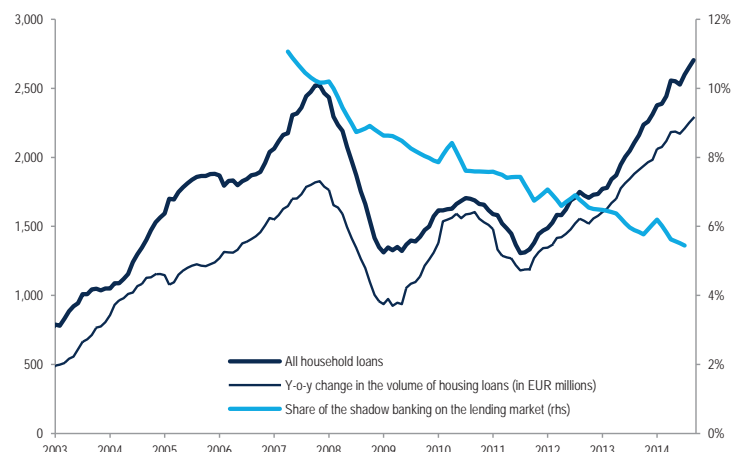
Household debt development (II)

- The only EU country with continuous increase in debt-to-disposable income ratio since 2005
- Different trends compared to regional peers after 2009
- Indebtedness is mainly driven by low interest rates, labour market, affordable housing, low initial level of indebtedness and demographics
- Supply factor: banks' orientation on households, strategic for profitability

Chart: Bank credit to disposable income

Old EU member states — New EU member states — Slovakia — AAA EU members
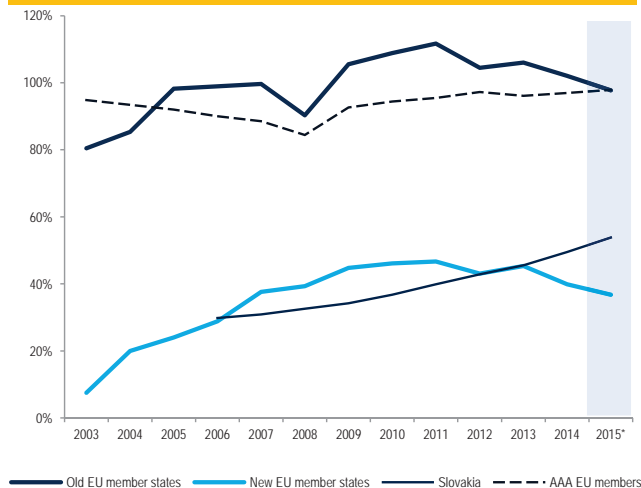
Source: ECB, Eurostat

Chart: Bank credit to disposable income – CEE countries

Bulgaria — Slovenia — Slovakia — Czech Republic — Estonia — Croatia — Hungary — Lithuania — Latvia — Poland — Romania
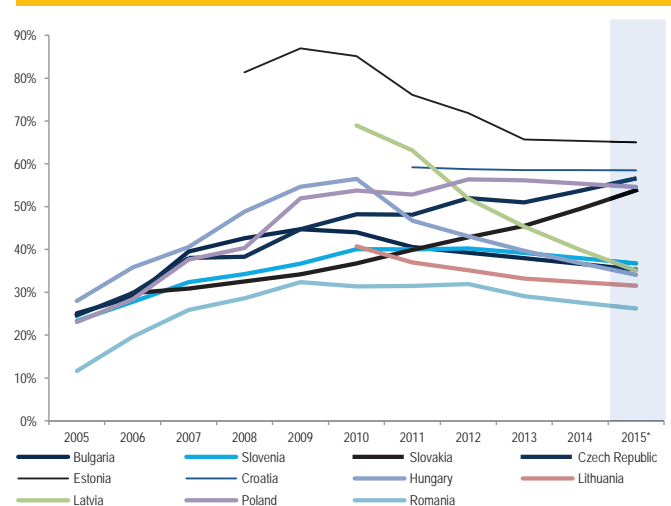
Source: ECB, Eurostat

Residential property market

Increasing importance of residential property market for financial stability:
- Higher volatility during the last crisis compared to other markets
- Highest exposure of banks to the residential property market in EA
- Still relatively high LTV on new housing loans

Chart: Residential prices (2010 = 100)

Slovakia — AAA countires — Eurozone periphery — CEE countires
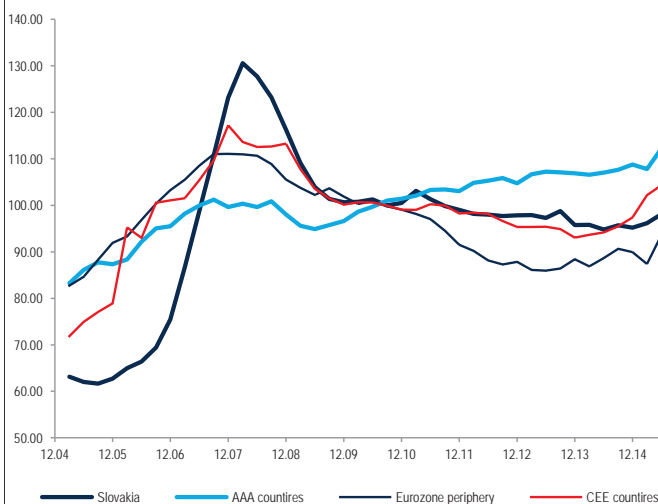
Source: Eurostat, NBS

Chart: Exposure of banks to the residential property market

Housing loans to total assets — Housing loans to total loans
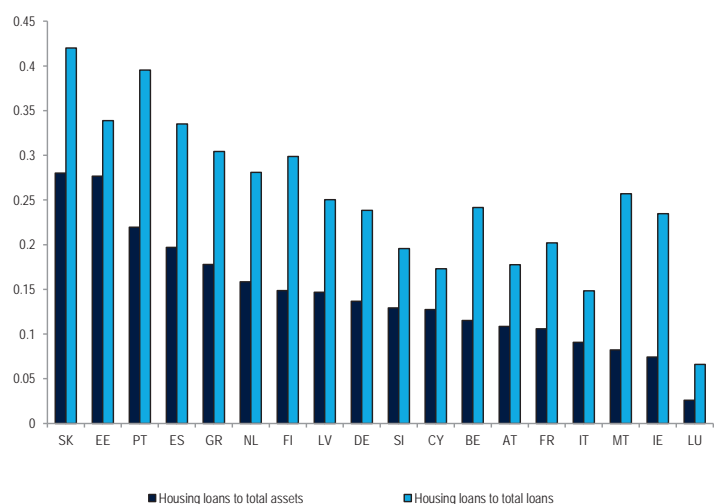
Source: NBS

Residential property market: supply

- Stable supply of new apartments in Bratislava
- Changes in the structure of available new apartments
- Decrease in overall supply of apartments
- Increasing speed of sales

Chart: Number of apartments in supply

Legend:
- Number of apartments in supply
- Number of new apartments in supply in Bratislava (rhs)
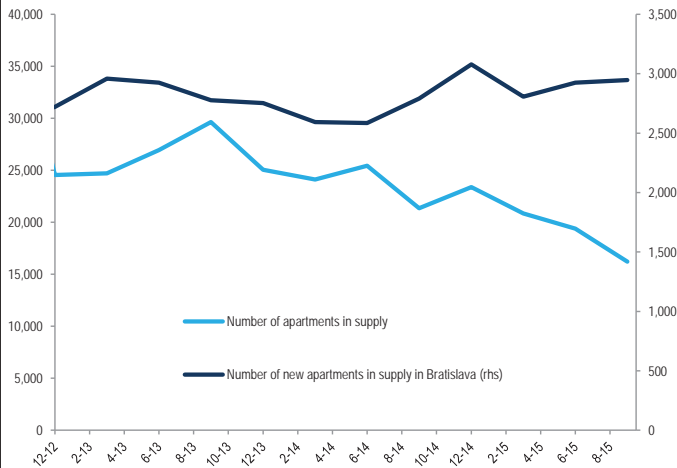
Source: CMN, Lexxus

Chart: Sold apartments and speed of sales

Legend:
- Number of sold new apartments in Bratislava
- Number of sold apartments
- New sold / new supply in Bratislava (rhs)
- Sold / supply (rhs)
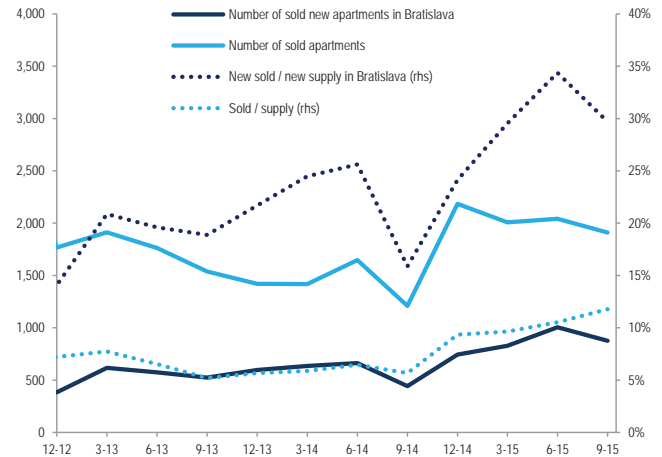
Source: CMN, Lexxus

Residential property market: prices (I)

- Increase in prices in all regions of Slovakia
- October 2015: Average y-o-y increase at 8%
- 2015: several common features with 2006: growing expectations of banks, households and developers, labour market improvements, banks' orientation on households

Chart: Change in prices across Slovak regions

Y-axis: Y-o-y change as of September 2015
X-axis: Y-o-y change beofre the peak in 2008
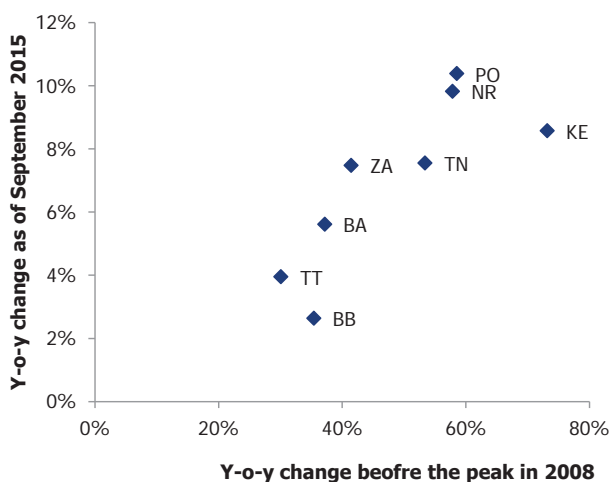
Source: CMN

Chart: Housing prices and housing loans

Legend:
- Y-o-y change in the volume of housing loans (in EUR millions)
- Average price of apartments €/m2 (rhs)
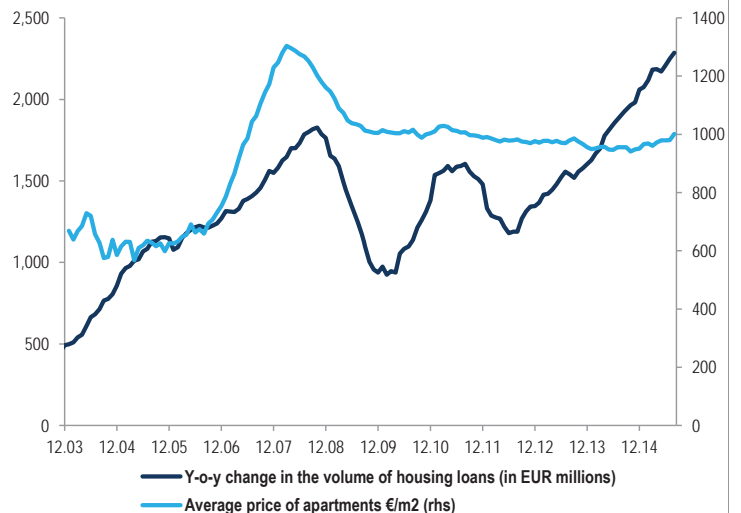
Source: NBS, CMN

Residential property market: prices (II)

- Relative to wages and interest rates, property prices are below their equilibrium
- Interest rates play crucial role here
  - Significant shift in the level of affordability
  - Change of the trend from 4Q 2014

Chart: Housing affordability index

Legend:
- Housing affordability index
- Housing affordability index (constant interest rates)
- Average price of apartments €/m2 (rhs)
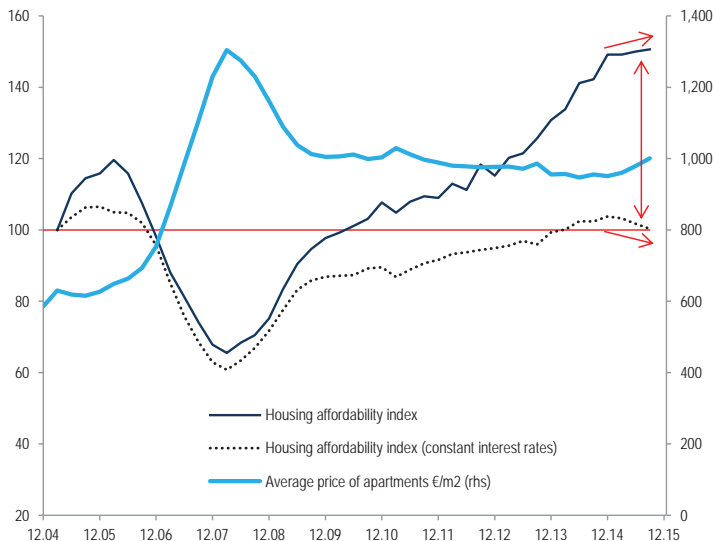
Macroprudential policy in Slovakia

- Preventive policy to eliminate potential build-up of the risks in the future
- NBS is one of the most active macroprudential authorities in the EU
- Our activities are mainly driven by the state of the financial cycle
  - High credit growth
  - Low interest rates
  - Positive economic environment

Chart: Relative frequency of use of measures by member state

Legend:
- All measures
- Substantial measures in 2014
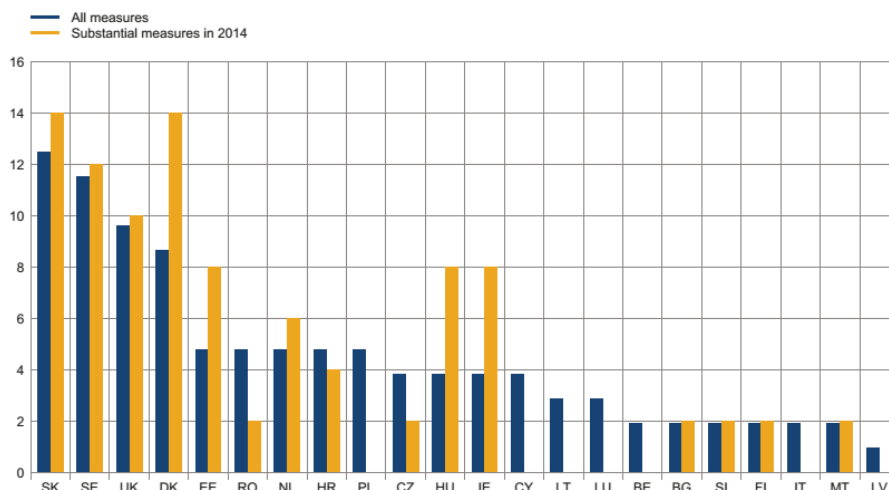
Macroprudential policy – retail lending

Action:
- Recommendation No 1/2014 of Národná banka Slovenska of 7 October 2014 in the area of macroprudential policy on risks related to market developments in retail lending

Contents:
- LTV cap: max 20% of new housing loans between 90% and 100%, no LTV above 100%
  - 15% from mid 2016, <u>10% from 2017</u>
- Internal limits on debt service-to-income
  - Affordability test of 200 b.p. on new housing loans
- Maximum maturity for housing loans (30y) and consumer loans (9y)
  - Loan amortisation rules
  - Age of borrower
  - Consumer loans max <u>maturity 8y from 2016</u>
- Rules for refinancing with topping-up
- Loan portfolio stress-testing
- Prudential approach in cooperation with mortgage brokers

Follow-up:
- Compliance of banks with recommendations
- Recommendation - > legislation

Macroprudential measures – capital buffers

Action:
- Capital conservation buffer (October 2014 - 2,5%)
  - No specific risk covered , increase in resilience
  - Frontloading of the capital buffer

- Buffers for systemically important banks (1%-3%, phase-in from 1/2016 to 1/2019)
  - To improve resilience of the most important banks (five banks)
  - Dominant position of banks in the financial sector; high concentration in the banking sector

Outcome
- NBS introduced capital buffers to increase resilience of the sector

Macroprudential measures – capital buffers

Countercyclical capital buffer

- Buffer should be introduced when credit growth is too high; an objective is to build resilience in good times and release it in bad times
- Increase in 'Domestic credit-to-GDP$_{trend}$ gap' driven by housing loans
- Indicators suggest that we are close to a non-zero decision

Domestic credit-to-GDP$_{trend}$ gap

Legend:
- Implied buffer rate (rhs)
- Domestic credit-to-GDP(trend) gap (rhs)
- Filtred domestic credit-to-GDP(trend)
- Domestic credit-to-GDP(trend)
- Buffer trigger (rhs)
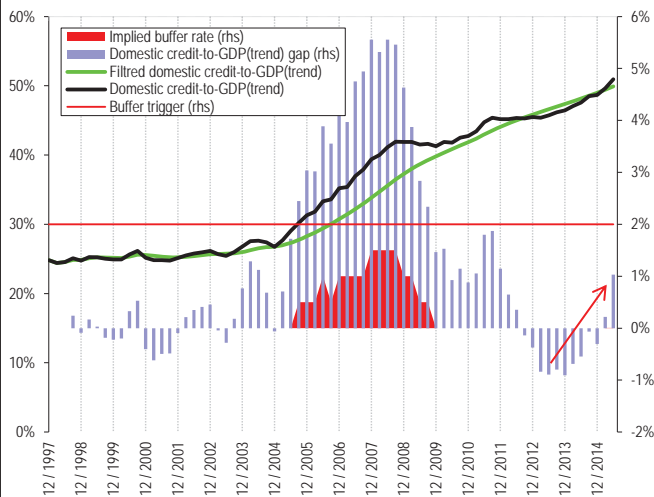
Source: NBS

Composite indicator: Cyclogram

Legend:
- Credit losses
- Lending conditions
- Indebtedness
- Property market
- Lending market
- Macro-economics
- Domestic credit-to-trend_GDP gap
- Tier 1 ratio (rhs)
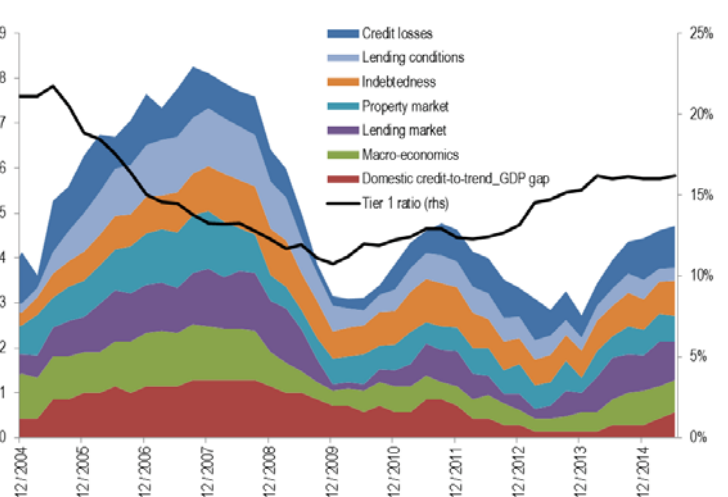
Source: NBS

NÁRODNÁ BANKA SLOVENSKA
EUROSYSTÉM

Thank you for your attention

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Democracy, Disincentives, and the Demand for Redistribution

Rupert Sausgruber (WU Vienna)
and
Jean-Robert Tyran (Uni Vienna)

Introduction

- Redistribution (R) involves a trade-off: efficiency vs. equity
  - R changes relative price of work vs. leisure, reduces labor supply → disincentive effect (DE)
- **This paper**: Experimental design to pin down causal effect of imposed R on DE. Results:
  - Labor supply is optimal (on avg.) absent R. Imposed R does not affect optimality of labor supply
  - Find strong DE

- In democracies, R is endogenous: voting
- **This paper**: democratic R is less harmful than imposed
- DE in Endo R is only about a third of that in Exo R. "Excess supply" of labor (work longer than optimal).
- This is an important result:
  "Dividend of democracy"

- Experimental evidence: Democratic choice improves cooperation (e.g. Alm et al. 1999, Tyran and Feld SJE 2006, Maier-Rigaud and Apesteguia 2003, Dal Bo, Foster and Putterman AER 2010, Kamei WP 2011, Mellizo et al. WP 2011, Markussen et al. RES 2014)
- Also related: Konrad and Morath (WP 2011), Agranov and Palfrey (NBER 2014): test of of Meltzer and Richard (JPE 1982)
- **This paper:** Suggestive evidence for causal effect
- Selection effect = groups for whom R is less costly (have low DE) are more likely to choose it.
- Causal effect = learning that group gets R because the group accepted R *changes* behavior
- We test for various possibilities (e.g. productivity, inequality aversion, rationality) and find no evidence of sorting on observables

Experimental Design

	Phase 1		Phase 2
Endo (N = 180)	Real effort (20 min) NoR	→ Voting, Expectations →	Real effort (20 min) NoR or R
Exo (N = 60)	Real effort (20 min) NoR	→ Expectations →	Real effort (20 min) NoR or R (50 % chance)
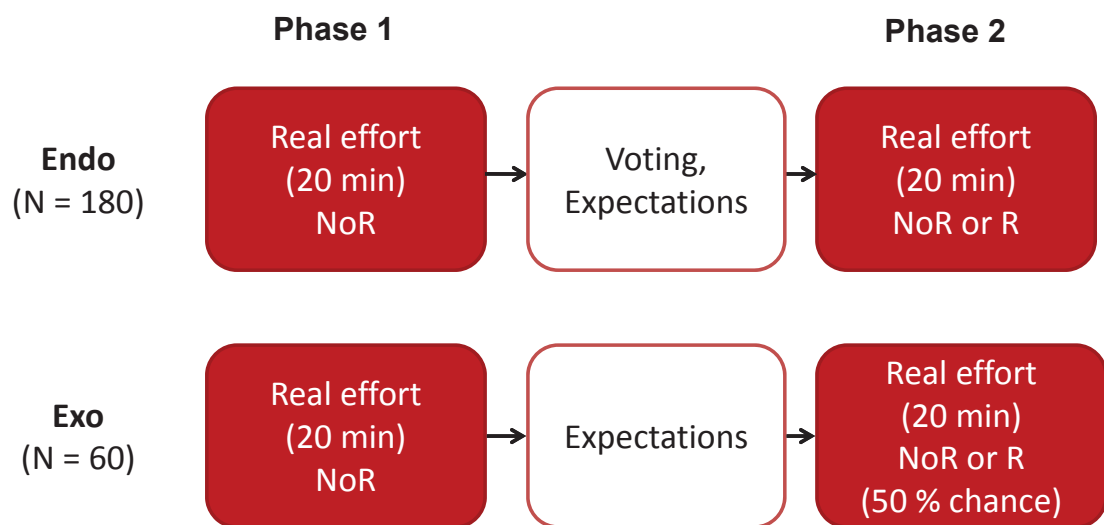
Real effort task
- Calculation of cross-sums (7 + 5 = ?)
- Piece rate: 1 point per cross-sum

Participants can substitute work for leisure
- Switch into "leisure mode"
- Payoff in leisure mode: 15 sec = 1 point
- Same for all: homogenous "preferences for leisure"

Increasing difficulty of task over time (6 + 7 + 3 + ... + 4 = ?)
- corner solutions become less likely

Groups of 3 subjects (random assignment, partner matching)

Redistribution scheme:
- 60% tax on work income (leisure is untaxed)
- Total tax revenue is redistributed per capita
- Net tax rate is 40%

Feedback at the end of Phase 1
- Own output
- Others' output
- Own leisure

Expectations for Phase 2
- Own output
- Others' output (this part is paid)
- Own leisure
- Calculator: Feedback exp. Profit

Voting
- Yes / No
- Simple majority rule

Results:
Phase 1 (No R)

Phase 1　Phase 2

Endo (N = 180)

EndoNoR → D → EndoNoR
EndoNoR → D → EndoR

DD

Exo (N = 60)

ExoNoR → D → ExoNoR
ExoNoR → D → ExoR

DD

DDD
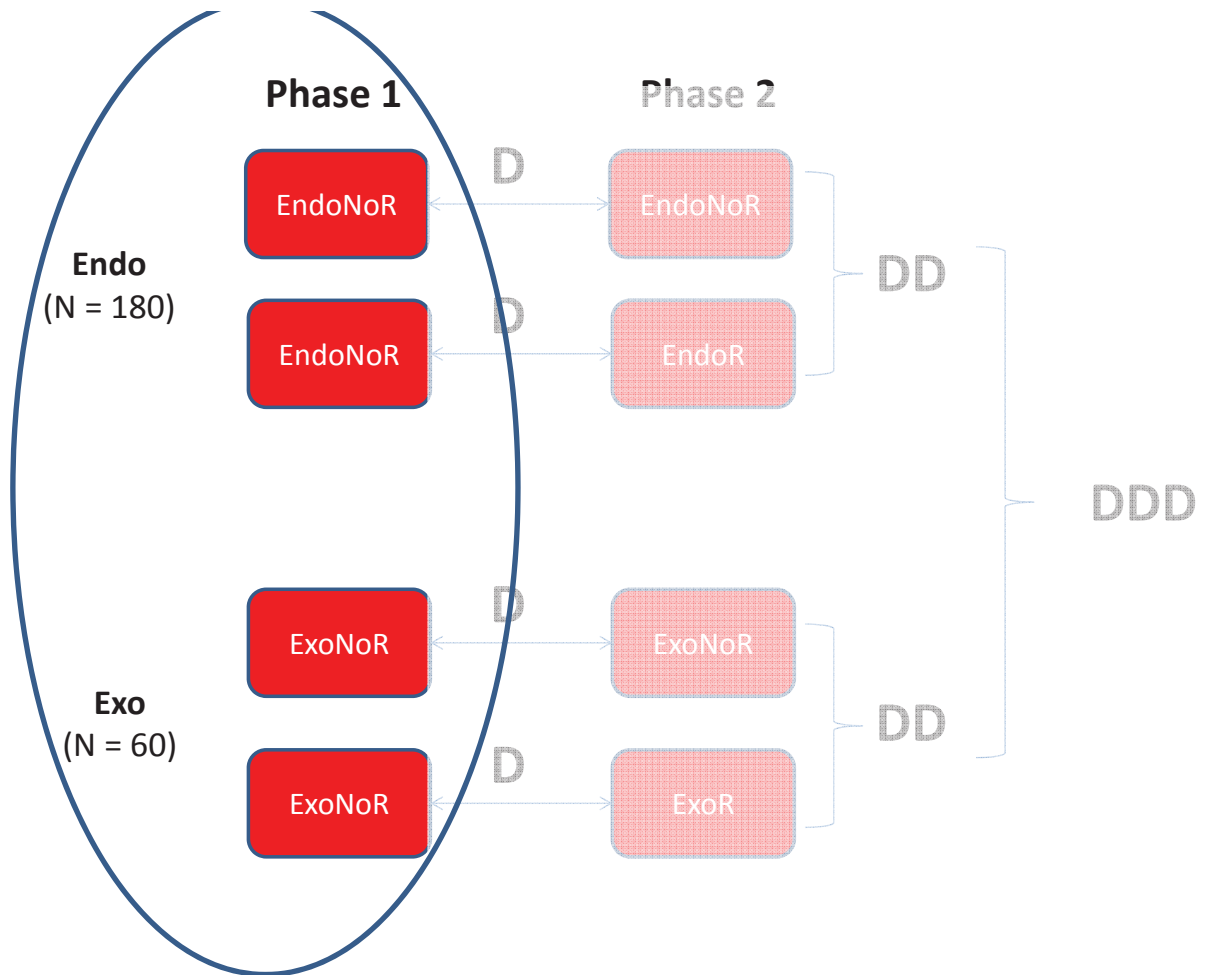
Results — Cross sums solved in phase 1
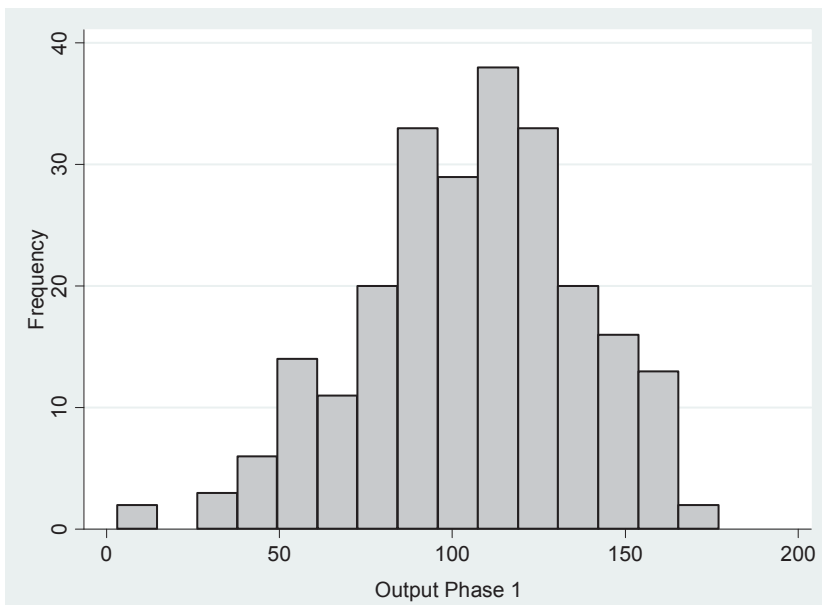
- Sufficient incentives to work (avg. 106 tasks, n = 240)
- Heterogeneity of output and earnings

- Work about 15 min., 5 min. leisure on avg.
- Labor supply is close to optimal
- switch if it takes more than 15 seconds to solve a task, i.e. 45'' per screen
- Average deviation from the optimal stopping time is -4.0 seconds per task (SD=29.4)

Results:

Effect of imposed R

(Phase 1 vs. 2, Exo)
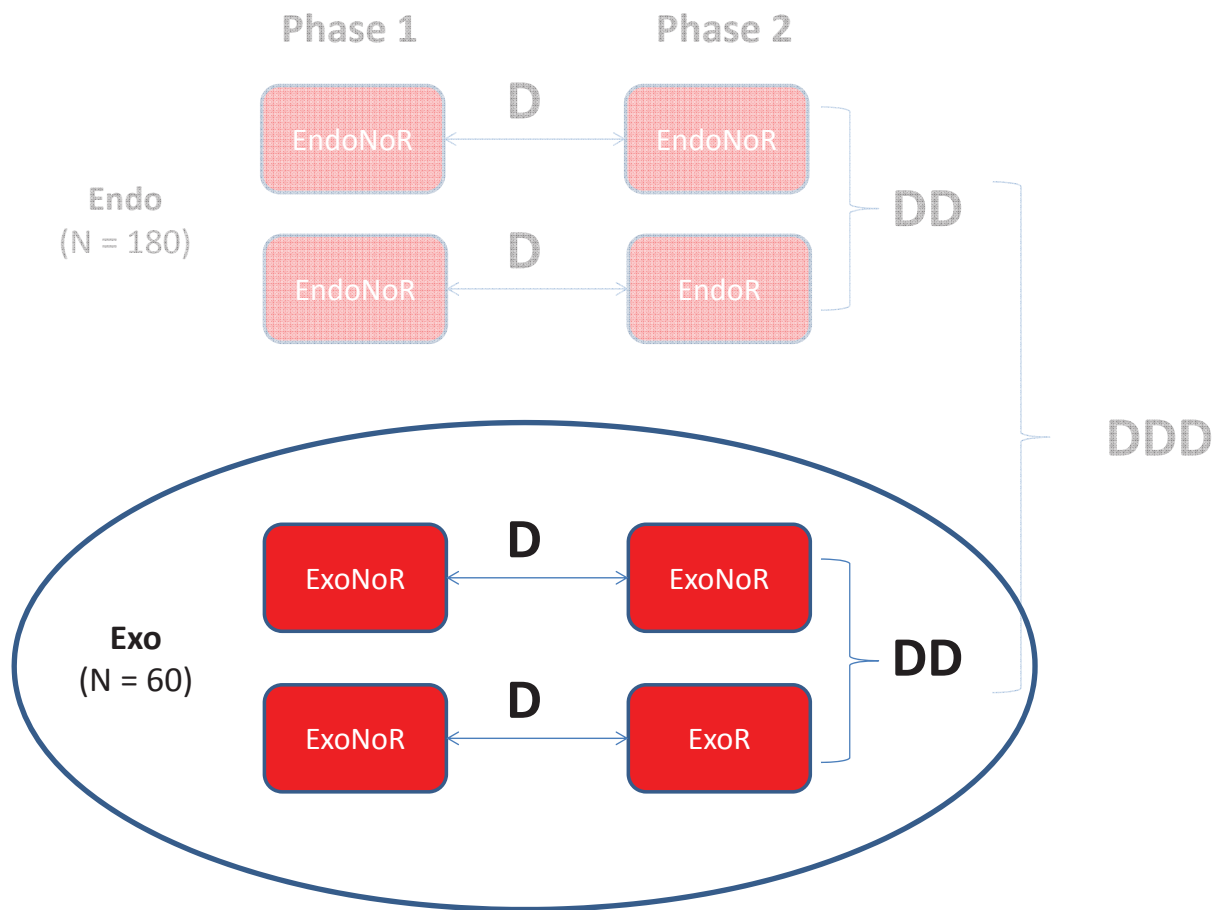
Results

Learning (and fatigue)

Without redistribution:
D = 9.1
(ExoNoR)

With redistribution
D = -25.4
(ExoR)
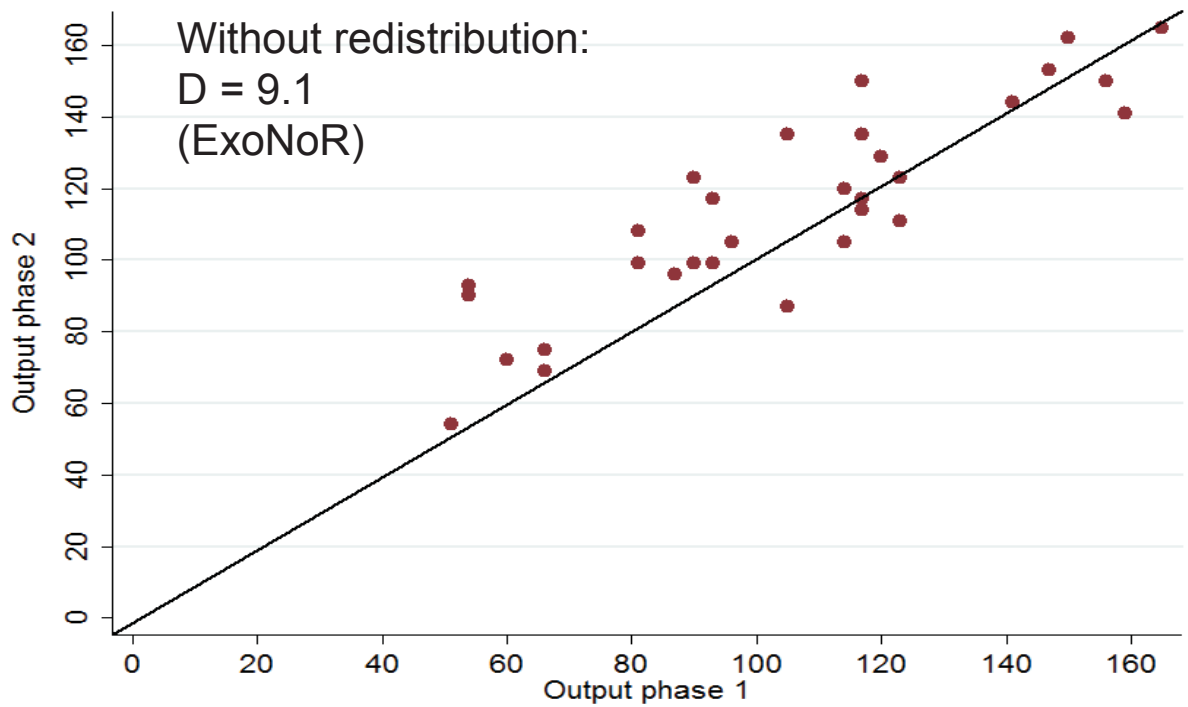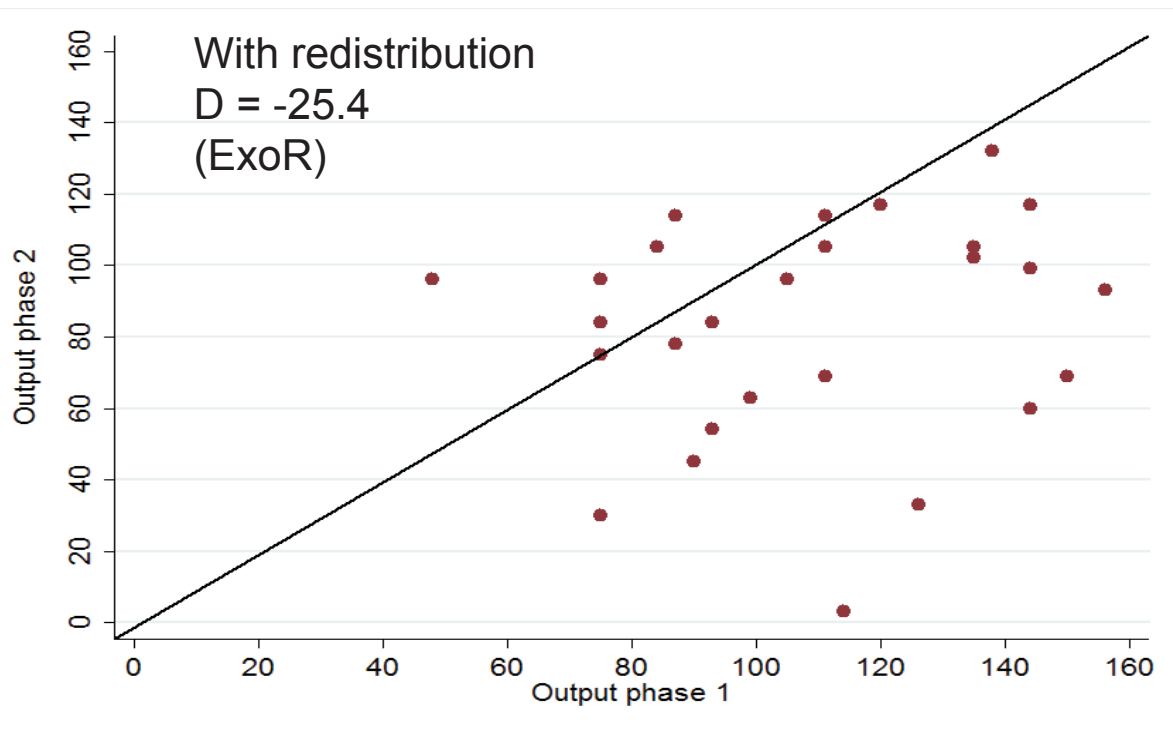
Response to imposed R (in Exo)

- 🔴 Strong disincentive effect in Exo: **output falls by 34.5 tasks**
  (= DD, D(ExoNoR): +9.1 vs. D(ExoR): -25.4, p = 0.001)

- 🔴 Response to R is close to optimal in Exo: should switch after 9''
  with R (15'' without R)

  - 🔴 Small change in deviation from optimal work time due to R:
    D(ExoR) = 17.4'' vs. D(ExoNoR) = 3.9'', (p = 0.083)

  - 🔴 No change in "intensity" (tasks per 10 sec.) due to R:
    D(ExoR) = -0.16 vs. D(ExoNoR) = 0.06, (p = 0.392)

- 🔴 DE (output falls) mainly because they work less with R ("duration"):
  D(ExoR) = -321'' vs. D(ExoNoR) = +83'', (p = 0.000)

- 🔴 Avg. income from work falls by 32.3%
  Average profits, including income from leisure, fall by about 6%
  (= DD, D(ExoNoR): 3.55 vs. D(ExoR): -4.04, p = 0.021)

Results:
Effects of chosen R (Endo)
vs. Exo
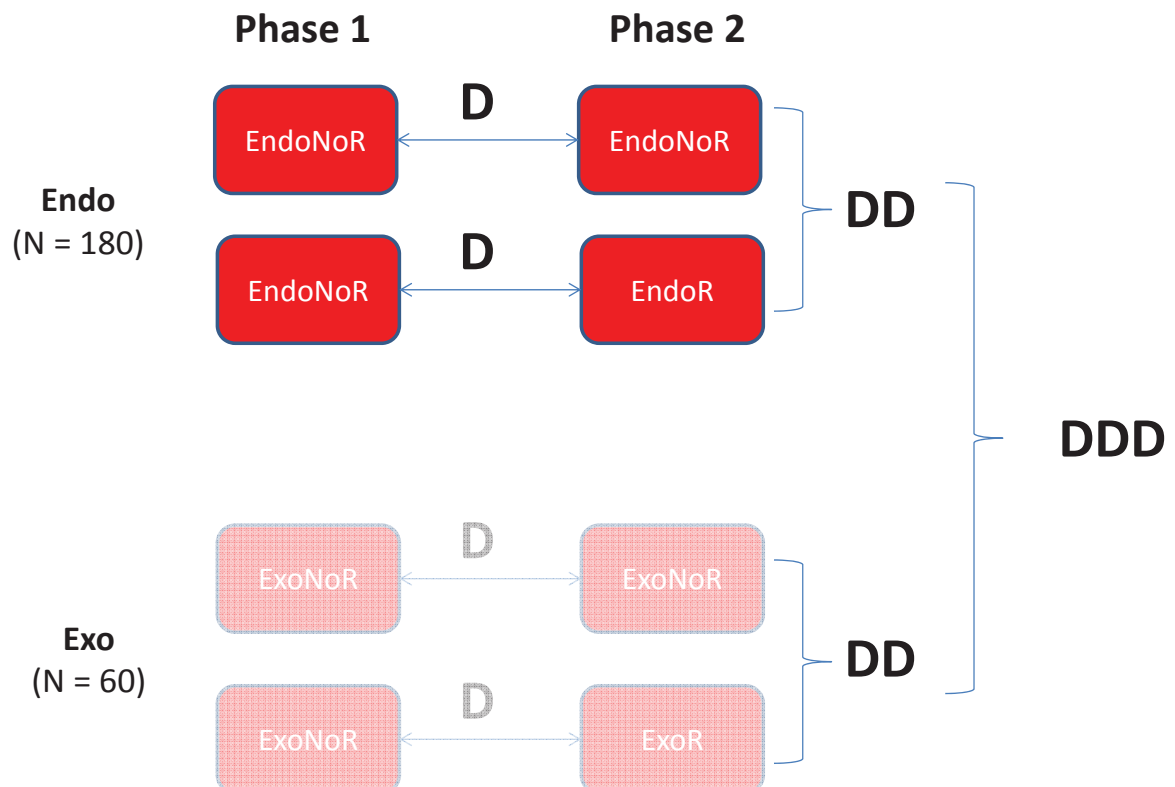
R is less costly if chosen than if imposed, DE in Endo < DE in Exo

- R is chosen in 35% of cases
- DE in Endo is significant but small: **output falls by 12.5 tasks** (= DD, D(EndoNoR) = 1.5, D(EndoR) = -11.0), $p = 0.013$
- Percentage drop in output in Endo about a third of Exo (11.9% vs. 32.3%)
- DE in Endo is significantly smaller than in Exo DDD = 22.0 (DD in Exo = -34.5), $p = 0.016$
- Lower inefficiency from redistribution (including income from leisure, DD Endo: -2.0 vs. DD Exo -8.2 , $p = 0.078$)

With chosen R, people work "too much" (duration)

- Should switch if solving a task takes > 9 seconds
- Deviation from opt. stopping time: DD(Endo) = 38.2'' ($p = 0.040$) (vs. DD(Exo) = 13.5'', $p = 0.083$), DDD = 25.8'', $p = 0.040$
- Intensity does not change ($p = 0.905$)
- As a consequence of "oversupply" of labor: More redistribution in Endo than Exo (avg. tax revenue is 55.7 vs. 49.7 points, $p = 0.004$)

So far:

- Strong, optimal response to imposed R (in Exo)
- R has weaker disincentive effect if chosen than if imposed (output falls by 11.9% rather than 32.3%)
- Oversupply of labor if redistribution is chosen, this leads to higher (12%) levels of R

We think these are important results: «**dividend of democracy**»

Now:
Why is R less costly when chosen? Selection or causal?

Selection or causal effect?
No evidence for selection on
- Rationality: failure to optimize
- Preference: inequality-aversion
- Productivity: low types
- Beliefs: those who underestimate DE vote for R
- Estimation of counterfactuals for voting (in ExoR) and for DE (in EndoR), respectively

Difficulty: we can only test for selection on «observables»

Suggestive evidence for causal effect
- Behavior is different if R is accepted vs. rejected for GIVEN individual voting
- Interpretation: Outcome of vote activates contribution norm

Selection of non-optimizing subjects? (no)

Story:

Those who tend to work too much also tend to vote yes and therefore sort into R

Tests:

- Non-optimizing subjects in phase 1 are not more likely to vote YES
- Non-optimizing subjects in phase 1 are not overrepresented in groups that accept redistribution

Selection of inequality averse voters? (no)

Story:

1. Those who dislike unequal distribution of income tend to vote yes and are overrepresented in groups that accept.
2. Inequality-averse voters with R work too much in phase 2. ("don't mind to work for others")

However, reduction of inequality by oversupplying labor is possible only for high-productive subjects. Oversupply = reduce my income and increase others' income. If low types oversupply, they increase inequality.

Test:

- Excess labor supply in EndoR does not differ between high and low productive subjects ($p = 0.697$)

Selection of low-productive types? (no)

Story:

1. Low-productive types react less strongly to R
2. Low types are more likely to gain from R
3. A group that happens to have many low types is more likely to accept R

Test:

− Phase 1 output was the same for individuals who implement R and those who do not (105.3 vs. 103.4, p = 0.733)
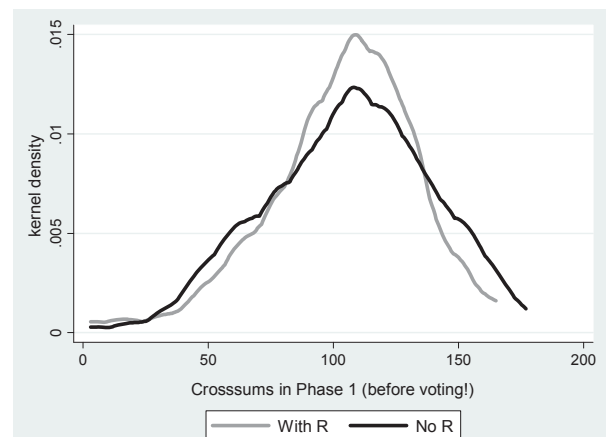
R has a causal effect on disincentives

Oversupply if accepted, independent of individual voting

Table: D in Excess labor supply (phase 2- phase 1, avg. seconds per task):

	R	No R
Yes voters	42.568 (N=43)	2.706 (N=34)
No voters	32.347 (N=20)	0.331 (N=83)

DD(R vs. NoR: Yes) = 39.861 (p = 0.000); DD(R vs. NoR: No) = 32.015 (p = 0.000);

DD(yes vs. no: R) = 10.221 (p = 0.391); DD(yes vs. no: NoR) = 2.374 (p = 0.732);

→ Excess labor supply does not seem to be due to selection

→ Outcome signals and activates pro-social behavior

- Experimental design to pin down causal effect of imposed R
- Imposed vs. chosen (voting) R

Main results:

- Imposed R has large disincentive effect. Optimal response
- Chosen R has lower cost
- No evidence for selection, suggestive evidence for causal effect
- Interpretation: "Dividend of democracy" because chosen R is "legitimate", activates a contribution norm:
  - → Excess labor supply
  - → Higher levels of redistribution
  - → Mitigates the disincentive effect

Illustration of Induced concavity

Example of 3 subjects:

High productive subjects (red, blue) <u>rationally</u> spend more work time than low productive (green)
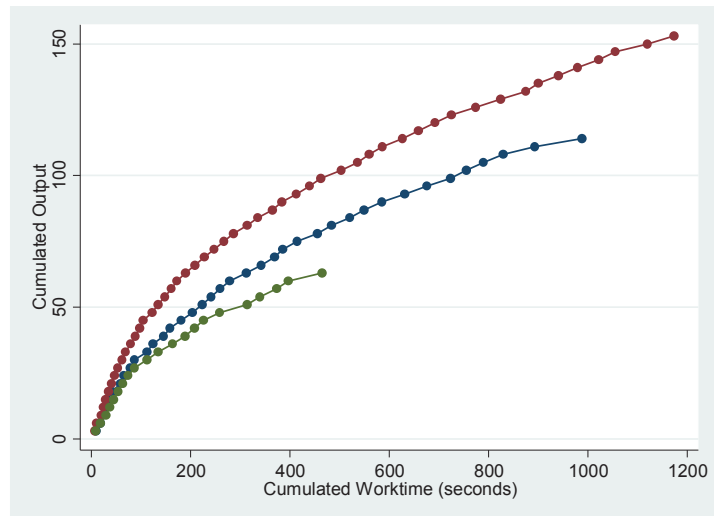
Time budget Z, allocated to leisure L or work $w = Z - L$.

Production function $f_i(w_i)$, $f_i' > 0$, $f_i'' < 0$

Constant return l of unit of time allocated to leisure

Maximizing $\pi_i = pf_i(w_i) + l(Z - w_i)$ yields the optimality condition for w_i^*(NoR)

$$f_i'(w_i) = {}^l\!/_p$$

With a tax of t on labor income and per capita redistribution, profits are: $\pi_i = (1 - t)pf_i(w_i) + l(Z - w_i) + \frac{t}{n} p \sum_{j=1}^n f_j(w_j)$

Maximizing wrt w_i yields the optimality condition for w_i^*(R):

$$f_i'(w_i) = \frac{l}{p\left(1 - \dfrac{t(1 + n)}{n}\right)} = {}^l\!/_{p^R}$$

$p^R < p$, → redistribution has DE (in experiment, $p^R = 0.6$)

Predictions — Illustration
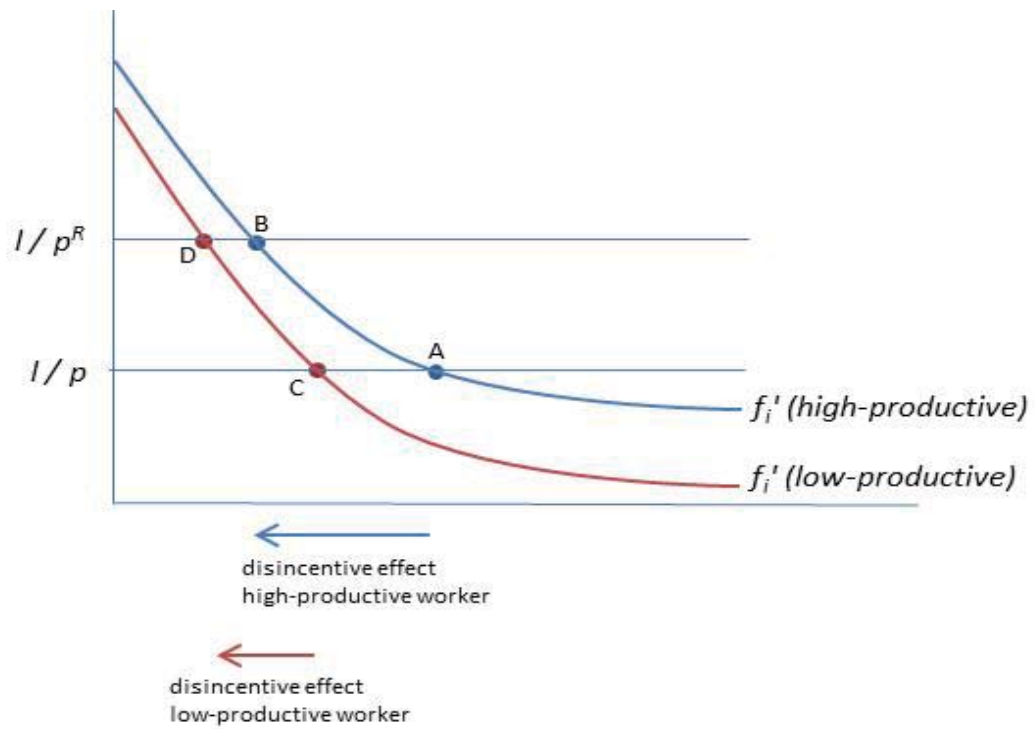
Do subjects optimize — Measuring Optimality
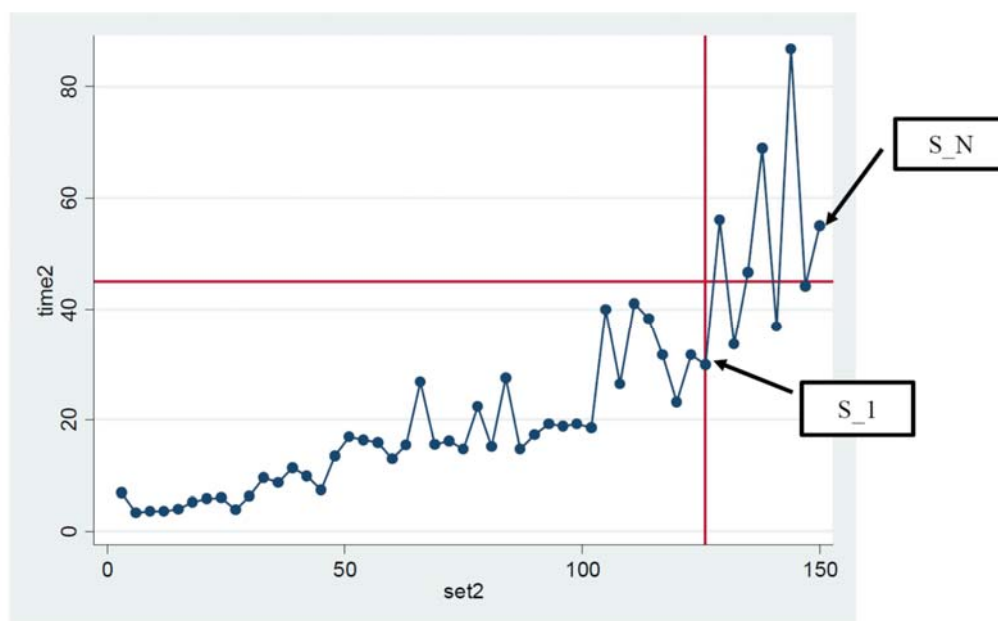
Cumulated worktime per Task: Integral between S_1 and S_N as measure of optimality
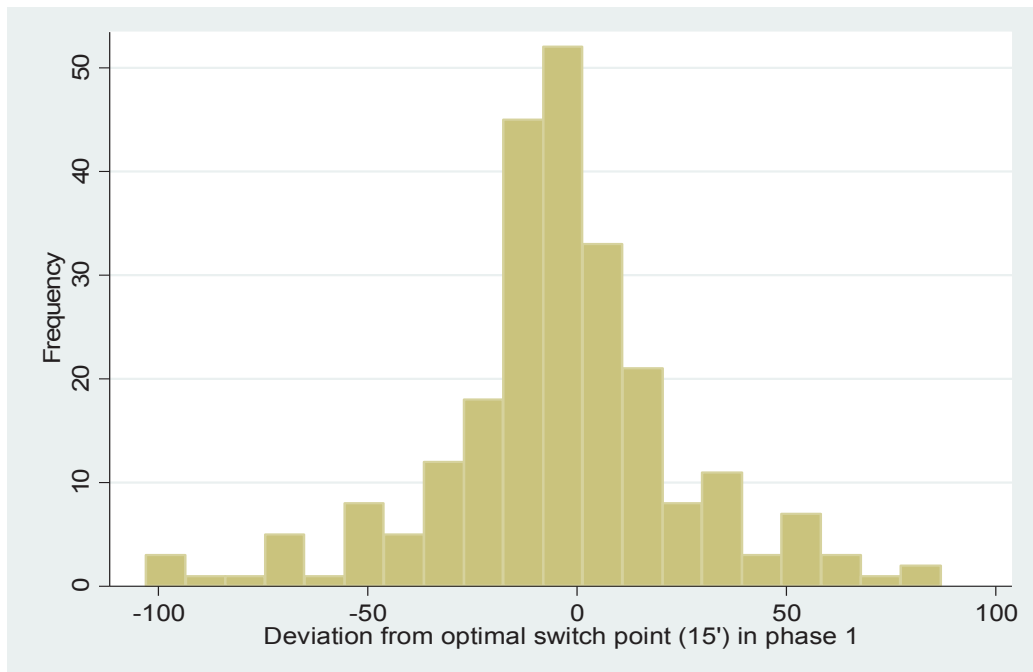
Average deviation from the optimal stopping time is -4.0 seconds per task (SD=29.4, min=-103.0, max=86.9).

Check: randomization into treatments was successful

- Output and work in phase 1 is not different between those who are assigned to Exo or Endo treatments

Why is R less costly when chosen? Selection or causal effect?

Selection = Outcomes in EndoR are «better» because participants with particular characteristics vote for R, and people with these characteristcs also tend to «oversupply» labor

Causal = Outcomes in EndoR are «better» because participants change their behavior upon learning that R was accepted

Note:
- both effects could be present simultaneously
- Finding selection would be interesting: groups for whom R is less costly are more likely to choose it

---

Estimation of counterfactual DE: Procedure

- What would DE be for subjects in EXO?
- Estimate how voting in Endo depends on Ph1 variables: output, leisure, belief about DE, rank within group, productivity, measure of optimal labor supply
- Use Probit estimates to make counterfactual prediction for voting of each subject in ExoR
- Randomly compose groups, predict whether the majority in the group would have accepted
- Simulate distribution of DE in groups that would have accepted R (1000 randomly composed groups) using the observed DE (from Exo)
- Compare that distribution to the observed DE (for those who accepted) in Endo

Result

Distribution of DE
in ExoR for groups
predicted to accept R,
assuming no behavioral
change
(1000 draws)

Red line shows DE
in EndoR
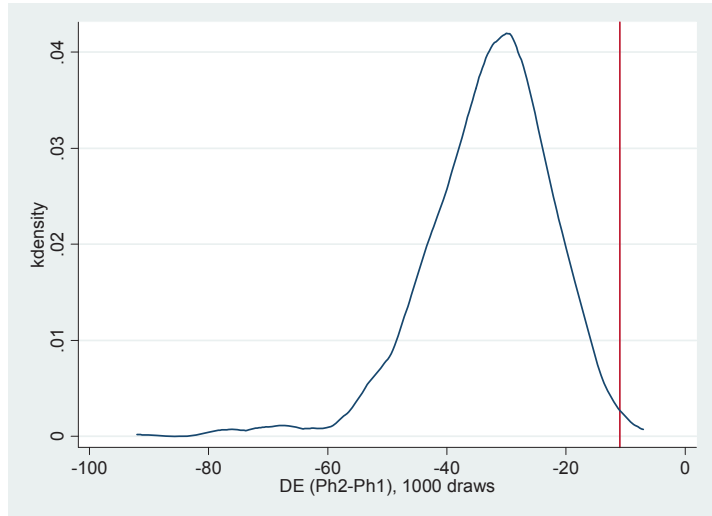
→ Selection based on observables unlikely to explain why DE is small in
Endo
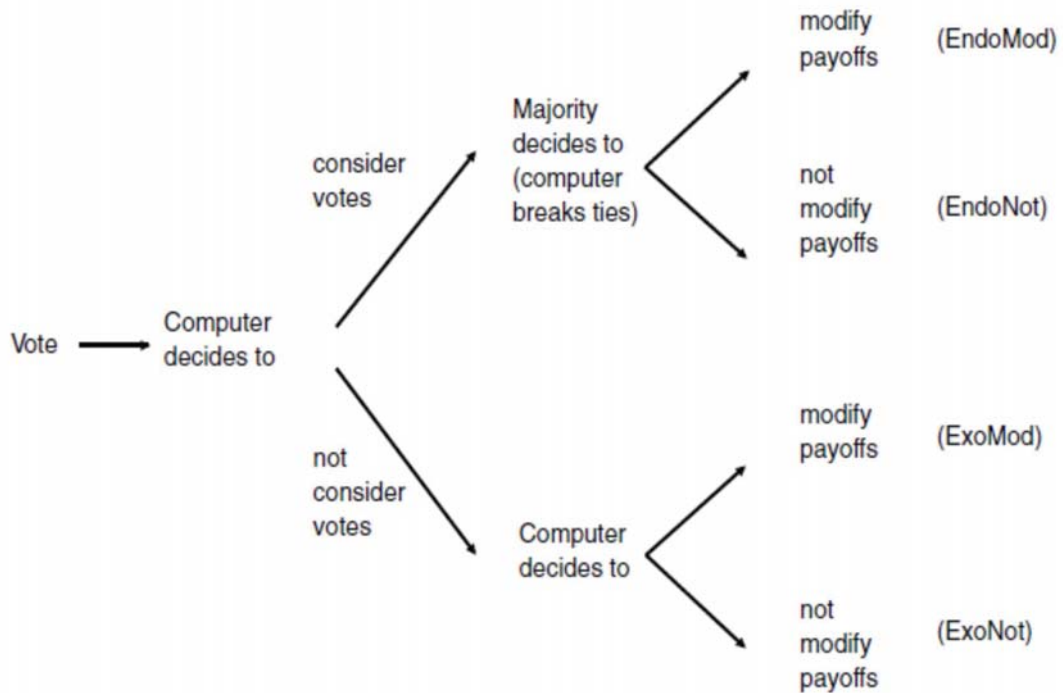
Estimation of counterfactual DE: the basic idea

- We observe each subject only in one condition. Counterfactual: How would a particular subject in EndoR have behaved if that subject were in a different condition?
- Estimate how behavior in a particular condition is related to observables. Predict individual behavior of subjects in other conditions on the basis of these estimates.
- Suggestive evidence for causal effect if difference after controlling for all observables

Estimation of counterfactual DE: Example

- We observe how participants in ExoR react to R
- We do not observe how they would have voted (because they are in Exo), but we can estimate the counterfactual from observed voting choices in Endo
- Question: What is the (counterfactual) DE for those in ExoR who are in groups we predict to accept R if they were given a chance, assuming that endogenous acceptance does **not** induce behavioral change?

Illustration of Induced concavity

Example of 3 subjects:

High productive subjects (red, blue) <u>rationally</u> spend more work time than low productive (green)
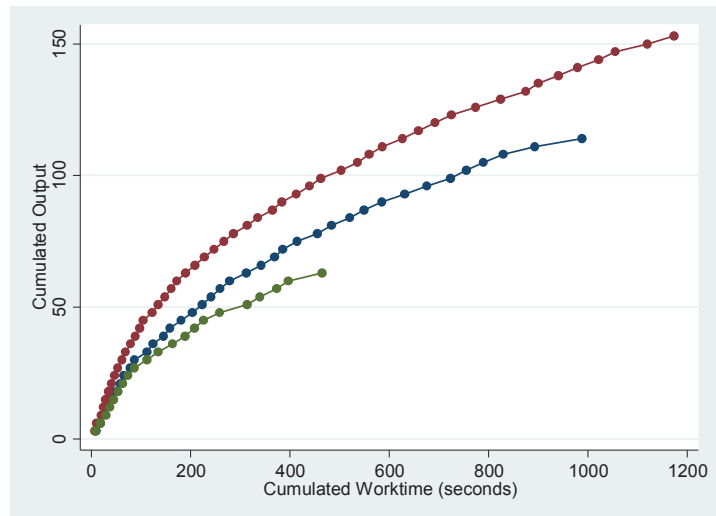
Induced concavity
→ **Low productive subjects should react the least** (and vice versa)

Effects of R in EXO
Output falls by 34.5 overall (DD effects, i.e. D: NoR vs. R)

Output falls by:
- 18.8 in the bottom third
- 36.8 in the middle third
- 50.0 in the top third

Chosen R increases oversupply independent of voting

Figures show avg. excess work time (over all tasks) by those who voted yes (left) and those who voted no (right)
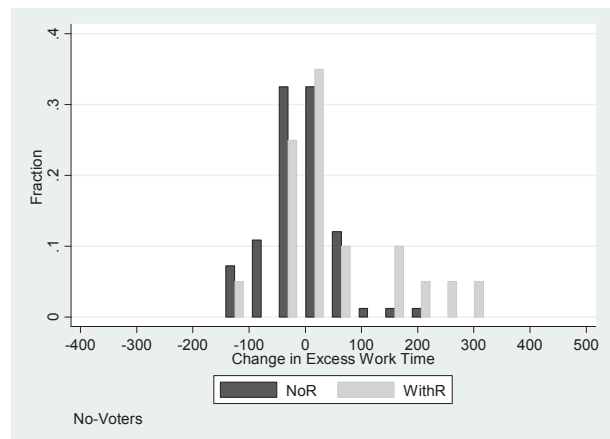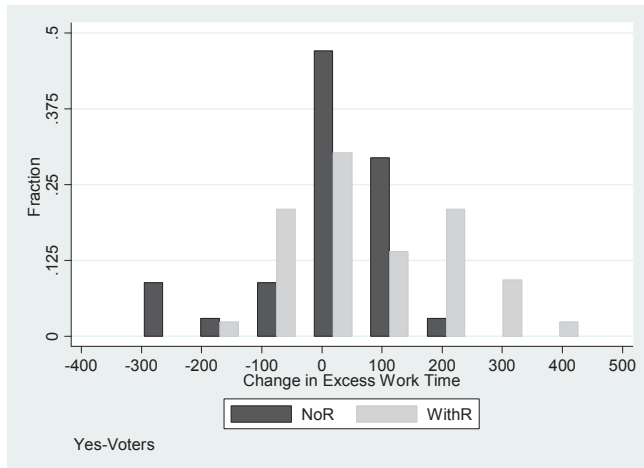
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Results
Details on the disincentive effect

Imposed R is a bad deal for most voters (in EXO)

🔴 Estimate counterfactual: For each subject, we only observe output either with R or without R → Estimate Δ overall profit (including leisure) in phase 2 NoR vs. R using outcomes in phase 1 (own output, own leisure, others' output) for each i

🔴 A minority of voters would gain from redistribution:
27% (= 16/60) gain, 73% lose (check: 33% do gain)

🔴 Only 5% of groups (1 out of 20) would gain from R

🔴 Income from work falls by 32.3% (observed)
Average (counterfactual) profits, including income from leisure, fall by about 6.5% (= DD, D(NoR): 3.11 vs. D(R): -5.13, $p = 0.000$)

→ Demand for redistribution should be low given behavior in Exo

- In democracies, R is endogenous: voting
- Standard economics: Demand for R depends on primary income distribution and disincentive effect (DE)
- But "demand for R" can also be driven by other factors
  - Biased expectations on DE
  - Inequality aversion
  - (ideology, income mobility, source of income, …)

**This paper**: is voting for R in line with standard prediction?
Result: No

- Too much support using data from Exo as benchmark
- Why?

Voting: Demand for R is "too high", given results from Exo

In ENDO

- Vote Yes: 43% (= 77/180) of subjects (only 28% would gain given DE in Exo)
- Implement R: 35% (= 21/60) of groups (only 5% gain in Exo)
- Voting is broadly in line with relative income position (more to come on who is favor, and why)
- Note: Even bottom voters sometimes lose
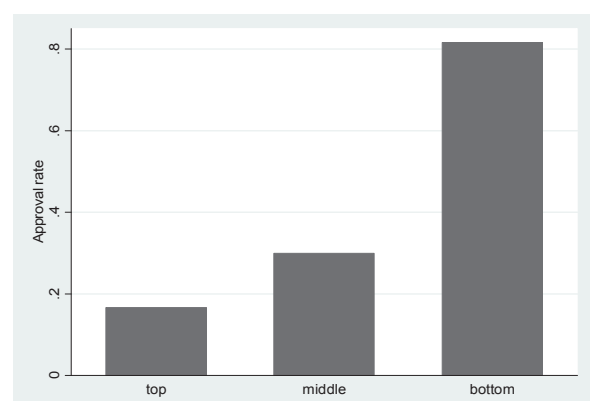
Deliberate generosity in voting: Supporters of R vote against their self-interest

- Of all inconsistent voters, many more vote yes than no
- 42% (= 32/77) of Yes voters support R despite expecting to lose from R
- Only 8% (= 8/103) No voters are inconsistent, i.e. reject R but expect to gain. Probably mistakes
- About a third (= 42% - 8%) of supporters for R seem to do so deliberately (generous, against their perceived self-interest)


Deliberate generosity in voting: relatively high-productive people support R against their self-interest

- Figure shows Yes votes as a function of expected gain / loss, by relative income position in the group
- About 2/3 of Yes votes come from bottom types and most of these (73%) expect to gain
- But a third of Yes votes come from middle or top types. Many (68%) of these support R despite expected loss. Seem to have a preference for R
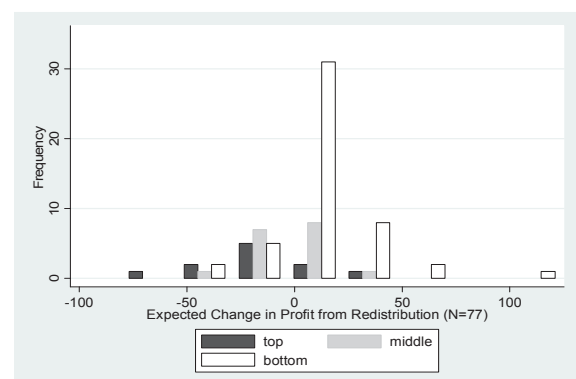
Expectations-driven bias: Do voters "shoot themselves into the foot"?

- 🔴 29% expect to gain but 43% vote yes. It's not because gains from R are overestimated (29% expect to gain, 39% do gain, p = 0.059 chisq.)
- 🔴 Most voters have qualitatively correct expectations (74%) and most vote in line with expectations (78 %)
- 🔴 26% (=47/180) have incorrect expectation (e.g. expect to gain but lose)
- 🔴 Incorrect expect expectations do not "bias" (consistent) voters towards R.
  Share of yes-voters who expect to gain&Yes but lose: 16% (= 12/77)
  Share of No-voters who expect to lose&No but gain: 20% (= 19/103), p = 0.613
- → Incorrect expectations do not bias voting

change in productivity (crosssums per 10 sec.)
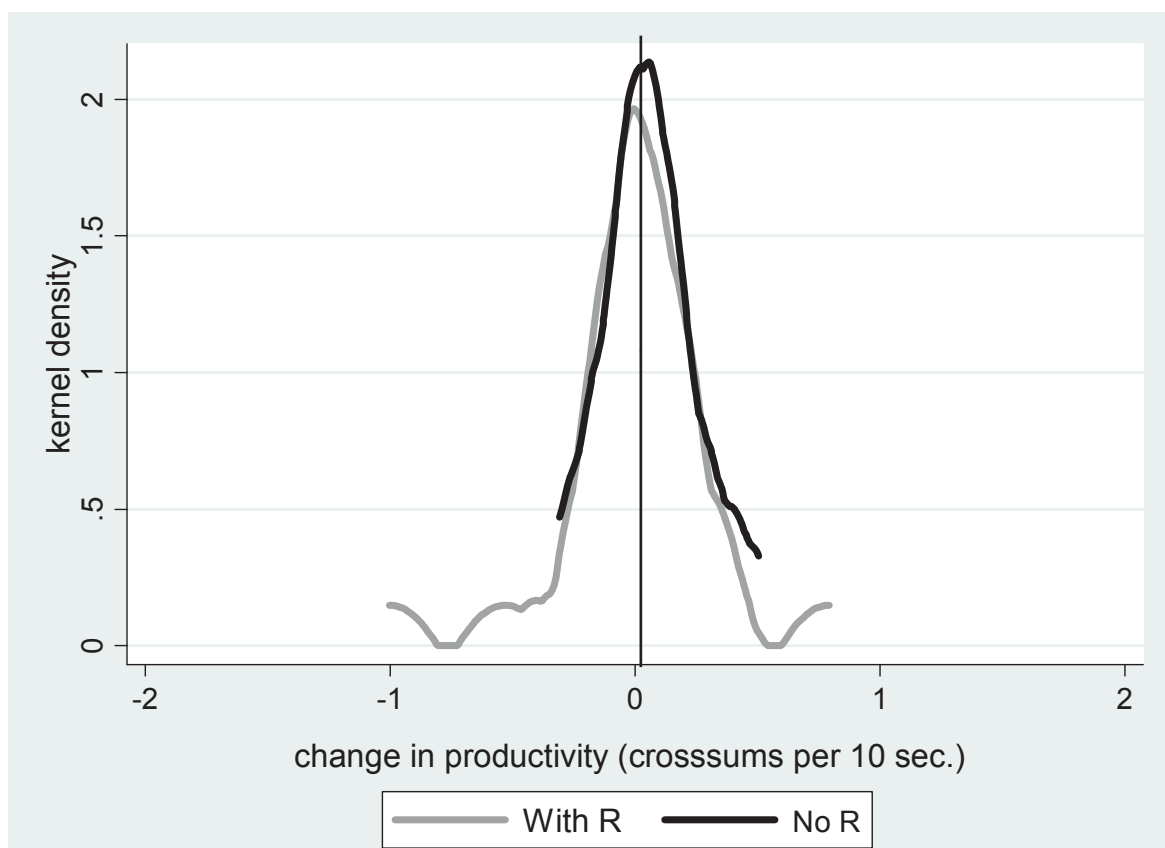
With R   No R

R seems to have a causal effect on disincentives

Oversupply if accepted, independent of individual voting

Table: Excess labor supply (avg. seconds per task in phase 2) per individual and group vote:

	With R	No R
Yes voters	1.5 (N=43)	0.8 (N=34)
No voters	1.4 (N=20)	0.5 (N=83)

- **Selection effect** = subjects with particular characteristics are more likely to vote for R and therefore sort into R in Endo and these subjects tend to have low DE.
- **Causal effect** = learning that group gets R because the group accepted R *changes* behavior (compared to the case where the group has not been asked)
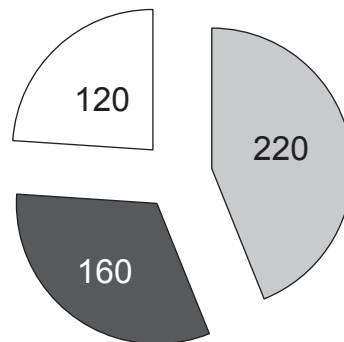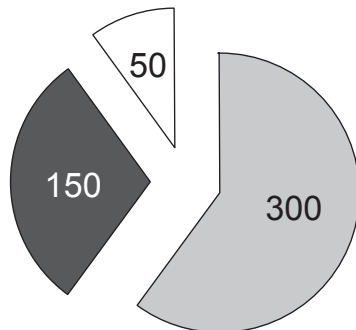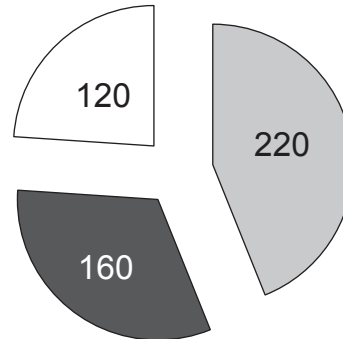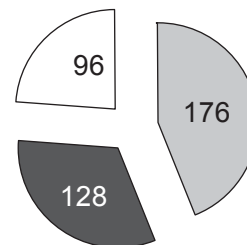
No redistribution
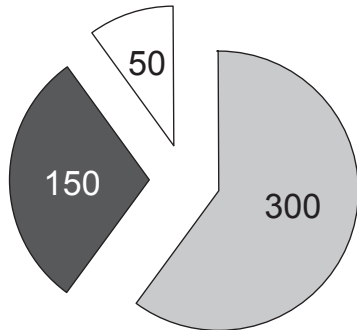
No redistribution
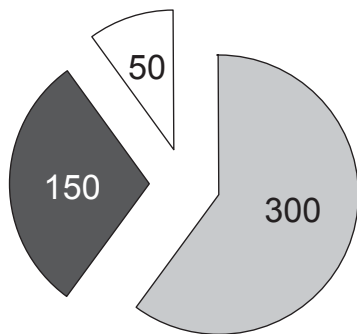
Redistribution **without** disincentive effect

No redistribution

Redistribution **without** disincentive effect

Redistribution **with** disincentive effect (20%)

Lab Experiment: earn money in real effort task, impose R (Exo) or vote on R (Endo). Elicit expectations. R: flat tax & redistribute per capita (net tax is 40%)

- Exo NoR vs. ExoR: Do workers respond to imposed redistribution? (yes, DE is large, about 30%)
- Given these results, demand for R should be low
- Endo: much support (43% yes)
- Disincentive effect is much lower when R chosen (about 1/3 of Exo)
- Interpretation: Voting signals a social norm. If R is legitimate, workers deliberately oversupply labor. Causal effect is suggestive
- We check for: biased expectations, selection, insurance motive, …

Advantage of lab

1. Clean measurement of the disincentive effect (response to R)
2. Measure effect of (cet.par.) variation of imposed vs. chosen R on disincentives

Estimates of disincentive effect (tax elasticity of labor supply) vary

Keane (JEL 2011: 961): «…considerable controversy over the responsiveness of labor supply to changes in wages and taxes»

- Hicks elasticities reported range from 0.02 to 1.32 (avg. 0.31) for males, for females from 0.77 to 1.6 (Eissa 1995, 1996, sum of elasticity at extensive and intensive margin). Ours is about 0.75

Existing work focuses on determinants of R

- Different beliefs about income mobility and about what determines inequality, racial group loyalty, etc.

Our study focuses on effect of R on DE

- Legitimate (endogenously chosen) R is less harmful
- Emerging topic in institutional choice xx

Insurance against uncertainty (i.e. subjects expect a drop in performance)?

We believe that an insurance motive is not very important:

1. At the time of voting, subjects are experienced with the task
2. No signs of mean reversion: performance rankings do not change over phases
3. YES- and NO-Voters do not differ regarding the expected change in production and profit between phases 1 and 2
4. Groups with and w/o redistribution do not differ regarding these expectations

Example 1:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GROSS EARNINGS from CROSS-SUM TASK	GROSS EARNINGS from SWITCH TASK	GROSS EARNINGS TOTAL Before tax earnings	TAX 60% tax on cross-sum earnings	GROSS EARNINGS minus TAX After tax earnings (before redistribution)	REDISTRI-BUTION REVENUE Amount given back (159/3)	FINAL NET EARNINGS Earnings after redistribution
N1	120	90	210	72	138	53	191
N2	80	100	180	48	132	53	185
N3	65	120	185	39	146	53	199
			Sum: 575	Total: 159		Total: 159	Sum: 575

Table summarizes means of values in Exo treatment for subjects experiencing redistribution (ExoWR) and those who do not (ExoNR).

Reaction	ExoWR	ExoNR
Intensive margin (Productivity)	Mean: -0.160 Median: 0.000	Mean: 0.055 Median: 0.043
Extensive margin (Time spent on work)	Mean: -321.02 Median: -348.19	Mean: 83.08 Median: 24.64
Rationality (sec. per screen)	Mean: 8.37 Median: 9.23	Mean: 6.42 Median: 3.62
Profit	Mean: -4.04 Median: -7.39	Mean: 3.55 Median: 3

Table shows significant differences in reactions to redistribution of more productive individuals compared to less productive ones

Reaction	Less productive	More productive
Solved tasks	-5.08	-44.36
Time spent on work	-69.57	-554.52
Profits	1.73	-9.40

"Less productive" is defined as having produced below median output in phase one and vice versa.

	Expected gain/ Actual gain	Expected loss/ Actual loss	Expected gain/ Actual loss	Expected loss/ Actual gain	Share of biased voters
Yes	32	22	13	10	13/77
No	5	77	3	18	18/103

16.88% of Yes-voters and **17.48%** of No-voters have biased expectations concerning the disincentive effects of redistribution on the change in profits!

Do subjects overcontribute to redistribution because of a preference for equal outcomes?
If so, selection of inequality averse might explain our findings

Control tmt: Endopost (ex-post voting on phase 1 outcomes)

Vote	Gain	Lose
Yes	16	1
No	2	17

→ Inequality aversion does not seem to explain popularity of redistribution (but: endowment mode may matter)

remaining time (sec.) 1154

Task 19 to 21

8	2	
6	8	
2	8	

SWITCH   OK

Group payoff

$$\pi_g = (1-t)w\sum_j q_j(e_j,\gamma_j) - \sum_j c_j(e_j) + tw\sum_j q_j(e_j,\gamma_j)$$

Group optimum is the same as individual optimum w/o redistribution

$$q_{i2}'(e_i,\gamma_i) = \frac{k}{w}$$

→ Higher labor supply than under individual optimum

Tax to finance per-capita transfer (redistribution)

$$\pi_i = (1-t)\, w\, q_i(e_i, \gamma_i) - c_i(e_i) + \frac{t}{n} w \sum_j q_j(e_j, \gamma_j)$$
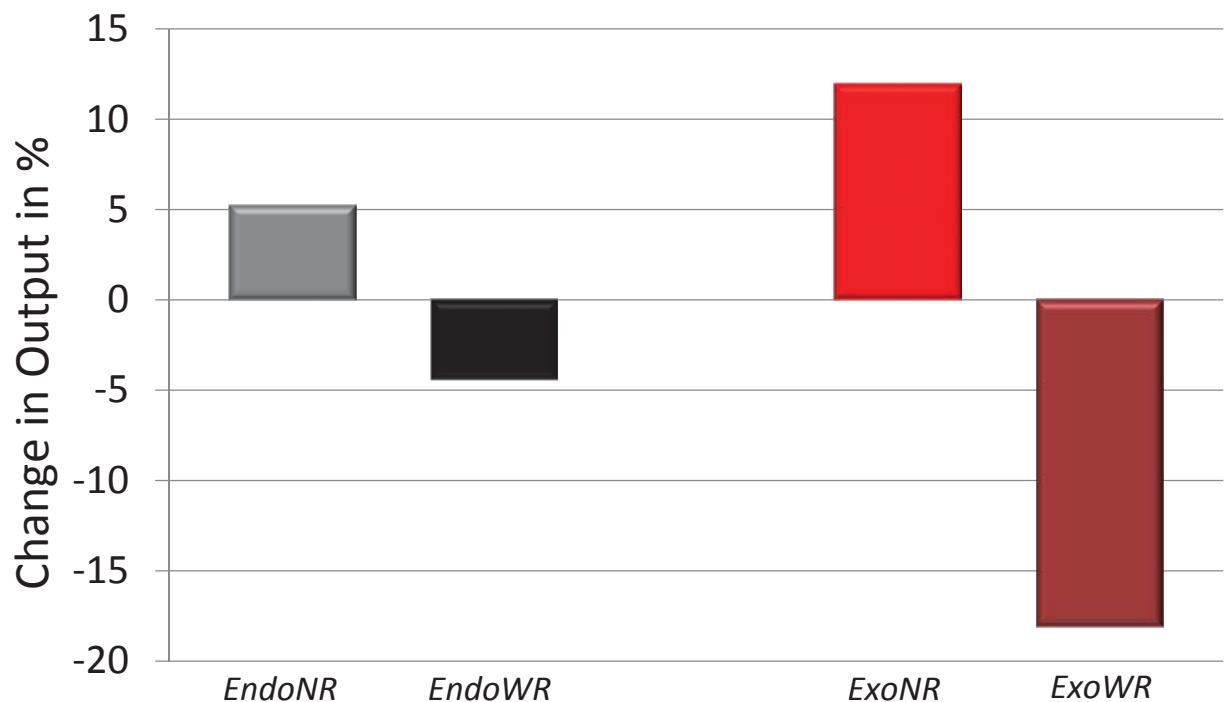
Optimum now requires:
$$q_{i1}'(e_i, \gamma_i) = \frac{k}{w(1-t+t/n)}$$

Hence,
$$q_{i1}'(e_i, \gamma_i) > q_{i0}'(e_i, \gamma_i)$$

→ New optimum with less time spent on work
(decreasing marginal product of labor)

Expectations: Do voters "shoot themselves into the foot"?

Upshot: xx voting is mostly consistent with expectations. They knew what they were doing

Proceed as follows:

- Gain/loss from R: We estimate the counterfactual earnings for each voter in phase 2 (how much would someone who was in R have made if he were in NoR?) assuming that they anticipate DE as they were in Endo (note some voters select into R, others happen to be there)
- Expected gain/loss: elicited before phase 2

		Phase 1	Phase 2	Phase 2 – Phase 1
	NoR (N = 33)	105.45	114.55	9.09
Exo (N = 60)	R (N = 27)	108.33	82.89	-25.44
	R – NoR	**D = 2.87**	**D = -31.65**	**DD = -34.53**
	NoR (N = 117	105.85	107.36	1.51
Endo (N = 180)	R (N = 63)	103.86	92.90	-10.95
	R – NoR	**D = -1.99**	**D = -14.45**	**DD = -12.47**
				DDD = -22.07
				(_p_ = 0.016)

DeFine

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