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Evaluation of Effectiveness of Budget Expenditures under the Framework of Result-Oriented Budgeting

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LIUDMYLA PIDCHOSA[2]

Abstract: The problems of the effective existence and functioning of the budget sector are caused by the following factors: low efficiency of budget fund spending, inappropriate use by budgetary sector institutions, lack of correlation between the performance of budget institutions and their financing, and unprofitable provision of social services.
As a consequence, the budget sector activities need optimizing and transforming in order to increase efficiency and effectiveness of providing services to the population, as well as responsibility for the quality and quantity of services. Outcome-based budgeting is a perfect example of solving these problems.

Keywords: Expenditures • Expenditure Programs • Macro-financial stability • Development budget • Budget funds • Socio-economic development

1 Statement of the Problem

Management of public expenditures in the field of maintenance and financing of institutions of the budgetary sector is an important part of government policy and is largely determined by the condition of the budget process, planning, approval and execution of the budget in terms of expenditure, as well as control over its implementation. In this regard, improvement of budgeting practices should be considered as an important tool for increasing the efficiency of public expenditures, improving the quality of provided public (municipal) services, and, as a consequence, development of the state.

2 Analysis of Basic Research and Publications

The urgency of the chosen topic and definition of the main issues considered in this article has been proved and considered by such well-known scholars and leading world-famous economists as: P. Brownell, J. Chulu, J. Daum, J. Diamond, D. Forsythe, V. Gary, H. Hatry, J. Hope, J. Melkers, K. Merchant, A. Neely, D. Parmenter, M. Robinson, A. Rose, M. Weidenbaum and others.

3 Selection of previously unsettled parts of the general problem

Existing studies show optimistic and pessimistic options for realizing the economic situation in Ukraine.

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4 The Main Results of the Research

Increasing the efficiency of public expenditure has become the key to successful development of Ukraine. In order to develop effective practical proposals and recommendations for ensuring the efficient distribution of public expenditures in Ukraine in today's conditions, we consider it expedient to clearly outline the paradigm of drawing up expenditure programs and to explore the world experience in the current conditions of development of the world economy.

When forming expenditure programs, the emphasis is placed on the socio-economic development of the state. At the same time, we believe that in the result-based budgeting, the format of the draft budget formed by the administration of the region or municipality to determine expenditure programs has significant difference from the budget compiled according to traditional methods of item budgeting (Table 1).

Table 1

Divergences between ROB and Clause-by-clause Principles of Budgeting in the Context of Expenditure Programs

Clause-by-clause Principle of Budget Formation	Result- oriented Budgeting
Strategic priorities and goals are absent or slightly related to the budget process	Clearly stated goals and priorities of public policy
The budget planning horizon is one year	Medium-Term Financial Planning (‘Expenditure Limits’)
Planning resources, not results	Medium-term ‘limits’ for allocating budget funds
Lack of control over the budget, or control over ‘the targeted use of budget funds’	Budgetary cost planning in the context of goals and priorities along programs and cost managers
Detailed estimate of budget expenditures	Competition between programs
The budget is formed ‘based on’ the previous year and the existing network of budgetary organizations	Departmental and program classification
The quality and quantity of provided public services is meant, but not planned	Decentralization of management and financial responsibility of managers and eventual recipients of budget funds
Basis: functional and economic cost classification	Internal control and accountability
Non-functional accounting and reporting systems	Independence in operational cost management, cost savings, and cost structure changes
External financial control as the basis of financial control	Monitoring cost-effectiveness (achievement = target use of funds)
Financial control and audit of procedures for using budget funds (and not the results of their use)	Accounting and reporting on programs and results
Result: low quality of budgets, low socio-economic efficiency of using budget funds	Performance management on using budget funds
	Encouragement of ministries and their staff by results of activities

Source: The table was compiled by the authors based on (Daum, 2002; Hope, 2003; Neely, 2003; Rose, 2003).

The result-oriented budget reflects the relationship between the amount of assignment allocated to implement the programs and the expected results to be obtained in the execution of these programs (Rose, 2003).

That is, the logic of building a result-oriented budget is the following: approving the necessary resources sufficient to take the necessary steps to obtain a product producing results (Fig. 1).

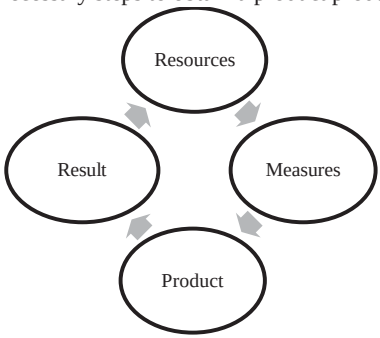

Figure 1. The Logic of Constructing a Result- oriented Budget

Source: The scheme is compiled by the authors based on (Rose, 2003).

At the same time, a properly compiled budget should reflect the specific goals achieved at a certain level of funding; and provide an opportunity to monitor the relationship between the resources spent on the program, the activities carried out within it, products and services produced at run-time, and end results (Table 2).

Table 2

Healthcare and Social Security Program

HEALTHCARE AND SOCIAL SECURITY PROGRAM					
(Children, Youth and Family Services)					
1.	**Scope:**	Health and social services	**Program activities (plan for a specified period):**	**End results**	Indicator #4: Percentage of families receiving support for childcare
2.	**Sphere:**	Children, youth and family services		**Quality of services**	Percentage of families assessing the quality of services provided to them as "good" and above
3.	**Program:**	Child help		**Service effectiveness**	Indicator #1: The average amount of child support ($ per child per month)
4.	**Program component:**	Providing child care and assistance to working parents		**Immediate results**	Indicator #2: The number of families (of the surveyed) with the confirmed right to receive child support
5.	**The mission of the program component:**	Increase the security of low-income families by subsidizing the cost of childcare and providing temporary financial support to families in need of assistance		**Resources**	Indicator #1: child support payment costs
6.	**Contributes to the following goals of the local community:**	Safety of children and adults; achievement of the maximum level of provision of individuals and families			

Source: The table was compiled by the authors based on (Congress U. S., 2017; Department of Health and Human Services (2017)).

At the same time, in our opinion, some difficulties may occur during formation of the tasks of the program (Table 3).

Table 3

Examples of Well-formed Expenditure Program Tasks

Examples of well-formed program tasks	Examples of incorrect approach to defining program tasks
'Conservation of biodiversity in ecosystems' (national program for environmental protection)	'Provision of emergency medical care'–it only refers to end products
'Ensuring territorial integrity and national independence' (program of armed forces)	'Management of development, implementation, evaluation and maintenance of national policies, programs and systems of general education, and quality provision'–it is only about the activities
'Growth of foreign investment, leading to exchange of technologies and strengthening of the economy' (investment promotion program)	
'Reducing crime rate and ensuring greater security for individuals and property' (crime prevention program)	

Source: The table was compiled by the authors based on (Congress U. S., 2017).

Also, it is worth noting that after formulating the objectives of the program in result-oriented budgeting, budget program classification should be carried out (Table 4).

Table 4

Budget Expenditure Program Classification

Item of classification	Budget target program
The level of power and governance	•Interstate •Federal •Interregional •Regional •Departmental •Local
Term of implementation	•Short-term (up to 1 year) •Mid-term (from 1 to 3 years) •Long-term (over 3 years)
Source of funding	•Funding from one budget •Funding from budgets of different levels •Funding from the budget and investors
Functional orientation	•Socio-economic •Environmental •Scientific and technical •Investment •Innovative-oriented •Defensive Security •Ensuring budget security
By branch specialization (location)	•Intersectoral •Sectoral •Sub-branch

Source: The table was compiled by the authors based on (Congress U. S., 2017).

Thus, after the procedure of budget expenditure program classification, the determined indicators of budget expenditure effectiveness are included in the draft budget (Rose, 2003). Accordingly, the main indicators of effectiveness and efficiency used in result-oriented budgeting are (Table 5):

Table 5

Performance and Efficiency Indicators

Term	Definition	Example
Inputs	Resources necessary to produce a product (rendering services), program execution.	Financial and material resources, working hours.
Product, issue, immediate result, direct output	A product that was produced during the reporting period (or a service provided during the reporting period, which is a direct result of the costs incurred).	Number of persons receiving the service; number of implemented educational programs.
Results, end results, social outcomes	Results that are directly related to goals, tasks, overall mission of different programs, profits or benefits of providing services for its recipient.	If the number of patients discharged from psychological clinics is a product (output), then the number of discharged patients able to normally exist independently outside the clinic is the result (outcome). Results may be financial indicators expressed in terms of money (for example, the value of accidentally paid social assistance).
Intermediate Outcomes	A certain result which should lead to a definite net result. One of the reasons for distribution to intermediate and net results is the varying degree of influence of government programs on the results of these two categories: in almost all cases, the impact on intermediate results will be more noticeable. When implementing one or another program (in the field of education, medicine), the state provides financial and other assistance to citizens through ministries, departments. Intermediate results are the results that are the purpose of the national program and are implemented within these organizations. The impact of national programs on achieving these results will be more powerful than the achievement of net results, which may be more sensitive to external factors (the desire	For example, to fight against unemployment, the government can finance a program of professional development where participation is free and voluntary. In order to assess the effectiveness of implementing this program, the authorities can organize testing and examination for its participants. The number of people passing the certification will be an intermediate result of the program. A separate category of intermediate results includes quality indicators of services provided: timeliness, availability (convenience of location, schedule), staff politeness, accuracy, availability and completeness of information on services distributed among potential customers, customer satisfaction with certain

	of citizens to use the services within the program and so on).	characteristics of services, and so on.
End Outcomes	The result which is the ultimate goal, purpose, mission of the program or services.	Reducing the number of fires, crimes, cases of certain diseases. In some cases, final outcomes can also include the degree of customer satisfaction with the services provided (for example, in relation to organizing cultural leisure activities of the population, work of libraries). Final results can have both short-term and long-term character. The classical example is the field of education. Realization of scientific programs can lead not only to increasing the level of education or acquisition of professional skills by students (short-term net result), but also have more long-term consequences (employment, salary increase, etc.).
Targets	Certain results planned to be achieved during the project implementation. They can be determined quantitative, qualitative and time terms.	Delivering 90% of the reports in a specified time (output target); achievement of 2% of budget surplus (outcome target).
Efficiency, economic efficiency	The ratio of the amount of resources spent to the value obtained through these product resources (output) or result (outcome).	Cost of 1 desk at school.
Productivity	The ratio of the value of the product (output) or the result (outcome) to the amount of resources spent.	The number of persons who have undergone training under the program of professional development or retraining and their employment after the completion, per unit of expenses (UAH or person-hours).
Social efficiency, public efficiency, viability, end effectiveness	Achievement of a definite social meaningful result per cost unit.	An increase in the proportion of completely healthy school-age children from 7 to 30%, an increase in employment by 10%.

Source: The table was compiled by the authors based on (Chulu, 2015; Rose, 2003).

According to the above information, one of the most important and at the same time the most complicated elements is selecting quantitative and qualitative indicators of social and economic

efficiency of program implementation (Diamond, 2003). For example, Health Treatment Program Analysis (by indicators) specified in the Table 6. It should be emphasized that the false choice of indicators and their subsequent use may lead to ineffective management decisions.

Table 6

Health Treatment Program Analysis

Health Treatment Program	
Indicators of final results	The average survival rate after certain conditions, which posing a significant threat to life.
Indicators of the volume of final products	Number of patients undergoing treatment.
Quality Index	- Level of patient satisfaction; - Level of repeated hospitalizations after treatment; - Weighted average waiting time for certain key surgical procedures;
Performance Index	Weighted average cost of treatment for definite diagnose 'basket'.

Source: The table was compiled by the authors based on (Congress U. S., 2017; Department of Health and Human Services, 2017).

Consequently, when choosing the indicators of the program implementation, the emphasis should be on the following criteria:

– The indicator should be related to the purpose and objectives of the program / service delivery;
– Calculation of the indicator should be based on reliable regularly received information;
– The indicator should not duplicate other indicators;
– The indicator should be convenient for calculations, analysis and use in reports;
– The indicator should be clear to users.

Reporting is the next step in compiling the expenditure programs after determining the indicators of program implementation (Rose, 2003). The way of providing this information depends on the general purpose, peculiarities of the organizational structure and other factors (Diamond, 2003). We consider it appropriate to provide some general principles for displaying information on expected results in budget documents in result-oriented budgeting (Table 7).

It should be noted that the plan for building a report has a three-tier structure and includes (Fig. 2):

– A general goal provided in the form of indicators of final results and determines the ways of its implementation;
– Strategic goals that help to determine in detail the extent to which the general goal is achieved;
– A year plan provides defined results of work that can be determined in quantitative, qualitative and temporal terms. In the context of this issue, it is noteworthy that the annual budget contains information on the use of resources by the institution in general; in relation to the budget items and to certain types of activities that are envisaged by the programs and financed within the budget items (Robinson, 2007).

In turn, it should be emphasized that information on cost allocation is grouped at three levels, namely: at the level of institutions; by the centers of responsibility - the organizational units responsible for carrying out missions that carry out one of the leading activities or produce one or several types of related goods or services; at separate cost centers belonging to a certain type of products (services) within the limits of separate centers of responsibility (U. S. General Accounting Office, 2002; Rose, 2003).

Table 7

Information in Program Implementation Reports

Usage of information	Goal
Performance measurement	Evaluating productivity and efficiency of program implementation.
Performance targets	Results to be achieved during project implementation are the basis for comparing the planned and actual results of the program.
Performance reports	Comparison of the planned and actual results of the program contain official evaluation of the results of program implementation.
Performance audits	Audits contain independent assessment of the reliability of the information contained in the reports on the results of the implementation of the program.
Performance benchmarks	Benchmarks determine the criteria that specify the best achievements in one area or another.
Performance contracts	Official agreements between the government and suppliers for the provision of a certain amount of product / service at a certain price.
Performance budgeting	Separating resources to achieve certain goals.

Source: The table was compiled by the authors based on (Robinson, 2007; U. S. General Accounting Office, 2002).

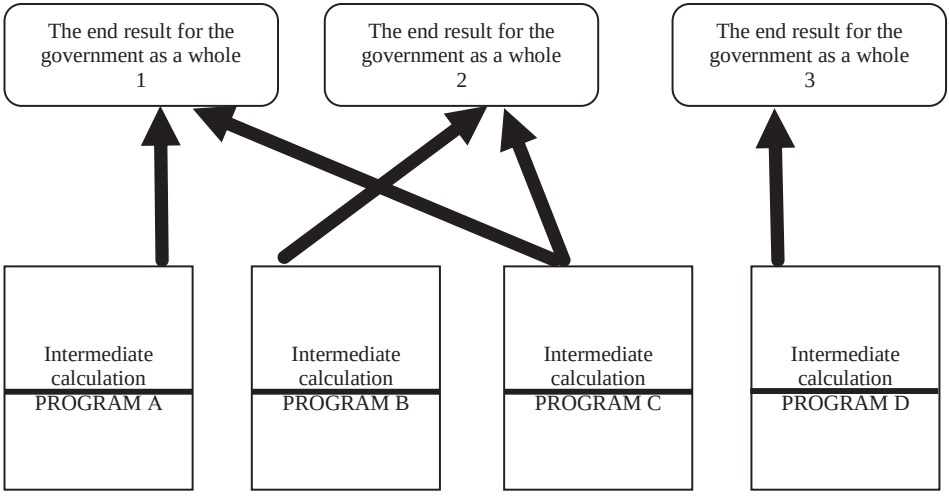

Figure 2. Formation of Accounting for Expenditure Programs

Source: The scheme is compiled by the authors based on (U. S. General Accounting Office, 2002).

We consider it appropriate to provide an example of distribution of assignments required for the planned activities in programs and projects with the group of work resolutions per year (Table 8).

Table 8

Socio-economic Development Program[3]

Organization	Budget article	Type of program activity		General goal	Strategic goals	Work settings
			Amount of appropriations, $ mln.			
Office for Family and Children	Family and children services	Legislative initiative on adoption issues	43	Stimulating child healthy development, well-being, and safety (5-7)	Increase in the security, stability and welfare of children Sub-goal: Child Welfare ($ 7,726.4)	
		Option to adopt	27			
		Child abuse (government grants)	21			
		Child abuse (discretionary)	18			Work settings example: Safety-reduction of percentage of children with reported and documented cases of regular abuse during 12 months Stability-an increase in percentage of children disusing additional social support after less than 2 years after adoption
		Assistance to adopted children	12			
		Trainings on child welfare issues	7			
		Social Services for Children	292			
		(20+ other programs aimed at achieving other general goals)				
	Assigning the staff to assist foster children and resolving adoption problems	Assistance to foster children	5.055			
		Assistance in adoption	1.426			
		Independent living	200			
	Increasing the number of happy stable families	Grants for the personnel	489			
		Technical assistance, trainings	6			
		Assessment of public courts' activities	10			
		Regular monitoring of the lives of children whose parents are in detention facilities	67			

Source: The table was compiled by the authors based on (U. S. General Accounting Office, 2002; US Department of Health and Human Services, 2017).

Thus, the group of work instructions corresponds to 'sub-targets' (Hatry, 2006). Target benchmarks are set for output indicators, endpoints, and performance indicators. From the above it can be concluded that the target indicators are established on the basis of the priorities of the national policy; social and public priorities; strategic plan; probable changes in external factors (legislation); indicators of previous years; the amount of funds and personnel planned in the program; indicators of similar programs; and other indicators (Fig. 3).

[3] Interconnection of the amount of the necessary allocations for implementation of planned activities by programs and groups of institutions per year as exemplified by the socio-economic development program (Administration for Children and Families (ACF) USA).

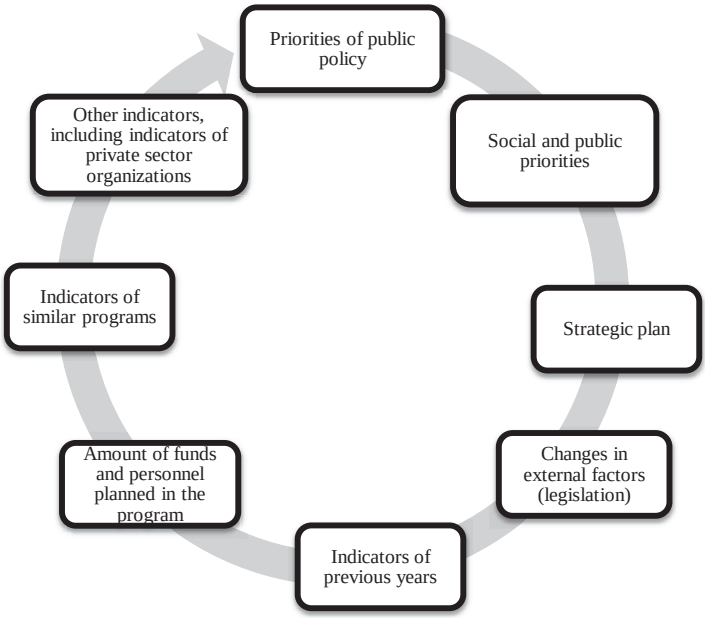

Figure 3. Target Indicators for Output Indicators, End Results and Performance Indicators
Source: The table was created by the authors based on (Hatry, 2006).

Target settings can be defined for Output target (generating 90% of reports that do not need to be adjusted in due time) and for outcome target indicators (for example, setting a budget surplus of 2%).

From the foregoing it can be concluded that cost analysis is a very important tool for determining expenditure needs. Consequently, the main principles of cost estimation are (Hatry, 2006; Weidenbaum, 1966).

1. For old expenses`:

1.1. The expenditure from the last year budget is taken over (exigency- as in the previous year);

1.2. Indexing to change the tariff grid and prices;

1.3. Change in demand. For example, a change in the number of persons receiving benefits and other assistance in accordance with applicable law;

1.4. Certain cost savings associated with an increase in the effectiveness of the implementation of 'past' programs, referring to *initiatives of the executing organizations* themselves;

1.5. Some cost savings associated with improved implementation of 'past' programs, meaning *government initiatives*;

1.6. Changes in the amount of current expenses related to the implementation of investment projects (computerization of document circulation).

2. Expenses due to new decisions or revisions of previously adopted programs:

2.1. Expected changes in the volume of expenditures due to reduction or increase in the volume of the program;

2.2. Increase of current expenses associated with completion of investment projects within the program expansion.

Performance indicators of the program's implementation over the previous years, collected during the monitoring process play the significant role in the cost analysis process (Parmenter, 2015). They provide the basic information necessary for the formation and justification of the budget and

expenditure programs; assess program effectiveness, identify which programs are being implemented inefficiently or effectively ad hoc to further adjust public expenditure policy with regard of public policy priorities.

However, it should be noted that there are certain limitations in using the results of the analysis (monitoring), such as: the results obtained in the past cannot be automatically extrapolated for the coming year, as it is always possible that external factors will affect the institution's activities in future periods. Moreover, after accumulation of monitoring data, one can establish the relationship between all elements of the result-oriented model of budgeting, namely: resource-product-intermediate result-end result, although in transition from connection analysis ‘Resource-product’ to link ‘resource-intermediate result’ and ‘resource / product-end result’ the forecast becomes less precise and more uncertain (Parmenter, 2015; Weidenbaum, 1966).

Resource – Product Forecast. The results obtained while monitoring past performance are the basis for assessing the relationship between resources and the expected volume of service delivery / product production. It should be borne in mind that the forecast estimates are characterized by uncertainty, especially if the planned activities differ in complexity from the activity of previous periods, and also if the future work depends on external factors (for example, a large number of programs: employment, social and medical services depend on certain social and economic factors) (Parmenter, 2015; Weidenbaum, 1966).

Resource – Intermediate Results Forecast. For certain performance indicators, the link between resource data and intermediate results can be established quite accurately. For example, it is possible to predict fairly precisely such intermediate result as the turnaround time, if the amount of funding for the program and its staff are known (Parmenter, 2015; Weidenbaum, 1966). However, the risk of external factors remains, for example, the increase in the number of applications or the increase in the proportion of complex applications.

Resources - End Results Forecast. It is practically impossible to establish a direct relationship between resources and end results since the achievement of the final results depends on many external factors. However, the identification of this relationship and its numerical accounting is important for budget planning.

Product – Results Forecast. When planning a budget and spending programs, it is important to analyze the amount of product offered for the fiscal year and evaluate the possible results and the time spent (Parmenter, 2015; Weidenbaum, 1966).

Intermediate Results-End Results Forecast. For example, in the context of socio-economic development programs, the relationship between the number of vaccinated children and morbidity rate among vaccinated children.

The next step is filtration of the program depending on the macro priorities and performance criteria (Fig. 5).

After the expenditure program has been filtered out, the budget expenditures are approved, which stipulates drawing up and approval of a budget note or a statement of budget allocations received by the ministries and departments. Implementation of the specified tasks is carried out by allocation of appropriations in an aggregated form (Weidenbaum, 1966). As a rule, public institutions receive special allocations for internal management and separately for doing their main activities, and they independently decide how to organize their activities and necessary resources acting within the established budget limits. Budget funds are controlled within aggregated limits of allocations according to programs, types of activities and functions. It should be noted that unused funds are carried over to the next year, thus avoiding the problem of inefficient use of budget funds that were not used at the end of the year (Weidenbaum, 1966).

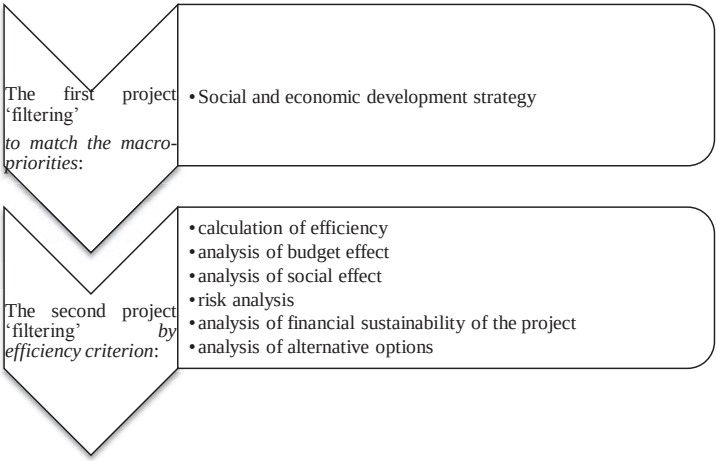

Figure 5. Filtering the Program Depending on the Macro Priorities and Performance Criteria
Source: The scheme was developed by the authors based on (Weidenbaum, 1966).

Analysis of the implementation of expenditure programs and results of budget expenditures within the framework of programs is carried out with the help of economic efficiency of programs (the ratio of the volume of services provided of a certain quality and costs of their provision) and social effectiveness of programs (program effectiveness in terms of accomplishing the goals, achieving social benefits from provision budget services). This assessment carried out at the completion of expenditure programs allows comparing the actual and expected results of implementation including the impact of the program on its target groups and analyzing the success factors of the program and the problems arising during its implementation. As a result, the legislative and executive bodies receive the necessary information to determine and adjust the priorities of the government policy for the development of new programs (Weidenbaum, 1966).

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arising during its implementation. As a result, the legislative and executive bodies receive the necessary information to determine and adjust the priorities of the government policy for the development of new programs (Weidenbaum, 1966).

5 Conclusions

The main conclusion of the study of the role of public expenditures in Ukraine is that they can contribute to solving a wide range of economic, social and security issues; namely in the context of increasing their efficiency, provided that an effective mechanism for their formation and use is adopted and rational government policies are implemented. However, this demands additional study of the question of implementing result-oriented budgeting at the governmental level and related institutional changes need to be addressed.

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The Effect of Financial Variables in Athens Stock Market

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ZOE ZTOUPA [10]

Abstract: The paper investigates the main determinants of Athens Stock Exchange General Index, employing a GARCH model and integrating monthly data for the period from January 2000 to June 2017. For the purpose of the study, Athens Stock Exchange General Index (ASEGI) is used as a proxy of Greek stock index. Regarding the determinants, the Dow Jones Sustainability Index World (DJSIW) is employed, for the first time, in order to incorporate firms that follow socially responsible initiatives, the stock CAC 40 representing the 40 largest equities listed in France, the exchange rate of euro to US dollar, 10 year bond value and US dollar value to major currencies. The results have revealed that all variables are affected positively by the ASEGI, apart from US dollar value to major currencies which is affected negatively the ASEGI. The results provide vital implications both for Greek and foreign investors when making their stock investment decisions.

Keywords: Corporate Social Responsibility • Dow Jones Sustainability Index World • GARCH

1 Introduction

Stock markets and how they are affected by economic and financial factors have been frequently researched in the extant literature. The strong influence of the stock market on financial growth and progress has typically determined its use as a common dependent variable in economic research (Brambila, 2009).

According to El Wassal (2005), there is a positive correlation between stock markets and the economy, especially in developed countries, as stock markets are considered the best indicator to anticipate the future progress of finance (Abbas et al., 2016). The integration of stock markets demonstrated a strong impact on global growth (Kirankabes et al., 2012), particularly in periods of financial global instability, when volatility spillovers are immediate (Coudert et al., 2015; Li & Giles, 2015; Hemche et al., 2016). However, it was also demonstrated that there is no long-term relationship between the stock market and finance (Kajurova, 2017). The stock market has also been the major focus of finance research to enable investors to have access to appropriate information, which they find rather difficult to manage effectively (Fatima, 2015).

Based on the above considerations, the present research was designed by defining the Athens Stock Market as the dependent variable, whereas the World Sustainability Index, the Greek bond 10

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Year, the French Stock Exchange and the euro-dollar and dollar exchange rates against other main currencies were defined as independent ones. The World Sustainability Index contains the world's leading companies, as demonstrated in annual assessments based on economic, social and environmental criteria. Socially responsible companies appear to increase profit making (Murtala, 2017), and this is also true especially for companies which remain among the best long-term listed ones (Hawn et al., 2017).An additional research variable was CAC40, which represents 40 most important companies traded on the French Stock Exchange. A great number of surveys demonstrated that the major stock markets had a profound impact on less powerful ones (Agmon, 1972; Panton et al., 1976; Koch and Koch, 1991; Knif and Pynnonen, 1999; Tay and Zhu, 2000; Dekker et al. 2001).

As regards the 10-year bond, Jammazi et al. (2017) maintain that there is a significant correlation between bond interest and stock returns, whereas for the period 1993-2012 Moya-Martinez et al., (2015) stated that when interest rates are reduced, Spanish companies yield profits. Interest rates affect a company's finance; an increase in interest rates signifies a decrease in profits (Hude, 2007; Bernanke & Kuttner, 2005; Ferrer et al., 2016). The negative relationship between interest rates and stock prices has also been variously surveyed (Huang et al., 2016; Prazak, 2017; Waqar, 2017). Finally, as regards the exchange rates, according to Mukherjee and Naka (1995), there is a positive relationship between the exchange rate and stock pricing, whereas Sheng-Ping Yung (2017) argues that the exchange rate does not have either a long- or a short-term impact on stock prices.

2 Data Description and Variables

The present research includes data of the monthly prices of the Athens Stock Exchange (ASE), CAC 40, the Dow Jones Sustainability Index (DJSIWorld), EUR/ USD Exchange rate, Greece Government Bond 10 Year and the dollar exchange rate against other currencies of US Strategic Partners (TWIX BMTH) between 2000 and 2017 (210 elements). The return on investment figures are defined as the natural logarithms of prices

$$R_t=\ln(P_t/P_{t-1})\text{ , where } P_t\text{: price at date t}$$

ASE is the dependent variable, whereas CAC40, EUR/USD, 10 YEARBONDS, TWEXBMTH are the independent variables.

3 Methodology

To provide a detailed description of the variables, the dispersion, skewness and kurtosis statistical measures must be estimated, as demonstrated in Table 1. In detail, the TWEXBMTH and EUR/USD variables exhibit a positive skewness, whereas the CAC40, 10 year bond and DJSI World variables a negative. All variables exhibit a positive kurtosis, which implies that all variables are leptokurtic. To test normal distribution, the Jarque-Bera test was employed, which demonstrated that in all variables residuals are not normally distributed. Finally, Augmented Dickey-Fuller (ADF) demonstrated that all time series are stationary.

Table 1. *Statistical measures*

Variables	CAC 40	10year bonds	TWEXBMTH	EURUSD	DJSI_WORLD
Mean	−0.00072	−0.004896774	0.00027371	0.00060536	0.001762
Median	0.008358	−0.000523308	−0.0003263	0.00121973	0.009433
Maximum	0.125881	0.265624645	0.06422337	0.09609067	0.119686
Minimum	−0.19225	−0.302891168	−0.0331028	−0.1019601	−0.132054
Std. Dev.	0.051623	0.086426154	0.01237487	0.02981232	0.042842
Skewness	−0.62284	−0.12905533	0.62188993	−0.2152386	−0.702066
Kurtosis	0.872010	1.817621323	2.67804257	1.04919445	3.800903
Jarque-Bera	53.20092	12.815653	14.443143	34.920874	22.86403
ADF	−13.2143	−13.87652	−9.394109	−14.25848	−12.3
Observations	210	210	210	210	210

Stochastic Behaviour of the Greek Market

Before the variance analysis, it is essential that the stochastic behaviour of the Greek market be discussed, and, subsequently, the characteristics of the ASE index, that is, the dependent variable, be examined, in order to enable consistency with the employed model hypotheses.

Several researchers have studied the stochastic behaviour of the Greek market and a number of them have investigated market efficiency. In detail, Koutmos, Negakis and Theodosiou (1993) andbLaopodis (1996) used weekly data, and Chortareas, McDermott and Risatos (2000) used weekly and daily ASE data and found a statistically significant dependency of the first$\{R_t\}$ and second $\{R^2_t\}$ moments in index returns (Drimpetas, E& Sariannidis, N.,2005). In addition, Alexakis and Xanthakis (1995), as well as Mills, Siriopoulos, Markellos and Harizanis (2000), highlight calendar regularities in the Greek market. On the other hand, Dockery, Vergari D., and Vergari F. (2001) using monthly data, could not reject the random walk hypothesis. Finally, Laopodis (2003) demonstrated that the Greek equity market was weak form efficient.

Table 2 shows the statistical descriptive measures of the dependent ASE variable. In particular, the distribution of ASE index yields is leptokurtic, as the kurtosisis is 3.728 and negative skewness is 0.5732. The mean is near zero, 0.009071 units, which means that null hypothesis cannot be rejected at level 10%. In addition, in terms of the Jarque–Bera (JB) test, distribution is not normal.

Table 2. Descriptive Statistics–ASE

Mean	−0.00907
Median	−0.00051
Maximum	0.198539
Minimum	−0.32673
Std.Dev.	0.089425
Skewness	−0.57327
Kurtosis	3.728382
Jarque-Bera	16.14449
Probability	0.000312

According to Table 3, to test that a unit root is present, the Augmented Dickey-Fuller test demonstrated that the ASE index is stationary.

Table3. Augmented Dickey-Fuller Test

Augmented Dickey-Fuller test statistic		
Test critical values	1% level	−2.576073
	5% level	−1.94235
	10%level	−1.61569

GARCH (1,1) Model: Results

Considering the above results, the model to be used in the present empirical analysis is GARCH (1,1) GED.

The GARCH (Generalized ARCH) model was developed by Engle and Bollerslev (1986).This model allows the conditional variance of the error term σ2t to depend on the lagged variance terms (σ2t-1, σ2t-2 etc). The GARCH model for the conditional variance can be expressed as an ARMA model. The simplest form of the model is shown below:

$$\sigma_t^2 = \alpha_0 + \alpha_1 1^1_{111} + \beta 1^1_{111} \text{ GARCH (1,1)}$$

GARCH is commonly used in time series of stock returns as it adequately addresses the properties of stock returns time series. In particular, stock return time series tends to be leptokurtic with heavy tailed durations compared with normal distribution (Fama, 1963, 1965). In addition, it features volatility clustering (low and high activity regimes), related both to the arrival and dissemination of the information. The trend of volatility clustering, i.e. large changes in stock returns

prices, will follow large changes, fully described in Kyle's study (1985). Finally, stock returns are often related to financial leverage. Researchers, such as Black (1976) and Christie (1989), attributed the asymmetries of many stock returns to the specific consideration.

The present research was based on the GARCH (1,1) generalized error distribution GED model, which is based on the generalized error distribution (GED), a special case of which is normal distribution. GED, which includes parameters to define tail behaviour, and thus, determines leptokurtosis, involves a wide group of distributions and can describe a number of financial time series (equity, in particular).

$$L_t = -\frac{1}{2}\ln\left(\frac{\Gamma(1/3)^2}{\Gamma(\frac{3}{v})(\frac{v}{2})^2}\right) - \frac{1}{2}\ln\sigma_t^2 - \left(\frac{\Gamma\left(\frac{3}{v}\right)\left(y_t - x_t'B\right)^2}{\sigma_t^2\Gamma\left(\frac{1}{v}\right)}\right)^{v/2}$$

where: x'tB is the coefficient matrix of medium equation, Γ(´) is the Gamma function, and ν is the parameter that adjusts the width of the queues.

If ν = 2, there is normal distribution.

For ν< 2, the distribution queues are greater than these in normal distribution.

On the other hand,

(if ν> 2), the distribution queues are smaller than the number in normal distribution.

The general form of the linear regression model is as follows:

$$Y_0 = b_0 + b_1X_{1i} + b_2X_{2i} + \cdots + b_kX_{ki} + u_t,$$

where $i = 1,2,\ldots,\kappa$ observatıon καu_t white noise disturbance

The specific model includes 5 independent variables, thus, the above relationship is described as:

$$ASE_t = b_0 + b_1CAC_t + b_2DJSI\_WORLD_t + b_3\ EURUSD_t + b_4TWEXBMTH_t + b_5YEAR_{10_{BONDS}} + ut(1)$$

where: b0 is the constant term which expresses the value of the dependent variable when the values of the independent variables are equal to 0, t represents the number of observations over time, and b1, b2, b3, b4 and b5 are the coefficients that quantify the effects of respective variables.

According to Table 4, which shows the results of regression, function (1) is:

$$ASE_t = -0.004861 + 0.541688\ CAC_t + 0.573709\ DJSI\_WORLD_t + 0.510601\ EURUSD_t - 0.871041\ TWEXBMTH_t + 0.174299\ YEAR\_10\_BONDS$$

The coefficients are statistically significant at 5% level, as the z-statistic exceeds the absolute value of 2, and the corresponding p-value is less than 0.05. The coefficient b_4 is negative (–0.871041) and reflects the negative correlation of the independent variable TWEXBMTH with the dependent ASE variable. On the other hand, the other estimates (b_1, b_2, b_3, b_5) are positive, indicating the positive correlation of the specific independent variables (CAC, DJSI_WORLD, EURUSD, YEAR_10_BONDS) with the dependent ASE. The Adjusted R-squared is 0.479980, which implies that the dependent variable is interpreted by 48% of the independent variables and the remaining 52% is due to random factors.

Table 4. GARCH Regression Results (1,1) (GED)

Variable	Coefficient	Std.Error	z-statistic	Prob
C	−0.004861	0.0398	−1.221322	0.222
CAC	0.541688	0.196466	2.757164	0.0058
DJSI WORLD	0.573709	0.242789	2.362998	0.0181
EURUSD	0.510601	0.180221	2.833203	0.0046
TWEXBMTH	−0.871041	0.367892	−2.367652	0.0179
YEAR 10 BONDS	0.174299	0.043508	4.006086	0.0001

$$\sigma_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2 + c_1\sigma_{t-1}^2$$

The GARCH (1,1) models capture the fluctuations in variance over time, in three components (Katrakilidis, Konteos and Sariannidis 2017, p. 833):

The weighted long-run average variance, (depends on α0), the coefficient $\alpha_1 u_{t-1}^2$ which provides information on the previous period's volatility and the previous period's fluctuation estimator $c_1\sigma_{t-1}^2$.

According to Table 5, the equation 2 can be expressed as follows:

$$9.83+0.077971u$$

Table 5. GARCH Variation Results (1,1)

C	9.83E-05	0.000121	0.813952	0.4157
RESID(-1)^2	0.077971	0.060048	1.298473	0.1941
GARCH(-1)	0.893538	0.084681	10.55183	0

In terms of the Jarque–Bera test, the research demonstrated that the distribution of the u_t residuals is not normal, thus, to ensure that the estimates are consistent, the standard errors and collisions should be estimated using the quasi maximum likelihood (QML) by Bollerslev and Wooldridge (1992).

If the mean and variance equations are correctly defined, it is anticipated that LB statistics for typical residuals are not statistically significant. In addition, the ARCH LM test result is negative when testing ARCH in residuals. As shown in Table 6, LB statistics are not statistically significant for typical residuals, and the result of the ARCH LM test demonstrates that there is no residual correlation to squared residuals (Table 7).

Table 6. LB Test Residuals GARCH(1,1)Model

Lags	Autocorrelation	Partial Correlation	Q-stat.	Prob
1	0.048	0.048	0.4862	0.486
2	-0.087	−0.089	2.1015	0.35
3	0.036	0.046	2.3846	0.497
4	-0.037	−0.049	2.6756	0.613
5	-0.037	−0.025	2.9714	0.704
6	-0.054	−0.061	3.6035	0.73
7	-0.047	−0.044	4.0842	0.77
8	-0.022	−0.027	4.1877	0.84
9	-0.021	−0.026	4.2902	0.891
10	0.168	0.167	10.536	0.395
11	-0.021	−0.051	10.633	0.474
12	0.021	0.054	10.731	0.552
13	0.134	0.106	14.811	0.319

Table7. Process Results –ARCH

Heteroskedasticity Test ARCH			
F-statistic	0.474159	Prob F(1,207)	0.4919
Obs*R-squared	0.477646	Prob Chi-Square (1)	0.4895

4 Conclusions

The present research investigates the volatility of stock returns in terms of the GARCH(1,1) model. The results of the empirical analysis demonstrated that the Athens Stock Exchange (ASE) was affected by the researched variables, which are indicators of global processes. This is also corroborated by the high stock volatility in international financial contexts (Khaled Guesmi, 2013).

The results revealed that the Athens Stock Exchange (ASE) have a positive effect on the Dow Jones Sustainability Index (DJSIWorld), CAC 40, Greece Government Bond 10 Year and EUR/ USD

Exchange rate, whereas they exhibited a negative effect on dollar exchange rate against other currencies of US Strategic Partners (TWIX BMTH). The World Sustainability Index (DJSI World) was employed to reflect the impact of the global market in the Greek economy, as it involves the world's leading companies in terms of economic, social and environmental criteria. It is focused on industry and the positive relationship with the Athens Stock Exchange is consistent with arguments by Nasseh & Strauss (2000), who observed that the growth of industrial production led to an increase in future cash flows. Greece Govt Bond 10 Year exhibits a low correlation with the Greek stock market. In periods of financial uncertainty, stock pricing appears to be less affected by the Govt Bond 10 Year. Moya-Martínezetal. (2015) investigated the relationship between the Spanish Bond 10 Year and the Stock Exchange in Spain and demonstrated that the two variables exhibited a low dependency ratio in terms of the time-varying variables. Nasseh and Strauss(2000) explored the relationship between stock prices and domestic and international economic activity in six European economies, namely, France, Germany, Italy, Holland, Sweden and the UK during 1962-1995. It was demonstrated that stock pricing is negatively affected by long-term interest rates, whereas it is positively affected by long-term interests. The effect of interest rates on stock pricing has also declined as a result of the stock exchange derivatives (Czaja et al., 2009; Korkeamäki, 2011).

In terms of the EUR/ USD Exchange rate variable, which reflects the dynamics of the European currency to directly affect the transactions of the companies traded on the Greek Stock Exchange, the research revealed that the euro-dollar exchange rate has a positive effect on the Athens Stock Exchange. The positive relationship between the exchange rate and stock prices was also demonstrated by Mukherjee & Naka (1995). The research also focused on the French Stock Exchange, which is one of the most popular European indices due to the multinational scope of most French companies and the fact that France is one of the leading countries in the European Union. In relation to the Greek Stock Exchange, a preliminary analysis revealed a strong correlation (over 85%) between the French Stock Exchange and the Athens Stock Exchange. France is a strategic investor for Greece, in sectors such as energy, in particular, electricity generation and renewable energy sources.

As regards the dollar exchange rate against other major currencies, it was demonstrated that as the dollar is a powerful currency, widely used in all international transactions since World War II (Carbaugh and Hedrick, 2009), it also reflects investors' fears. Political uncertainty and periods of financial crisis have resulted in the investors' overreaction, in fear of large losses (Hamilton & Lin, 1998); thus, the investors' trust in the dollar, results in revaluation. The TWEXBMTH index reflects international trade and is the only variable which demonstrated a negative relationship with ASE. A possible revaluation of the dollar against other currencies makes US export products more expensive. Thus, as Greece is a country relying on import traded products, mainly American, it is negatively affected in the specific circumstances.

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Neo-Protectionism: A Challenge to the Global Regulation in the Conditions of 'New Normal' of the Global Economy

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Abstract: The 'new normal' of the global economy as the environment for transformation of protectionism into neo-protectionism is explored in the article. The empiric analysis is used to demonstrate that at the current phase of development of international economic relations the arsenal of developed countries is dominated by instruments of hidden protectionism implemented mainly by methods of internal economic policy. Developing countries are trying to exploit the potential of sectoral protectionism and implementation of the policy of economic sanctions corresponds indirectly to the idea of selective protectionism used against individual countries or individual commodities. The economic basis of hidden protectionism is related to internal taxes and duties, public procurement, requirements to use local components in manufacturing finished products. The disguised or semi-open character of neo-protectionism does not fall under classical manifestations of protectionism, fixed in WTO documents. Neo-protectionism, being an instrument for gaining a segment of the global market and protecting national economic interests, involves modification of economic policy instruments towards strengthening its protective forms, and synthesizes both classical and novel forms of protectionism. This makes the term 'new protectionism' invalid because it has to be radically different in its meaning from the 'classical' one.

Keywords: Protectionism • Neo-protectionism • New normal of global economy • Economic growth

1 Introduction

Economic neo-dependence of countries, being an objective reality in the current spiral of globalization, signals a radically new phase in the development of international economic relations, involving transformations of the destructive symbiosis dependence into the balanced synergetic interdependence of countries, which is seen as a process of building up a complex meta-system of mutual relations in space and time with its specific features: the ramified structure having components with a wide spectrum of diverging relations, subordinated at global and regional level; a set of economic controversies that are implicit in global economic entities and constitute the objective basis for emerging new forms of cross-country interactions in the conditions of globalization; rise and spread of new forms of economic interdependences, immanent in the diffusion wave of globalization. Transformation of the dependence-based relations has had predictable effects for the rise of neo-protectionism as an instrument for gaining a global market segment and protecting national economic interests.

In the globalization process, protectionism has transformed from the trade policy based on tariff restrictions and later on non-tariff protection instruments into a sophisticated and comprehensive policy mechanism for enhancing the competitiveness of a national economy in the globalization process, which we call neo-protectionism. The article's objective is to explore the immanent features

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of protectionism embedded in economic policies of both developed countries and the ones that have to develop in the conditions of the rising 'new normal' in the global economy.

Neo-dependence demonstrates a novel paradox when no country is capable of taking on the responsibility for securing public welfare required for orderly operation and preservation of the global economy and effective monitoring of international institutes that are deemed responsible for maintaining openness of the trade system, sustaining stability of the monetary system, and proper operation of global financial markets.

2 Literature Review

G. Kolodko [Grzegorz W. Kolodko, 2000] rightly emphasizes that at the beginning of the 21st century the global economy entered a complex and turbulent period of evolution. It was the recent past, namely the earliest years of the new century, that marked the aggravating contradiction between cosmopolitism of the capital and sovereignty of a national state as a form for social organization, between the processes of globalization, based on liberalization of various forms of social and economic dialogue, their harmonization and unification, and the political power still concentrated by the state. The balance between traditional government institutions charged with decision making and new centres controlling the resources and economic processes required for their operation has been broken. But the need for supranational regulation is still ignored by the egoism of national governments.

Resource and technological, economic and geographical, socio-cultural, institutional and economic policy factors recombine the existing and potential competitive advantages of countries, thus visualizing the need for rethinking the role of the state in stimulation of the economic activity and reconfiguration of the existing institutional superstructure. According to H. Kolodko [Grzegorz W. Kolodko, 2000], globalization will inevitably lead to re-institutionalization of the global economy: building up new and globally rational principles of operation or a new pragmatic economic order. The changed weight of each of the five factors in determining the dominants of economic growth depending on the countries' grouping as developed or developing ones, with their content components revised, constitute the immanent feature of 'new normal'.

The contemporary economics is inseparable from the phenomenon of institutional vacuum. Institutional vacuum refers to absence of actors and necessary 'rules of the game' in given spatial and time coordinates, which would secure progressive development of the social system. Institutional vacuum is often equalized with institutional chaos as coexistence of old and new rules and business norms in transitional economies, which does not seem to be reasonably right.

As argued by N. Roubini [Roubini, 2016], we no longer live in the world of 'Big 20', although the group of 20 still continues to position themselves as a central actor in the regulation of international economic relations. This transformation occurred when the last financial crisis declined and incompatible political and economic values of countries were revealed. Today, the USA is lacking the capacities to remain the main producer of global social benefits. Europe is being busy rescuing the eurozone. Japan is being plunged in its domestic political and economic problems. Today, these countries have neither time, nor resources, nor internal political capital to become new international centres of force. China, too, is not inclined to take on the burden of responsibility of the global leader. Also, international challenges of today cannot be faced without direct participation of developing countries such as Brazil or India, which, being busy with domestic development problems, are not eager to seek for solutions of vital global problems.

As rightly emphasized by N. Roubini, today, we live in the world of 'Big Zero', where neither countries nor groups of countries have political and economic levers or will to solve significant international problems. It can result in the aggravating international conflicts in all-important issues

like global macroeconomic coordination, reform of financial regulation, trade policy or climate change. The concept of 'new normal' was proposed by Mohamed A. El-Erian [El-Erian, Mohamed A., 2009], as one of the directors of an investment company, in 2009.

3 Essential Results

The signs of 'new normal' will occur as a consequence of a crisis.

1) **The explicitly slower rates of economic growth compared with the previous decade.**

In fact, a 'new reality' is being formed as a result of the global crisis, encompassing not only the economy, but all the essential walks of life of the contemporary society. The leading countries of the world are entering a new trajectory of growth. It involves rates, factors, and quality of growth. Many criteria used to measure development dynamics at late 20th and early 21st century call for revision. New technology and disseminated innovation, including ones implemented by small companies, have radical and efficient outcomes across markets and industries. This determines the new manner of market behaviour including approaches to implementation of big long-term projects. In the contemporary world, industry-specific criteria like 'progressiveness' or 'backwardness' are abandoned: innovation capacities are available across industries. This raises the importance of issues associated with search for optimal mechanisms for enhancing diversification and innovativeness at industry level in order to adapt the existing economic structure to the challenges of the time.

2) **High rates of unemployment and ageing in OECD countries and rapidly growing developing countries.**

Demographic gap between OECD and non-OECD countries is likely to have long-term effects for key macroeconomic variables. This tendency forms but the vicious circle of dependence of new job creation on the total demand dependent on the attempts of the global economy to eliminate the recession-specific drawbacks that obviously reflect structural deficiencies of national economies. The problem of low labour productivity in the era of technological and innovation advancements in the industry deforms the perception of a human as a carrier of qualifications and skills. The global financial crisis has affected the market performance in EU countries, where the unemployment rate, being 7.1% in 2008, rapidly grew to as high as 9% in 2009 and 9.6% in 2010. As shown in Table 1, the unemployment rate, being 10.1% in I quarter of 2012, grew up to 10.7% in IV quarter of this year. The unemployment rate, growing in 2013, declined in IV quarter 2014 to 10%. On the other hand, unemployment data for Greece and Spain, where markets were hit much harder by the global crisis, are much higher compared to other EU countries. Actually, the unemployment rate in Greece was 21.9% in I quarter 2012 and 28% in III quarter 2013. In Spain, it was about 27% in I quarter 2013.

Boosting unemployment and loss of workforce due to the economic crisis resulted in the parallel growth of competition for limited government resources and tension between social groups. This situation incited protest moods of indigenous populations against citizens of non-EU countries, the latter being seen as potential competitors at the labour market. The risk of displacement of the indigenous population by immigrants caused reduction in salaries and wages in a number of industries, sometimes being a trigger for nationalistic movement. These fears have obviously led to protests against immigrants.

Thus, in Great Britain, native factory workers protested in February 2009 against the Portuguese and Italians with slogans like "British jobs for British workers". The even stronger demand of trade unions that foreign workers must not be allowed to work in Great Britain is an indicator of the growing protectionist tendencies. Like in Great Britain, the Irish came out to another massive protest against Polish workers. Once Poland was admitted to EU in 2004, nearly 300 thousand Polish workers set out to Ireland, where the construction industry was creating new jobs. However, due to the crisis of 2008, thousands of Polish workers were forced to return to the home country, which caused collapse of the

Irish real estate market. Yet, the Irish came out to strike against the Polish who remained in Ireland and, therefore, competed with domestic workers in the time of crisis.

The problem of unemployment, whose rate grew in EU countries due to the crisis, caused fears of the future, being the most important reason for protectionist measure expansion, such as hiring of only indigenous citizens. Also, it became harder to implement policies aiming to protect domestic workforce independently from external markets.

3) **Inclusive development as an ideological imperative for economic growth of countries**.

Discussion was focused on principles of trade regulation as globalization processes developed, inter alia, due to the impact of trade globalization on labour markets of the countries affected by socio-economic consequences of demographic transition. Use of trade protection instruments has become increasingly important after rethinking the ideological meaning of principles of economic growth as the goal of policy implementation. The inclusive dominant overshadowed extensive principles of economic operation, and prioritized the search for optimal ways of coexistence of national and global interests. The announced change in the emphasis by redirecting it to a human not only predictably excused the use of anti-cyclic stimulating measures of macroeconomic policy, but called for search for ways of structural transformation in developing countries' economies and revision of economic policies pursued by developed countries.

4) **Unbalancing of the global trade or 'the Global Trade Disorder' in the G20 wording**.

According to scientists, its signs are 'distortions or warping of trade practices'. As shown by the analysis of XVII report 'Conditions of the Global Trade', the 'distortions' in trade are caused mostly by fiscal stimuli for exports of goods that are competitive at markets of third countries, and they have stronger effects for trade volumes than import restrictions. Therefore, fiscal instruments, according to the document, have become the priority ones in protecting domestic producers. The most widespread forms of trade distortion over the latest seven years have been measures against dumping and subsidized imports, measures to restrict imports in case of their rapid growth, and providing subsidies and refinancing.

5) **Aggravation of debt problems**.

This peculiarity of 'new morn' originates in the unemployment and ageing problem. It was demonstrated that the country's capability to pay back its debts declines in parallel with ageing of its population. Because the period of gaining potential benefits from access to international markets becomes shorter, elder people will prefer the solution in favour of default on sovereign debt. Yet, the pensioners are interested in public welfare and social support, when amounts may be reduced due to paying back the external debt. Creditors, therefore, will prefer to reduce the amount of new loans to a country with ageing population.

6) **Considerable market uncertainty and further refocus of the global economic activity towards the countries with emerging markets**.

The long process of globalization, the deepening international integration of economic markets and blurring trade borders have forced countries to protect the markets that were becoming the increasingly more liberal. Although the free trade had existed before the liberalization process started, it became especially important with the beginning of the financial liberalization process in the 1970s. As a central objective of many countries in our time is to create favourable conditions for eliminating any potential barrier to international trade, the number of bilateral and regional agreements on free trade is increasing. However, in times of economic crises, when GDP declines and unemployment grows, even the strongest advocates of free trade would offer a number of arguments in favour of protectionist policies, especially in the developing economies that may not be ready to the global competition. The problem of choice between free trade and protectionism is being put forward once and again, becoming an issue in the agendas of G20 summits and discussions of domestic economic policies in both developed and developing countries.

There are three views of protectionism in the post-crisis period. The first one argues that the international system for free trade protection has worked well: WTO could implement the measures to counteract protectionism, and multilateral import restrictions like ones practiced in the 1930s could be eliminated. According to the second one, signs of the aggravating problems with protectionism could be observed in 2009, but thanks to the concerted efforts of countries they could be 'nipped in the bud'. Yet, the optimism of these arguments can be easily refuted, which is confirmed by the analysis of the quarterly cumulative number of the so called 'distortions of trade practices' beginning with November of 2008.

Scholars call governments' attempts to introduce protectionism 'distortions or warping of trade practices'. As shown by the analysis of XVII report on 'Conditions of the Global Trade', the 'distortions' in trade are caused mostly by fiscal stimuli for exports of goods that are competitive at markets of third countries, and they have stronger effects for trade volumes than import restrictions. Therefore, fiscal instruments, according to the document, have become the priority ones in protecting domestic producers. The experts advocating this statement argue that the G20 contribution is more fundamental than the WTO efforts. Prior to G20 summit of 2013 it was assumed that protectionist measures used intensively by countries beginning with 2009 would lose their importance with time passage. However, the optimistic conclusions articulated by high government officers were not confirmed over time. According to the third view, protectionism in time of the crisis was necessary from the political point, but it was an interim measure and, therefore, would be declining.

S. Evennet and J. Fritz in XVIII report 'Conditions of the Global Trade', presented in the Global Trade Alert, defined **three phases in the post-crisis stage of the protectionist measure implementation**. The first phase begins with the boosting numbers of protective measures taken as a response to the shrinking global trade in I quarter 2009, when 263 trade restrictions were introduced across the world, with the subsequently reduced number of complementary trade restrictions till III quarter 2010.

Trade protectionism, competitive devaluations, monetary expansion, and tax stimuli constitute instruments of the so called 'destruct neighbour' policy. Financial aid, measures of trade protection, import tariffs, etc. have different effects on the trade. Financial aid and subsidies to the industries not engaged in exports stimulate firms to keep production capacities, in order to have the country's imports declined through pursuing the import substitution strategy, reducing the trade balance deficit in this way. Apart from this, they allow for stimulating the domestic demand through the increased earnings of local residents, resulting from new jobs created in the framework of stabilization or stimulation programs.

It should be recognized that developing countries and industrially developed countries use different methods to protect domestic industries. While developed countries tend to use subsidies and financial aid to domestic companies, developing countries (not considering the practices of China, India or South Korea) had neither budgets sufficient to cover subsidies nor money sufficient to cover debts of domestic companies. Developing countries, therefore, preferred to increase tariffs and use other preventive measures of non-financial nature.

It should be noted that the rules of global grade per se allow countries to use preventive measures like custom duties when the amount of imports puts pressures on operation of domestic companies. On the other hand, countries cannot increase customs fees above a certain level due to the obligations adopted in WTO. This can excuse preventive measures like non-tariff restrictions, import quotas or various kinds of import subsidies. Unlike tariffs, non-tariff restrictions can be considerably changed in time, because they are flexible and dependent on administrative decisions.

It can be noted, however, that while the protective measures used by developed countries are characterized by flexible neo-protectionist instruments, measures of developing countries are often confined to protection from imports. The most widespread method of protection from imports, not

contradicting to WTO rules, is non-tariff restrictions. Protectionism is conventionally used to protect domestic producers from foreign competition. Non-tariff measures are so commonly used today because customs tariffs cannot be increased by countries. Four European countries – France, Germany, Italy, and the United Kingdom – as early as before the crisis ranked just after the U.S. in the list of countries imposing the majority of tariffs, by number and by ratio of measures called 'compensation fees'. They are followed in the list by major trade countries: Canada, Australia, and Japan. The countries of Old Europe have used the conventional policy of neo-protectionism against non-EU countries, in order to eliminate or prevent negative effects of the crisis. This policy included import quotas and non-tariff measures, as well as new protectionist strategies such as export quotas, invisible trade barriers, government loans to companies in strategic industries, etc.

Thus, a major part of leading EU countries used the policy protecting their strategic sectors through compensation fees against non-EU countries. The analysis of the number of protectionist policy measures adopted after 2008 shows that protectionist policies had the prevailing impact on agriculture and horticulture (233 protectionist measures), chemical industry (225), and transport equipment (193). At **the second phase**, the number of trade restrictions per quarter continued to rise and reached 160–170 till IV quarter 2011. At **the third phase**, quarterly totals reached the level of the first half of 2013, with the extreme of 225 trade restrictions in a quarter. The most significant compensation measures adopted in EU were measures of trade protection (484), measures of government assistance (476), and tariff measures (232). The most effective measures were export subsidies (with effects for 198 trade partners of EU), public assistance (194), and export fees or restrictions (183). Restrictions in public procurement, adopted by European Parliament at the beginning of 2014, play the important role, as non-EU countries are banned from taking part in public purchases if the access to the market is not reciprocal. These restrictions have affected 137 trade partners of EU, including Canada, the USA, Korea and Mexico.

Although S. Evennet and J. Fritz are convinced that the declining quarterly figures of implemented trade restrictions beginning with 2014 signal the occurrence of the fourth phase, characterized by the lowering protectionist rhetoric in international economic policies, we are sure that the protectionism of 21 century has more flexible and extensive instruments of influence, which cannot be identified only by analyses of the imposed barriers. It follows that the chronology of waves of protectionism in the world, proposed by S. Evennet and J. Fritz, cannot be regarded as a representative one.

4 Conclusions

Measures stimulating economic development against recession tendencies in the global economy, announced in macroeconomic policies of developed and developing countries, fall under the concept of 'neo-protectionism'. Unlike 'classical' protectionism focused on protection of domestic producers depending on their significance and political force of stakeholders, neo-protectionism is equipped with instruments to respond to new challenges of 'new normal'. In the up-dated form, the emphasis on goal setting is changing: to stimulate economic activity in response to the shrinking total demand rather than protect domestic businesses from foreign competition inside a country. The goals related with defending economic sovereignties (for developing countries) or fighting for maintaining (for developed countries) or expanding of economic influences (for developing countries) are, therefore, becoming the dominants of transformation of classical protectionism into neo-protectionism. Neo-protectionism involves modification of economic policy instruments towards strengthening of its protective forms, and synthesizes both classical and novel forms of protectionism. This makes the term 'new protectionism' invalid, because it has to be radically different by meaning from 'classical' – the one associated with tariff protection.

At the current phase of development of international economic relations, the arsenal of developed countries is dominated by instruments of hidden protectionism, implemented mainly by methods of internal economic policy. Developing countries are trying to exploit the potential of sectoral protectionism, and implementation of the policy of economic sanctions correlates with the idea of selective protectionism used against individual countries or individual commodities. The economic basis of hidden protectionism is related to internal taxes and duties, public procurement, requirements to use local components in manufacturing of finished products. As the disguised or semi-open character of neo-protectionism does not fall under classical manifestations of protectionism, fixed in WTO documents, further hybridization of its forms raises the importance of their classification to draw attention of the scientific community to new challenges to global regulation of the system of international economic relations.

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International Market of Syndicated Lending: World Trends and the State of its Development in Ukraine

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Abstract: The article analyzes the current state and structure of the world market of syndicated loans on the basis of statistical data prepared by leading international news agencies; it examines the main borrowers and the banks-arrangers in this market. The development and sectoral orientation specifics of the CIS syndicated loan market are analysed. The article examines Ukrainian participation and borrowers in the processes of international syndicated lending. The main stages and their distinctive features in the development of the syndicated loan market in Ukraine are singled out. The research proves dependence of the intensity of syndicated lending and its sectoral focus on changes in the country's macroeconomic indicators. The main Ukrainian recipients of syndicated loans and bank-arrangers are considered.

Keywords: Syndicated loan • Bank loan • Bank • Ukrainian market of syndicated loans • Financial long-term investments

1 Introduction

For most countries with economies in transition, such issues as overcoming the backwardness of the material and technical base in the real sector of the economy and the related need for financing production modernization remain topical. At the same time, national banking system capacity for long-term lending (while maintaining a high proportion of bank lending in the structure of sources of investment financing) is limited, and, as a result, domestic investment resources are scarce.

The ongoing processes of globalization and mutual integration of financial markets in the world have led to formation of a modern world capital market with one of the key segments of the world market of loan (debt) capital. Along with attracting direct investment into the economy, debt capital markets are one of the key mechanisms for attracting financing for capital investment, modernization of production capacities, refinancing, and implementation of development strategies. The accessability to domestic and external sources of long-term debt financing, in particular to syndicated loan markets, for Ukrainian companies and enterprises is an incentive for further economic development of the country.

2 Literature Review

The works of such scientific researchers and analysts like J.Armstrong, E.Asarnow, S.Dennis, D.Domanski, P.Kugler, M.McAdams, J.Shek and others are devoted to the development of theoretical and practical bases of the international credit market. The analysis of the essence, the issue of practice

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and technology for the provision of syndicated lending, in particular in the markets of the CIS countries, are disclosed in the papers by I.Balyuk, S.Moiseev, Y.Pinyagin, G.Sanko, and also in the works of such Ukrainian economists as O.Rogach, N.Moroz, I.Furman, S.Tsyganov, N.Kurdydyk, A.Yanshina, N.Panteleeva and others. The vast majority of the case studies in the economic development of various countries of the world indicate that one of the key factors of economic growth is attraction of investment in fixed assets. However, despite rather intensive economic growth observed in recent decades in different regions of the world, the problem of insufficient volume of investment and capital investment and, accordingly, the need for additional financing remains extremely urgent, in particular for Ukraine.

3 Basic Results of the Research

The analysis of trends in the development of the syndicated loan market shows the investment needs of the world's largest companies can far exceed the capabilities of individual international banks. Against this background, the development of a mechanism for attracting financing in international capital markets (through syndicated loans which provide a large loan to a group of banks under a single loan agreement) is particularly relevant.

The purpose of the paper is to study the nature and role of the syndicated lendings to the global economy and determine the place of Ukrainian companies in this market. The object of this study is the process of international syndicated lending as one of the most important tools for financing activities of large companies from developed and developing countries.

In today's environment of internationalization in the economy, the growing needs of business entities of different countries in long-term credit resources is associated with financial support of companies in all sectors of the economy. Syndicated lending is an extremely important element of international monetary and credit relations. And this fact is confirmed by its significant volumes that have reached $4.5 trillion in recent years.

To understand the scale of the world syndicated lending market (measured in trillions of dollars), the changes in its volumes for the period of 2011-2016 are considered (Global syndicated loans review, 2015; Guide to Syndicated Loans, 2013). Thus, in 2011 this figure reached $4 trillion and for the first time since the global financial crisis of 2008-2009 it has almost reached the pre-crisis level of 2007 in terms of lending. In 2012 there was a recession in the market to $3.4 trillion; in 2013 there was an increase to $4.4 trillion. In 2014, there was a historic peak with the largest amount of syndicated lending in the world which made $4.9 trillion. The indicators for 2015-2016 got down to $4.0 and $4.5 trillion respectively. These figures confirm the popularity of syndicated lending as a mechanism for attracting significant funds to finance large projects. As for the syndicated loan borrowers, they can be divided into three sectors. The largest volume of lending comes to the corporate sector – 70% of all loans, it is followed by the financial sector with 16%; sovereign sector has 2%, and the remaining 12% are accounted for other sectors. A significant amount of syndicated loan is directed to the corporate sector due to merger and acquisition processes, which have been extremely intensified in recent years and require significant financial infusions. In turn, the insignificant volumes of lending to the sovereign sector are due to the fact that governments carry out significant borrowings only at difficult times and only if there is not enough funds allocated to them by international financial institutions.

The largest syndicated banks are Bank of America Merrill Lynch, JPMorgan, Citigroup Inc., Mitsubishi UFJ Financial Group, Deutsche Bank AG, Barclays PLC, BNP Paribas and others (Table 1). In total, the 25 largest syndicated bank lenders in the world accounted for 62% of all loans in 2016. But it should be noted that almost one third (28.8%) of all syndicated loans in 2016 year came from the first five bank-organizations: Bank of America Merrill Lynch, JPMorgan, Citigroup Inc., Mitsubishi UFJ Financial Group, Mizuho Financial Group (Global syndicated loans review, 2015).

Thus, one can conclude that the global market for syndicated loans is monopolized by a small group of the largest transnational banks in the world.

The share of each bank-arranger of syndicated lending, depending on the region, can vary considerably. Therefore, JPMorgan (share in regional lending was 14% in 2015), Bank of America Merrill Lynch (13%), Wells Fargo & Co (7.7%), Citigroup Inc. (6.8%), Barclays (4.3%) are leaders in the North American region, and these five have 46.3% of all syndicated loans.

BNP Paribas SA, Barclays, JP Morgan, Deutsche Bank AG, HSBC are leaders in syndicated loans in the European region. In Asia and the Pacific, the list of leading banks is slightly different. These are Mizuho Financial Group, Sumitomo Mitsui Banking Corp., Mitsubishi Tokyo Financial Group Inc., Citigroup Inc., HSBC, and also such banks as the State Bank of India, Bank of China Ltd, Industrial@Comm. Bank China, China Development Bank. In Japan, national banks have been the main organizers of syndicated loans lately. Thus, the share of such banks as Mizuho Financial Group, Sumitomo Mitsui Banking Corp., Mitsubishi Tokyo Financial Group Inc. and Development Bank of Japan Inc. makes up 90.2% in the Japanese market.

Table 1

TOP-15 of Syndicated Loan World Banks in 2016

№	Bank	Volume of lending, $billion	Market share, %
1	Bank of America Merrill Lynch	300.5	7.5
2	JP Morgan	273.3	6.9
3	Citigroup Inc.	214.5	5.4
4	Mitsubishi UFJ Financial Group	185.8	4.7
5	Mizuho Financial Group	170.7	4.3
6	Wells Fargo & Co	168.2	4.2
7	Barclays	131.3	3.3
8	Deutsche Bank	130.6	3.3
9	Sumitomo Mitsui Finl Grp Inc.	117.4	2.9
10	HSBC Holdings PLC	104.1	2.6
11	BNP Paribas SA	101.6	2.6
12	Goldman Sachs & Co	93.1	2.3
13	Credit Suisse	85.3	2.1
14	RBC Capital Market	84.9	2.1
15	Bank of China Ltd	68.6	1.7

Source: compiled by (Global syndicated loans review, 2015).

Considering the regional distribution of syndicated lending in the world, it can be noted that from $4.5 trillion USD in 2016 the total syndicated lending to North and South Americas amounted to $2.6 trillion (58% of the world's syndicated loans), of which $2.3 trillion fall on the United States of America (52%); Europe has $1.1 trillion (20%); Asian countries obtain $754 billion (18%), in particular, Japan's share is of 6%; shares of China and Hong Kong together are 5%. In 2015, six largest recipients of syndicated loans (the US, the UK, Canada, Japan, Germany, and France) accounted for 77% of total loans, which indicates a high degree of concentration on the market for syndicated loans (Global syndicated loans review, 2015; Guide to Syndicated Loans, 2013). At the same time, certain developments in diversification processes in the relevant regional market can be noted thanks to more active borrowing from China and India.

The developed countries have the following distribution of syndicated loans for selected sectors of the economy. The example of the indicators of North and South America is to be considered as the industry distribution of syndicated loans. Thus, syndicated lending took place in the following sectors: fuel and energy complex ($481.6 billion or 18% of all loans), financial sector ($361.6 billion or 14%), industry ($277 billion or 11%), health care ($238.7 billion or 9%), high technologies ($192.9 billion or 7%), resource industry ($190.4 billion or 7%), retail trade ($180.8 billion or 7%), supply of goods and services ($166.8 billion or 6%), real estate ($150.7 billion or 6%), production of consumer goods

($150.3 billion or 6%), media and entertainment ($126.8 billion or 5%), telecommunications ($78 billion or 3%) and public administration ($26 billion or 1%) in 2016 (A Guide to the US Syndicated Loan Market, 2017).

Distribution of sectoral lending in the sectoral context in Europe looks somewhat different, but the overall trends in lending are the same as in the American region. Thus, the fuel and energy sector in 2016 amounted to $242.1 billion (19%), industry had $206.5 billion (17%), production of goods of mass consumption had $138.5 billion (11%), financial sector made $138.1 billion (11%), resource sector received $134.1 billion (10%), healthcare had $76.6 (6%), real estate sector obtained $69.9 billion (6%), telecommunications and the media sector had $59.0 billion (5% each respectively), supply of consumer goods and services had $49.4 billion (4%), retail trade and high technology had $42.5 billion and $43.4 billion respectively (or 3% each) (A Guide to the European Loan Market, 2010; Global syndicated loans review, 2015). Bayer AG, Syntegna AG, Shire PLC, 21st. Centure Fox Inc., Danon SA, Yamal SPG are among the companies that attracted the largest volumes of syndicated loans in the region of Europe, Middle East and Africa in 2016 (in total, these companies involved syndicated loans amounting to $135.6 billion). With the exception of 21st Century Fox Inc. (American descent), all companies are European, but it also received borrowings in the European market. Among the above-mentioned companies, the largest syndicated loan amounting to 56.9 billion dollars was attracted by the German company Bayer AG, and the last in this list was Yamal SPG (the amount of the loan received was 11.8 billion dollars). The companies represent such fields as healthcare (Bayer AG and Shire PLC), agriculture (Syntegna AG), media (21st Centure Fox Inc.), food industry (Danon SA) and fuel and energy sector (Yamal SPG).

The use of syndicated loans also has some regional differences. For example, in the countries of North America and Europe, the bulk of syndicated loans involved are used for general development of companies and refinancing of the existing debt. In Japan, most of the funds raised go to replenish the working capital.

The analysis of the world market structure for syndicated lending in the context of its international segment allocation and the ratio of domestic syndicated lending to individual groups of countries appears interesting. Thus, if we consider the ratio between domestic and international syndicated loans in ten major borrowing countries, the leadership of the international segment is noticable. In such countries as the United States, Great Britain, Germany, France, and Switzerland, the market is clearly dominated by the international segment, which varies between 52% in the United States and 90% in Switzerland. In such countries as Japan, Canada, and India syndicated lending is overwhelming at the expense of the domestic market (Balyuk, 2016).

Considering the market of syndicated loans in the CIS countries (Information agency Cbonds, 2017; Cbonds Rankings, 2017), the lists of bank-arrangers for syndicated lendings are completely different (Table 1 and 2). In the markets for syndicated lending in the CIS countries, the share of Russian banks is 27.8% of the total number of loans granted. First of all, in this market there are such Russian banks like Sberbank of Russia, Promsvyazbank, Alfa-Bank, and Transcapital Bank. The total amount of syndicated loans granted by them is $2,214 million. In the sectoral structure of borrowers, more than 60% of all transactions fall into the oil sector and energy. Also, there are such industries as transport, trade, communications, and construction. Lenders of Ukrainian borrowers are foreign Western banks; loans are directed mainly to metallurgical and food industries.

The distribution of volumes and sectoral structure of syndicated lending by individual CIS countries appear to be appealing (Financial Cbonds Information, 2017; Information agency Cbonds, 2017). 2011 is the most informative year, as since 2012 there has been a sharp decrease in the volume of loans granted in Ukraine due to political and economic reasons; and due to the political crisis in the East of Ukraine since 2014. In Russia, the volume of syndicated loans reduction is due to the introduction of economic sanctions. Total flows of loan capital through syndicated loans to CIS

countries (presented in Table 3) amounted to $50.3 billion. The share of 88.0% fell to Russia, and the share of Ukraine amounted to only 5.5% of the market syndicated loans in the CIS countries. Average terms for syndicated loans placing were 5 years; the interest rate fluctuated within Libor + 200-500 bp. In total, in recent years, due to political and economic events in the East of Ukraine and imposed sanctions against Russia (which proved to deteriorate their macroeconomic indicators), the volume of syndicated lending to Ukraine (which is to be considered further) and Russia have significantly decreased; the cost of attracted new resources has increased significantly due to the increase of spread. Moreover, there was a change in the sectoral structure of borrowers, and the conditions for securing loans strengthened due to increase of credit risks.

Table 2

Top-15 Banks-arrangers of Syndicated Loans in the CIS Countries (by the number of loans granted), 2016

№	Bank	The number of loans	Market share,%	The number of borrowers	Volume, $million USD
1	ING	21	7.6	16	1,523
2	UniCredit	19	7.7	14	1,548
3	Societe Generale	16	6.5	12	1,307
4	Sberbank of Russia	12	7.5	8	1,510
5	Promsvyazbank	12	0.9	6	184
6	RBI Group	10	3.4	8	675
7	Alfa-Bank	10	1.7	5	348
8	Transcapitalbank	10	0.9	5	172
9	Natixis	8	2.4	7	473
10	Bank of China	7	5.6	7	1,137
11	Intesa Sanpaolo	7	4.1	5	818
12	Credit Agricole CIB	7	2.7	6	544
13	Nordea	7	1.5	4	299
14	Mizuho Bank	6	4.9	6	981
15	Commerzbank	6	1.7	4	345

Source: compiled by (Cbonds Rankings, 2017).

Table 3

Geographical Distribution and Sectoral Orientation of Syndicated Loans in the CIS Countries

№	Country of a Borrower	Volume, $ million	Market share,%	Main industry
1	Russia	44,300	88.0	Banking sector, oil and gas industry
2	Ukraine	2,750	5.5	metallurgy
3	Kazakhstan	1,898	3.7	oil and gas industry
4	Belarus	1,191	2.4	Mining and chemical complex
5	Armenia	142	0.3	metallurgy
6	Azerbaijan	48	0.1	oil and gas industry

Source: compiled by (Financial Cbonds Information, 2017; Information agency Cbonds, 2017).

It is equally important to study the syndicated lending market in Ukraine. The processes of syndicated lending in Ukraine began in 2000. They have not yet been sufficiently developed in comparison to the developed countries of North America and Western Europe. To fully understand the syndicated lending market in Ukraine, it is necessary to identify the main periods of its development. After the collapse of the USSR in the early 1990's and the transition of its member countries to a new formation and the development of a market economy, the syndicated lending was first used as a large-scale mechanism for raising funds for individual enterprises and the economy as a whole. Since the second half of the 1990s, after the introduction of its own monetary unit, relative stabilization in the country's economy, including curbing inflation, the first deals with syndicated lending began to appear

in Ukraine. At the first stage (1995-2000), development of the Ukrainian market for syndicated lending was characterized by an extremely low indicator of the total annual volume of borrowed resources – up to 100 million dollars (the lowest index among Central and Eastern European countries); there was a small number of deals and a very narrow circle of borrowers.

The second period in the development of the syndicated lending market in Ukraine is related to 2000-2004. During those years, financial flows to Ukraine significantly increased on the basis of syndicated lending against the background of general economic stabilization and reached $450 million in 2000 and 2004 (Table 4). These processes were intensified against the backdrop of the country's significant GDP growth. The average GDP growth rate in Ukraine during the second period was 8.3%. In 2000-2004, a significant number of Ukrainian banks entered the foreign borrowing markets for the first time.

The third period in the development of the Ukrainian market of syndicated lending (2005-2008) is characterized by an extremely high rate of syndicated loans increase in Ukraine against the backdrop of high GDP growth rates. The main beneficiaries of syndicated loans in the Ukrainian market during this period were mainly Ukrainian banks. Thus, commercial banks received 12 syndicated loans out of 22 attracted to Ukraine in 2005, 21 out of 37 in 2006, and 41out of 56 loans in 2007.

Table 4

GDP and Volumes of Syndicated Loans to Ukraine, 2000-2016

Year	GDP, billion US dollars	GDP growth rate, %	Syndicated loans in Ukraine, $millions USD	Syndicated loans in Ukraine, % of the previous year
2000	32.3	5.9	450	-
2001	39.3	9.2	100	-77.3
2002	43.9	5.3	100	0
2003	52.0	9.5	150	150,0
2004	67.2	11.7	450	300,0
2005	89.2	3.1	1,800	400,0
2006	111.9	7.6	2,750	153,8
2007	148.7	8.2	6,900	250,9
2008	188.2	2.2	2,600	-62,3
2009	121.5	- 15.1	600	-76,9
2010	136.0	0.3	170	-71,7
2011	163.2	5.4	2,750	1617,6
2012	175.7	0.2	1,900	-30,9
2013	179.5	- 0.03	2,000	105,3%
2014	132.3	- 6.5	500	-75,0
2015	90.5	- 9.8	790	158,0
2016	93.3	3.1	-	

Source: compiled by (Financial Cbonds Information, 2017; Minfin, 2017; Information agency Cbonds, 2017).

At the same time, in 2005, large domestic industrial enterprises and enterprises in the field of mobile communications began to actively enter external borrowing markets. Among them, the Alchevsk Iron & Steel Works (with a borrowing amount of $350 million), a mobile telecommunications company 'Kyivstar' ($150 million), industrial enterprise 'Azovstal' ($100 million), and Industrial Union of Donbas ($85 million). In total, in 2005, syndicated loans were raised in the amount of 1.8 billion dollars in Ukraine. This indicator exceeded the limit of $1 billion for the first time, and in 2006 it made 2.750 billion dollars.

In 2007, there was the peak of syndicated lending in Ukraine: total borrowed loans amounted to 6.9 billion dollars on the background of active development of international financial markets and high rates of economic growth noted in Ukraine (Table 4). During the given year, 56 agreements were concluded. The prevailing number of borrowers was still represented by the banking sector (41

transactions were concluded for the purpose of lending to domestic banks, accounting to more than 73% of the total amount of loans). Major arrangers of syndicated loans in Ukraine were major Western banks: BNP Paribas, Barclays Capital, Deutsche Bank, Bayern LB, ABN AMRO, ING Wholesale Banking, and HSBC (Cbonds Rankings, 2017). This is explained by objective reasons: foreign banks have many years of experience in conducting syndicated lending operations and have the opportunity to attract more financial resources than Ukrainian banks. The total of granted by them loans amounted to 90% of the total Ukrainian syndicated lending market.

A characteristic feature of syndication loans for the banking system of Ukraine at that time was their insignificant and short-term nature. The average loan amount received by Ukrainian banks during the third period was not large: the average amount of the transaction was only $85 mln. The period 2005-2008 is also characterized by the entry of small Ukrainian banks into the international markets of syndicated lending (Group II by size of total assets according to the NBU classification). In this group, there are such banks like Dongorbank (loan volume of $5 million), Industrial Bank ($20 million), Credit Dnipro ($14 million), etc. (Panteleeva, 2012).

During this period the largest transactions were sent to the real sector of the Ukrainian economy. The following industries are distinguished by the volumes of loans attracted: ferrous metallurgy, communications and telecommunications, oil and gas and transport industries, foodstuff industry. Loans were granted to such industrial and transport companies as Metinvest ($1,500.00 million), Ukrzaliznytsia ($550 million), System Capital Management ($545 million), etc.

By the number of transactions during the third period (2005-2008), banking institutions remain at the forefront of syndicated lending market. Other industries where syndicated loans were directed are represented by 1-2 enterprises. Thus, the branch of ferrous metallurgy is represented by ‘Metinvest Holding’ mining industry is represented by ‘Interpipe Ukraine’ and ‘Ferrexpo’; financial sector is represernted by ‘System Capital Management’; transport industry, communications and telecommunications are represented by ‘Ukrainian Radio Systems’ and ‘Ukrzaliznytsya’; agriculture is represented by ‘Zernotorgovaya Company’.

In 2008 (against the backdrop of the global financial crisis) activity in the syndicated lending market of Ukraine declined; the volume of borrowed loans reduced by 2.5 times compared with the previous years and amounted to $2.6 billion. By the number of loans received, the main beneficiaries of syndicated loans continued to be the banking sector: Ukrainian banks received 25 from 28 loans in 2008.

The fourth period in the history of the development of the market for syndicated lending in Ukraine (2009-2013) relates to the economic recovery in the development of the world economy and stagnation of the Ukrainian economy in those years (Table 4). In 2009, the volume of syndicated loans attracted to Ukraine amounted to only 600 million dollars. There was a sharp decline in the number of commercial banks-recipients in the structure of borrowers in the Ukrainian market of syndicated loans: in 2007, there were 16 banks – recipients of syndicated loans, whereas in 2009 there were only 2. During 2011-2014, none of the Ukrainian banks attracted syndicated loans. The market for syndicated loans was gradually converted to the real sector of the Ukrainian economy (Information agency Cbonds, 2017).

However, there were certain processes of activating syndicated loan operations, which reached their maximum of 2,750 million dollars in Ukraine in 2011. The syndicated loan market was finally converted to finance the real sector of the economy. In this period, borrowing was mainly carried out by ferrous metallurgy and food industry enterprises. The largest volumes of loans came from the agriculture and food industry (‘Kernel-Trade’, ‘Nibulon’, ‘Ukrlandfarming’, ‘Creativ Group’, ‘Ferrexpo AG’), mining (‘DTEK’), and ferrous metallurgy (‘Metinvest’). Thus, the Ukrainian agroholding ‘Ukrlandfarming’ received a syndicated loan for 5 years at 600 million dollars at the Libor + 8 rate; ‘Ferrexpo AG’ obtained $420 million at the rate Libor + 2,5; ‘Metinvest Mining’ and

‘Metallurgical Complex’ gained $1 billion at the Libor + 3% rate for a five-year period in 2015 (Information agency Cbonds, 2017).

Since 2010, banking institutions have no longer been the main recipients of syndicated loans. Thus, with a general decrease in the number of syndicated loans granted to Ukrainian borrowers, in 2010, only one of 4 loans granted was in the banking sector; and in 2011, 2012, and 2014 years, as previously mentioned, Ukrainian banks did not participate in this process at all .The decrease in the activity of Ukrainian commercial banks in attracting syndicated loans is due to several reasons: accumulation of large volumes of non-recovered and problem loans in the Ukrainian banking system; restructuring the current debt of banks; reducing the credibility of the banking system in the domestic market and, as a consequence, increasing credit risks. Debts of Ukrainian banks were born during the economic growth in Ukraine, and they had to return them in conditions of low liquidity, profitability and a reduction in business activity. A number of banks that defaulted at the time could not fully settle on syndicated loans.

In 2009-2013 there are changes in the structure of banks-arrangers of syndicated loans in Ukraine. Thus, among the five largest arrangers of syndicated loans are: ‘ING Bank’ (23% of all loans granted), ‘UniCredit Bank AG’ (20%), ‘Sberbank of Russia’ (9%), ‘Gazprombank’ (9%), ‘Deutsche Bank’ (8%). In 2012, three Russian banks appeared in the top ten banks: ‘Sberbank of Russia’, ‘VTB Bank’ and ‘Gazprombank’ (in total, 24% of the syndicated loans granted). The share of other banks was 5-6% each (Cbonds Rankings, 2017).

The fifth period in the development of the syndicated loan market in Ukraine (2014-2017) shows a sharp decline in the volume of loans granted to Ukrainian enterprises and the country’s banking sector because of the increased political and economic risks due to the events in the East of Ukraine and annexation of Crimea. Leading positions in the market are still held by foreign banks-arrangers. However, Russian banks have almost completely disappeared from the group of main organizers of syndicated loans. The volume of syndicated loans in these years fluctuates within 500-800 million dollars annually. The share of the Ukrainian syndicated loan market makes only 0.01% of the global market. In 2015, there was a slight increase in the volume of loans granted, but the volume of 790 million dollars has been the highest in recent years. Major loans, like in the previous period, were sent to the real sector of the economy and the main recipients were enterprises of agriculture: JV ‘Nilbulon LLC’ (135 million dollars), ‘Kernel Group LLC’ (415 million dollars) , PJSC ‘Myronivsky Hliboprodukt’ (200 million dollars) (Financial Cbonds Information, 2017). Foreign creditors give preference to borrowers with experience in attracting syndicated loans or other types of medium- and long-term international financing.

To sum up, considering the sectoral distribution of syndicated loans in Ukraine (2010-2015), the share of individual sectors was as following: metallurgy had 47%, food industry made 26%, energy got 11%, agro-industry recieved 10%, banking sector obtained 4%, and other industries had 2%. In 2016, only one Ukrainian company was able to attract syndicated loans: agricultural group ‘Kernel’ attracted funding of 65 million dollars. The loan was aimed at expanding production facilities for processing grain and oil crops. The increase in production volumes of agricultural products directly affected the export dynamics of the country. It should be noted that the agraricultural sector of the country has been recently developing at an accelerated pace and most investors and lenders see the greatest prospects in the country's economy (Market Leader, 2016).

In 2017, on the background of improving the macroeconomic projections in Ukraine, the number of Ukrainian borrowers of syndicated loans is slightly increasing. Several agreements are in the process of signing. Thus, the company ‘Ferrexpo’ (mining industry) will receive a syndicated loan worth $350 million; ‘Zernoprodukt MHP’, which is part of the agricultural holding ‘Myronivsky Hliboproduct’ will obtain $100 million. The lenders are ‘ING Bank’, ‘Credit Agricole’ and others. At the same time, there is active lending to Ukrainian companies in the power industry and agriculture by

international financial organizations. In general, it should be noted that for modern syndicated loan processes, Ukraine is still characterized by low diversification and concentration in the export sectors of the country.

4 Conclusions

Summarizing the above, we can say that the process of syndicated lending in Ukraine as a tool to attract additional capital for the purpose of financing enterprises is not yet a widespread and fully formed phenomenon. Compared to the United States and Europe, where the syndicated lending processes were formed already dozens of years ago, this funding mechanism has not received sufficient development yet and has a sporadic character in Ukraine. The volume of funds attracted varies significantly for the period under study (2000-2016) with sharp growth and decline, depending on changes in the country's key macroeconomic indicators. In recent years, Ukrainian enterprises have received insignificant foreign exchange loans from foreign banks for production and export financing. At the same time, the global financial crisis of 2008-2009 and the internal political and economic situation in the East of Ukraine since 2014, has the most negative impact on the sustainable development of this process. Another factor is a decrease in confidence in domestic borrowers among foreign investors after the last financial crisis.

The syndicated loan market in Ukraine is represented by a narrow range of borrowers, mainly representing the export sector of the economy. The number of industries involved in the syndicated loan process is very low. The banking sector has almost not received syndicated loans in recent years due to the accumulation of large amounts of unreturned loans and bad debts, which makes it necessary for them to work to restructure the current debt. Under such conditions, the Ukrainian market of syndicated lending practically does not work or fulfill its main tasks in the economy at the present stage.

Thus, the last five years have become a complex stage in the development of syndicated lending in Ukraine. It is significant that the volume of attracted loans during this period did not reach the maximum of 2007, having decreased from 1.7 billion dollars in 2010 to 790 million dollars in 2015. However, the distinguishing feature of this stage was the fact that there was practically no share of commercial banks in the structure of borrowers. The market was almost completely redesigned to finance the real sector of the economy. In this period, borrowings were carried out mainly by enterprises of ferrous metallurgy and food industry. Therefore, syndicated lending is an innovative product for banks and corporate borrowers in Ukraine and requires further development.

Syndicated loans can be additional sources of financing for manufacturing enterprises in Ukraine. But the borrower must meet a number of stringent requirements, including: financial stability of the borrower, effectiveness and break-even of its activities, transparency and publicity in the financial statements, availability of audited accounts of international standards, availability of credit rating of one of three rating agencies (S&P, Moody's, Fitch). In accordance with international practice, the ratings of potential Ukrainian borrowers cannot be higher than the Ukraine's sovereign rating; this fact prevents development of syndicated lending in Ukraine. At the same time, the international rating of Ukraine is rather low, which is an obstacle in attracting foreign credit resources by Ukrainian enterprises.

It is possible to ascribe the following to the reasons restraining introduction of the mechanism of syndicated crediting in Ukraine: the remaining deficit of credibility in the banking sphere in relation to Ukrainian banking institutions and enterprises; the lack of credit history in Ukrainian capital markets; lack of audited financial statements according to international standards for most Ukrainian enterprises; insufficient level of transparency and quality of corporate governance in Ukrainian enterprises; high organizational commission of banks-arrangers of the syndicate; inadequate

development of domestic legislation and lack of standardized documentation on the organization of syndicated loans; absence of a secondary market for syndicated loans; insufficient degree of Ukraine's integration into the international capital flow system as a whole, and in the system of the loan capital movement in particular. Here one can add all the known shortcomings of the undeveloped market: lack of methods for assessing risks, infrastructure, and professionals.

At the same time, creation of an effective system of syndicated loans in Ukraine will contribute to a multiple increase in the capacity of the banking system as a whole. The use of syndicated loans will allow accumulating the necessary credit resources for implementation of large long-term investment in Ukraine's economy. It is necessary to say that in order to increase the competitiveness of enterprises in the real sector of the Ukrainian economy, it is important to increase investment in the renewal of fixed assets and introduction of new technologies designed to improve the competitiveness of the inbound products and services not only in the metallurgical and food industries but also in other sectors of the economy. To implement capital investment, Ukrainian companies need to attract a large amount of financing, both in the form of new share capital and debt investors. Along with attracting direct investment into the economy, debt capital markets around the world are one of the key mechanisms that large companies and banks use to attract financing for capital investment, modernization of production facilities, refinancing and implementation of development strategies. In this regard, the accessibility of Ukraine's companies and enterprises to domestic and external sources of long-term financing will be the guarantee of its stable economic growth.

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Transformation of the Fiscal Space of Ukraine in the Process of Integration into the European Union

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Abstract: This research looks at the formation of fiscal space in Ukraine and its scientific theoretical and pragmatic features. The study proves that this issue has become relevant especially due to the lack of budget funds necessary for the state to fulfill its functions. The dynamics of public debt in European countries has been analyzed and formulated. The main indicators of the fiscal policy development in the countries of the European Union were monitored. The study analyses the factors that influence the effectiveness of budget and tax policy as fiscal space components and indicates effective vectors of fiscal space development in Ukraine taking into consideration European aspects.

Keywords: International economics • Fiscal space • Fiscal regulation • Direct taxation • European Union • Fiscal efficiency

1 Introduction

The formation of the fiscal space is conditioned by the need to make managerial decisions regarding accumulation of budgetary resources for modernization of the economy, implementation of structural reforms in the social sphere, and formation of strategic purpose for national development. The Euro integration, signing of the Association Agreement between Ukraine and the EU, and the weak position of Ukraine in most global financial and economic ratings determine the need to find scientifically based solutions for implementation of the European mechanism for fiscal space functioning. In the European Union the efficiently built concept of taxation and fiscal regulation ensures adoption and successful implementation of government decisions to identify and use additional budgetary resources. Using Ukraine's competitive advantages under the terms of the EU-Ukraine Association Agreement will determine the relevance of the research on the fiscal space functioning in the European global environment in order to systematize effective procedures for fiscal policy in Ukraine. This will enable to optimize and stabilize fiscal regulation, which will be the basis of economic growth in the country.

Modern financial and economic relations require thorough research into the prospects for fiscal space development. From one point of view, not all experience is successful and on the other – not all experience can be implemented strategically. For example, introduction of the excise tax on alienation and derivatives transactions in the form of a European initiative in 2014 proved to be ineffective and this tax was abolished in Ukraine in 2015. Thus, it is urgent to study with a critically analyze the feasibility of using European experience in order to create an effective fiscal space in Ukraine in the context of establishing successful economic relations between Ukraine and the European Union.

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2 Literature Review

A great deal of work on the study of fiscal space at the world level has been made in the World Bank report, the report of the European Bank for Reconstruction and Development, as well as in the works of such specialists as A. Alstadsæter, S. Barrios, P. Heller, A. Heuty, E. Letouze, G. Nicodeme, R. Roy, A. Skonieczna, T. Thomas, and A. Vezzani.

Among the Ukrainian scholars studying the topical issues of formation fiscal space we can name the following: V. Andrushchenko, R. Balakin, S. Gasanov, M. Dyha, Y. Ivanov, Y. Kasperovich, O. Klepanchuk, A. Krysovatyi, V. Kudryashov, A. Mayba, L. Markova, K. Proskura, K. Khimich, S. Yuriy, T. Efimenko and others.

A detailed analysis of literary sources indicates the study of key theoretical positions in the following areas: tax system, fiscal policy, budgetary system, financial regulation, international cooperation, social sphere, international taxation, improvement of fiscal administration, etc. Nevertheless, some issues of the fiscal space formation in Ukraine remain relevant and require further theoretical studies, complemented by their practical analysis, since fiscal instruments are a key factor in solving problems arising from the decline in state budget revenues and their uneven distribution.

3 Basic Results of the Research

The founder of the theoretical concept of the fiscal space is P. Heller, who identifies it with additional possibilities of the national budget to have resource support to finance the necessary needs on the condition of maintaining stability of the financial position or economic stability (Heller P., 2005).

M. Dyha explores fiscal space in the context of realizing plans for socio-economic development and social issues, innovative modernization of the economy and enhancing its competitiveness, based on the approval of strategic purpose and priorities for the country's development (Dyha M., 2015, p. 82).

Fiscal space is a government budget reserve that can be used to fulfil its goals without affecting financial positions and the stability of the economy. The idea of this definition is that if there is a need to allocate additional financial resources to government expenditure it is necessary to form fiscal space. It is possible to create it by increasing tax burden, obtaining external guarantors, reducing expenditures, and borrowing funds.

The main tendencies of the system of fiscal-tax regulation of Ukraine during the last decade have been up to standards of Eastern European countries and are characterized by a relatively high share of centralization of GDP through the public administration sector. Traditionally, according to the classical approach in world practice, it is common ground to distinguish between three major models of fiscal regulation, depending on the level of centralization of GDP – American, European and Scandinavian (socially oriented). The European model is characterized by centralization at the stage of secondary distribution of GDP at the level of about 35-50% of GDP in the revenues of the public administration sector.

As of the end of 2015, the European Union includes 28 countries, including 19 countries in the euro zone. The statistics of the EU and the Free Trade Association is based on the European System of National and Regional Accounts (ESA2010). The structure of ESA2010 is consistent with the global guidelines for national accounting set forth in the system of national accounts in 2008 (SNA2008) (Hasanov S., 2015, p. 33).

In contradistinction to the common monetary policy of member countries of the euro zone, the fiscal policy of the European Union can be characterized as ‘unity in diversity’. According to the constituent documents of the EU, the 3% deficit and 60% of the state debt to GDP in the market prices

are the most admissible. In case of excess, an excessive deficit procedure is initiated. The European model is heterogeneous: when comparing countries, the level of public debt, revenues and expenditures of the public administration sector varies considerably, while the budget deficit varies depending on the political and economic cycles. Over the last two decades, the member states of the EU have completed three full fiscal cycles with peak spending in 1995, before the wave of EU enlargement in 2004 and the global financial and economic crisis of 2009, accompanied by an increase in public debt. During 1995-2015 the formation of revenues of the European Union's public administration sector was at the level of 43.6-45.6% of GDP (in the euro zone, 44.3-46.8% of GDP). Expenditures were financed at the level of 44.7-52.0% of GDP (in the Euro-zone 45,3-53.0% of GDP). Traditionally, the incomes and expenditures of the euro zone countries are 0.1-1.5% higher than the EU member states in general (Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union, 2012).

The greatest degree of unbalance in the finances of the national government sector was achieved in 2009 – with the reduction of income at the level of 43.6% of GDP and a sharp increase in expenditures at the level of 50.3% of GDP, the deficit was record – 6.7% of GDP. Hence, there was a critical need for consolidation of the budget – increasing revenues and / or reducing expenditures to balance the budget. The global financial and economic crisis exacerbated the debt burden on the state budget. During the recession, gross national debt grew rapidly from 57.8% of GDP at the end of 2007 to 73.0% of GDP at the end of 2009 or 15.2% in two crisis years. The debt growth continued to reach 86.8% of GDP in 2014 (Fig. 1). It should be noted that according to this indicator 16 countries out of 28 (more than half of the EU members) crossed the mark of 60% of GDP. The most troublesome are the countries that crossed the mark of 100% of GDP – Greece (178.6% of GDP), Italy (132.3% of GDP), Portugal (130.2% of GDP), Cyprus (108.2% of GDP), Ireland (107.5% of GDP) and Belgium (106.7% of GDP).

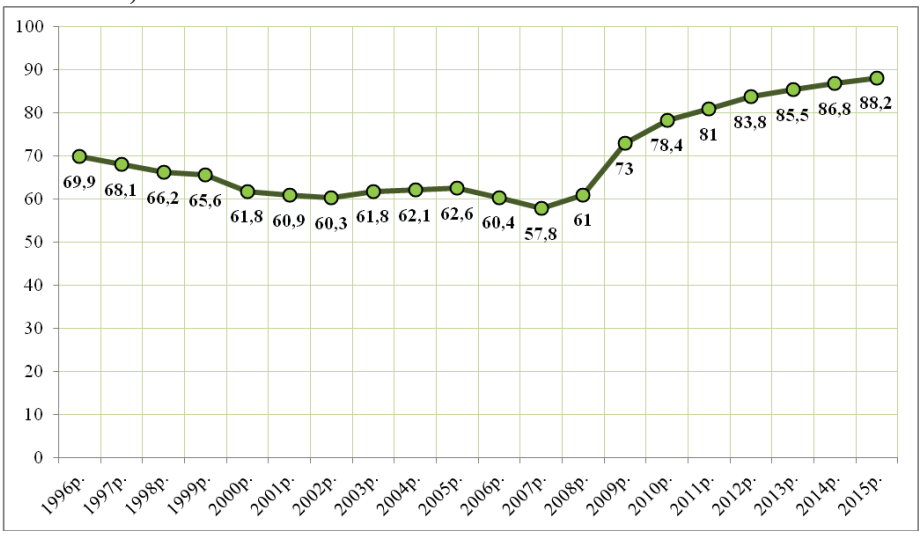

Fig. 1. The Dynamics of the EU Public Debt in% of GDP

Source: Kasperovych Yu. (2015)

As of the end of 2015 the following key parameters of the fiscal policy were fixed on the EU member states on average (Annual government finance statistics. Total general government revenue, 2015):

– The public debt was 86.8% of GDP (in the euro area, 92.1% of GDP), in particular: up to 30% of GDP – in Estonia (10.4), Luxembourg (23.0), Norway (26.6), and Bulgaria (27.0);
– Budget deficit - over 3.0% of GDP was registered in 13 EU member states. Characteristically, among them in 10 countries, deficits were also recorded during the previous 3 years. The largest deficits were recorded in Cyprus (-8.9% of GDP), Portugal (–7.2), Spain (–5.9), Bulgaria (–5.8), and the United Kingdom (–5.7) and Croatia (–5.6% of GDP);
– Budget expenditures constituted 48.2% of GDP (49.4% of GDP in the euro area), in particular: up to 35.0% of GDP in Romania and Lithuania; Over 55.0% – in Belgium, Denmark, France and Finland;
– Budget revenues constituted 45.2% of GDP (46.8% of GDP in the euro area), in particular: up to 35.0% of GDP – in Switzerland, Romania, Lithuania and Ireland; more than 55.0% in Denmark.

In 2016, Ukraine crossed the mark of public debt at 90.0% of GDP, so the European experience of fiscal consolidation is beneficial for Ukraine. The high level of debt is a serious obstacle to prevent Ukraine's membership in the European Union. The International Monetary Fund, the key creditor of Ukraine, predicted the growth of Ukraine's gross national debt by the end of 2015 to 94.4% with a further decrease of this indicator by 2020. In 2016 the government debt slightly decreased to 92,1% of GDP, And the most serious debt reduction is expected in 2019 and 2020 - to 76.9% of GDP and 70.8% of GDP respectively (Figure 2).

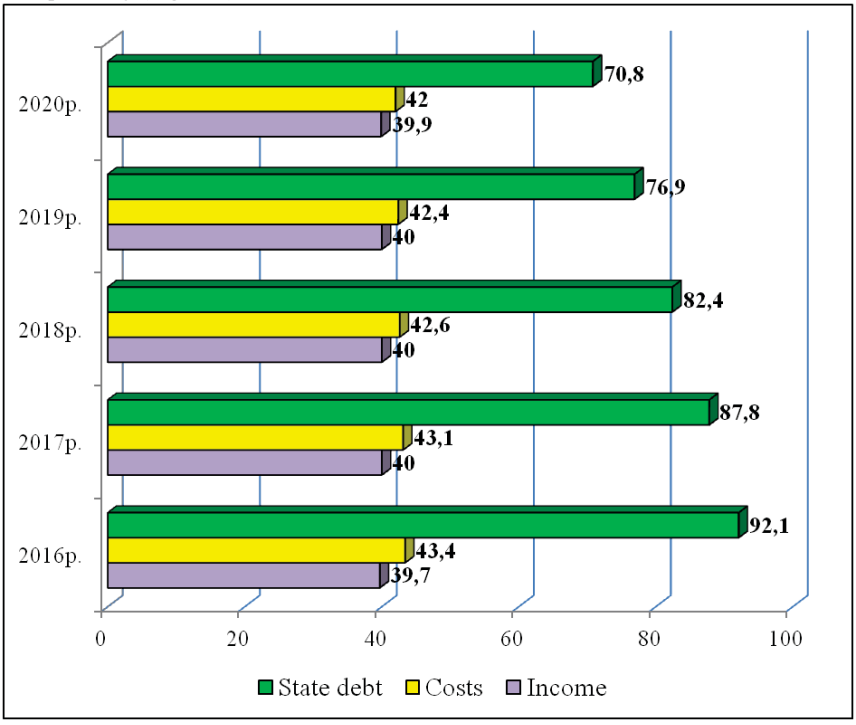

Figure 2 The Forecasting Indicators of the General Government of Ukraine in 2016-2020, % of GDP

Source: Kasperovych Yu. (2015)

During 2010-2014 in Ukraine (with the exception of the year of the Euro-2012 Football Championship) the trend continued to decrease the indicator of GDP redistribution through the government sector, and this trend is forecast by the IMF by 2020. In 2012, the revenues of the public administration sector amounted to 44.7% of GDP (627.4 billion hryvnias), in 2013 they fell to 43.3% of GDP (634.8 billion hryvnias) and in 2014 they decreased to 40.8% of GDP (639.7 billion hryvnias). In 2012, expenditures of the public administration sector amounted to 49.0% of GDP (687.9 billion hryvnias), in 2013 they fell to 48.1% of GDP (UAH 704.9 billion hryvnias) and in 2014 decreased to 45.4% of GDP (710.5 billion hryvnias) (Kasperovych Yu., 2015, p. 12).

The IMF predicts a slight variation in government revenues (from 40.8% of GDP to 39.7-40.0% of GDP) in 2016-2020 and a significant reduction in public spending (from 45.0% of GDP to 42.0% of GDP) (See Fig. 2). Consequently, it can be concluded that Ukraine has a moderately high share of GDP centralization through the general government sector, which is in line with the established practices of Eastern European countries. Distribution of budget revenues between levels of government reveals prevalence of the central government. Revenues and expenditures of the public sector include revenues and expenditures of the state budget, land / province / state / canton / county respectively for federal countries (Austria, Belgium, Spain and Germany).

Excluding federated countries and small island Member States the income indicators of the government sector to maintain the level of economic security are at the level of 40-45% of GDP, including: at the central government level, 20-35% of GDP and at the level of local government – 5-15% of GDP. It is expedient for Ukraine to adhere to these limits in the course of the reform of fiscal decentralization.

The structure of incomes in the general government sector in the EU-28 and EU-19 is mainly formed due to tax revenues (by the results of 2015: 58.8 and 55.5%) and social contributions (29.8% and 33.3%) (World Economic Outlook Database, 2015). In the EU-28 and EU-19 countries, over the past few years, there is a clear trend towards a gradual shift in the tax burden from mobile factors of production (capital and labour) into consumption. The general features of the functioning of the fiscal space were characterized by a decrease in the rates of direct taxes (see Table 1). At the same time, it is natural for Ukrainian realities of fiscal policy to add a grower indirect tax rates: mainly on account of VAT and excise taxes on alcohol and tobacco products.

Comparative analysis of rates in the Table 1 testifies that Ukraine is in the European trend according to the size of tax rates. It is significant that domestic rates are basically lower than the current rates in the vast majority of EU member states. Therefore, the need to balance the public finance sector provides grounds for implementing the concept of reforming the tax system of the Ministry of Finance of Ukraine, which involves unification of the rates of key budget-forming taxes: VAT, corporate income tax, personal income tax and social tax.

Against the backdrop of global trends in fiscal consolidation, the need to increase VAT revenues is achieved by extending the tax base or increasing the existing standard / reduced rate. Actually, wealthy households benefit more than low income households from the significant number of reduced VAT rates in the European Union. This is especially true for reduced rates of VAT on restaurant meals, hotel rooms and cultural values, including books, theatre and movie tickets. The best way to achieve justice and social goals in the EU will be to abolish many of preferential tariffs and replace them with more targeted relief measures depending on the level of income and tax credits (Roy R., 2006, p. 35).

Changes in EU fiscal policy are regular. Detailed tax reforms ensure the stability of public finance, economic growth, employment and competitiveness, as well as fair distribution of income. The European Commission's analytical data allow tracking the number of tax reforms in the 28 EU member states. During 2010-2015, there were 1.188 tax reforms related to the increase or decrease of the tax rate and / or tax base, and introduction / cancellation of taxes. The largest number or more than

60 reforms took place in Spain (78), Austria (70) and Hungary (62). About 30 reforms were implemented in Luxembourg (21), Cyprus (25), Bulgaria (27), Germany and Lithuania (29). On average 42 reforms were put in place (Taxation Reforms Database, 2015).

Table 1

The Upper Marginal Rates of Personal Income Tax and Corporate Income Tax for the Enterprises of the EU Member States in 1995-2015, %

EU countries	*Tax on personal income*						*Corporate income tax*					
	1995	2000	2005	2010	2014	2015	1995	2000	2005	2010	2014	2015
Austria	50.0	50.0	50.0	50.0	50.0	50.0	34.0	34.0	25.0	25.0	25.0	25.0
Belgium	60.6	60.6	53.7	53.7	53.8	53.8	40.2	40.2	34.0	34.0	34.0	34.0
Bulgaria	50.0	40.0	24.0	10.0	10.0	10.0	40.0	32.5	15.0	10.0	10.0	10.0
Greece	45.0	45.0	40.0	49.0	46.0	48.0	40.0	40.0	32.0	24.0	26.0	29.0
Denmark	65.7	62.3	62.3	55.4	55.6	55.8	34.0	32.0	28.0	25.0	24.3	23.5
Estonia	*26.0*	26.0	24.0	21.0	21.0	20.0	26.0	26.0	24.0	21.0	21.0	20.0
Ireland	48.0	44.0	42.0	47.0	48.0	48.0	40.0	24.0	12.5	12.5	12.5	12.5
Spain	56.0	48.0	45.0	43.0	52.0	46.0	35.0	35.0	35.0	30.0	30.0	28.0
Italy	51.0	45.9	44.1	45.2	47.9	48.9	52.2	41.3	37.3	31.4	31.4	31.4
Cyprus	40.0	40.0	30.0	30.0	35.0	35.0	25.0	29.0	10.0	10.0	12.5	12.5
Latvia	25.0	25.0	25.0	26.0	24.0	23.0	25.0	25.0	15.0	15.0	15.0	15.0
Lithuania	33.0	33.0	33.0	15.0	15.0	15.0	29.0	24.0	15.0	15.0	15.0	15.0
Luxembourg	51.3	47.2	39.0	39.0	43.6	43.6	40.9	37.5	30.4	28.6	29.2	29.2
Malta	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Netherlands	60.0	60.0	52.0	52.0	52.0	52.0	35.0	35.0	31.5	25.5	25.0	25.0
Germany	57.0	53.8	44.3	47.5	47.5	47.5	56.8	51.6	38.7	30.2	30.2	30.2
Poland	45.0	40.0	40.0	32.0	32.0	32.0	40.0	30.0	19.0	19.0	19.0	19.0
Portugal	40.0	40.0	40.0	45.9	56.5	56.5	39.6	35.2	27.5	29.0	31.5	29.5
Romania	40.0	40.0	16.0	16.0	16.0	16.0	38.0	25.0	16.0	16.0	16.0	16.0
Slovakia	42.0	42.0	19.0	19.0	25.0	25.0	40.0	29.0	19.0	19.0	22.0	22.0
Slovenia	50.0	50.0	50.0	41.0	50.0	50.0	25.0	25.0	25.0	20.0	17.0	17.0
The United Kingdom	40.0	40.0	40.0	50.0	45.0	45.0	33.0	30.0	30.0	28.0	21.0	20.0
Hungary	44.0	44.0	38.0	40.6	16.0	16.0	19.6	19.6	17.5	20.6	20.6	20.6
Finland	62.2	54.0	51.0	49.0	51.5	51.6	25.0	29.0	26.0	26.0	20.0	20.0
France	59.1	59.0	53.5	45.4	50.3	50.3	36.7	37.8	35.0	34.4	38.0	38.0
Croatia	42.9	41.3	53.1	50.2	47.2	47.2	25.0	35.0	20.0	20.0	20.0	20.0
Czech Republic	43.0	32.0	32.0	15.0	22.0	22.0	41.0	31.0	26.0	19.0	19.0	19.0
Sweden	61.3	51.5	56.6	56.6	56.9	57.0	28.0	28.0	28.0	26.3	22.0	22.0
EU, average	47.2	44.6	40.4	38.6	39.4	39.3	35.0	32.0	25.3	23.2	22.9	22.8
Euro zone, average	46.9	45.2	40.6	39.7	42.3	42.1	35.8	33.3	26.7	24.5	24.8	24.6

Source: Tax Reforms in EU Member States: 2015 Report

It is important to note that the main article of the budget on social protection is the largest and most important in all EU member states and it averagely accounts for more than 40.0% of the total volume of expenditure of the public administration sector. Their share has significantly increased after

the crisis of 2008 on average from 17.5% to 19.6% of GDP, incl. from 18.0% to 20.2% of GDP in the euro zone. At the same time, the volume of expenditure between countries varies considerably – from 12% of GDP in Latvia (11.3%), Lithuania (11.4%), Romania (11.5%), Cyprus (11.9%) to more than 20% of GDP In Italy (21,0%), Austria (21.4%), Sweden (22.6%), France (24.5%), Finland (24.9%) and Denmark (25.1%). The main items of social protection expenditure are programs for the elderly. On average they spend 10.4% of GDP in the EU-28 and 10.9% of GDP in the EU-19.

In Ukraine, expenditures on social protection and social security also have the largest share. The social orientation of budgets, together with significant expenditures on education and health, needs reforming and self-financing should be expanded. It is significant that pension expenditures in Ukraine are among the highest in the world, but in fact they do not provide the sufficient level of well-being for the seniors.

The structure of expenditures closest to the level of economic development of the EU-28 member states and Ukraine during 2011-2015 included the main articles presented in Table 2, the rest of other articles is less than 2.0% of GDP.

Table 2

Expenditure Structure of the General Government Sector of Individual Member States of the EU and Ukraine in 2011-2015, % of GDP

	Including:						**Total**
	Social Protection	Health protection	Education	General state functions	Economic activity	Defence sphere	
EU-28	19.4	7.2	5.1	6.8	4.6	1.5	49.0
EU-19	19.9	7.3	4.9	7.1	4.8	1.3	49.6
Slovenia	18.5	6.9	6.5	6.3	7.1	1.2	51.7
Hungary	17.0	5.2	5.0	9.6	66	0.9	49.5
Poland	16.2	4.8	5.5	5.7	52	1.6	43.7
Czech Republic	13.1	7.4	5.1	5.1	6.3	0.9	42.8
Slovakia	12.4	7.4	4.7	4.9	3.7	1.4	41.0
Romania	12.8	3.8	3.3	4.8	6.7	0.9	37.6
Bulgaria	13.0	4.5	3.6	3.9	5.1	0.9	36.4
Ukraine	*9.1*	*4.0*	*7.0*	*4.2*	*3.8*	*1.2*	*34.0*

Source: 1) Fiscal Space for Public Investment (FSPI): Toward a Human Development Approach, UNDP (2006); 2) Kasperovych Yu., (2015).

*In our time, search for optimal models of stimulation of socio-economic development and revitalization of investment-innovation processes through state consumption (government procurement, state purchases) and tax privileges are relevant for the Ukrainian economy. Tax instruments are actively used in the EU to stimulate research and development (*Alstadsæter A., 2015*).*

*In Ukraine the experience of using social sector and territorial benefits is extremely ambiguous. In the presence of a significant number of benefits, the level of depreciation of fixed assets in Ukraine from 2010 to 2014 increased from 74.9% to 77.3%, and at the end of 2015 amounted to 83.5% (mainly due to transport) (*Cost of fixed assets in 2000-2014*).*

Currently, the main priority is to reduce the number of privileges to ensure the principles of equity in taxation and functioning of the fiscal space. Since 2015, there has already been a significant reduction, for example, abolition of the social privilege rate for miners, eliminating most of the sectored tax exemptions on corporate profit tax (for light industry, shipbuilding and aircraft industry, hotel services, cinematography, machine building for agribusiness and IT industry). At the same time,

preferential rates are deprived of subjects of investment projects in priority sectors of the economy (Performance Indicators of the Budget Program, 2010). From 2016, the program document of Ukraine with the IMF provides for the transition of agriculture from the special to the general VAT regime. Financial and economic calculations prove that at present, such a transition is appropriate only in the part of plant growing. In the EU, the target of agricultural subsidies is targeted budget subsidies, not tax incentives.

However, in many ways Ukraine has implemented leading European experience of fiscal space, including the case of the following aspects:

- Codified budget (2001) and tax legislation (2011);
- The program-target method of planning, medium-term budget forecasting and planning used in the budget process;
- The reform of fiscal decentralization started in 2015;
- The taxation rates of the three major budget-generating taxes correspond to the European level (Khimich K., 2010, p. 255);
- Tax and accounting harmonization in order to tax corporate profits;
- In 2015, the obligation to establish payment processing registries (cash registers) for single tax payers was introduced;
- The launch of pre-governmental procurement in electronic form;
- Open access to the register of real estate;
- Electronic services for taxpayers, including electronic reporting, electronic customs declaration;
- Launched electronic services that ensure transparent public finance system: the system of electronic public procurement ProZorro, portal using public funds, state services portal, visualization execution of local budgets in projects (Klepanchuk O., 2014 p. 254).

At the same time, most of the positive changes require further refinement and development.

The main task of pro-European reforms in the context of creating a favourable fiscal space is to reduce the size of the shadow economy, smuggling and corruption. In the area of responsibility of individual management bodies, solutions to this issue are:

1. Implementation of the agreed concept of reforming the tax system of Ukraine on the basis of a compromise between the Ministry of Finance of Ukraine, the Committee on Taxation and Customs Policy of the Verkhovna Rada of Ukraine and public organizations.
2. Preparation of technical developments for the future implementation in the medium term of European instruments for achieving social justice: bringing property taxation to its market value; indirect methods of controlling income and expenses of individuals; choice of the tax rate for personal income tax depending on the marital status and the number of taxpayer children; extension of the progressive scale of taxation of personal income tax, etc.
3. Further filling up the data and expanding the functionality of the E-service.
4. Transfer all government procurement into an electronic form to achieve savings through reduced transaction costs.
5. Harmonization of procurement procedures according to WTO and EU standards.
6. Decrease of administration costs by taxpayers and fiscal authorities, as well as institutional reform of DFS of Ukraine.
7. Automation and simplification of tax administration through further development of electronic services, in particular, expansion of the functionality of the Internet service «Payer's Account», improvement of the system of electronic VAT administration, publication in the open access of the electronic register of queues of applicants and recipients of budget VAT reimbursement;

8. Reduction of the number of primary documents for recognition of expenses for the purpose of taxation of enterprise profits to one - invoice, signed by two parties to the supply contract.

Nevertheless, systematization of the vectors of fiscal space formation in Ukraine must necessarily take into account tactical and strategic measures, namely (Proskura K., 2010):

a) Improvement of control and verification work by targeting control and law enforcement units to identify tax evasion schemes, their destruction and reimbursement of losses incurred by the state. It is necessary to improve the control and verification work within the framework of anti-crisis measures, which is relevant for the purposes of avoiding excessive pressure on conscientious taxpayers. After all, excessive tax pressure holds back the development of enterprises and deprives entrepreneurial initiative. However, unscrupulous payers need increased attention both through the use of preventive measures to reduce the risk of non-payment of taxes and through the use of more rigid and effective mechanisms.

b) Increasing the efficiency of work of fiscal authorities with tax debt and preventing the emergence of a new one. Repayment of tax debt is one of the significant reserves of replenishment of the state budget.

c) A qualitative increase in the fight against false VAT refunds.

d) Refunds in the shortest time of the lawfully created negative VAT. After all, delays in the reimbursement of such amounts are wasted by working capital of enterprises and their business activity is limited. Particular importance of this measure grows in the context of proliferation of problems with lending to the current activities of business entities.

e) Prevention of outflow of capital abroad and prevention of minimization schemes by means of the following measures: establishment of a limit on consideration of the amount of royalties paid in favour of non-residents and taxpayers who are exempted from paying a tax or paying this tax at a different rate, as well as expenses, incurred in connection with acquisition of non-resident services (works) for consulting, marketing, advertising, and engineering; prohibition on attributing to the profit taxpayer the expenses for the goods (works, services) purchased and other tangible and intangible assets of the sole proprietor paying the single tax; limitation of expenses for the purpose of taxation incurred in relation to non-residents having an offshore status.

4 Conclusions

The conducted research shows that Ukrainian trends of fiscal policy mostly correspond to the main parameters of European countries or they are already developing in this direction. The dynamics of fiscal administration is influenced by political factors. It is proved that the main problems of Ukraine are not in the area of regulation (definition of rates, objects, structure and taxation mechanisms), but related to the efficiency of administration. The shadow economy and corruption must be reduced in a coordinated, gradual and parallel way. Liberal measures to reform the tax system must necessarily be accompanied by an optimization of the expenditure part of the budget with an increase in the efficiency of the use of funds in the public sector. The implementation of European experience in Ukrainian practice is intended to promote a more transparent and equitable redistribution of GDP through fiscal adjustment tools. Reform is a prerequisite for modernizing the Ukrainian economy through structural reorganization to improve the well-being of citizens.

Thus, it can be said that at the present stage, in order to improve the processes of fiscal space formation in Ukraine, the following actions should also become priorities: the establishment of relations between controlling bodies and taxpayers; achieving the highest possible level of voluntary payment of taxes; conducting significant mass-explanatory works; streamlining and automating tax reporting processes and further harmonizing fiscal policy with European standards and priorities.

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Integration of the EU and Ukraine Agricultural Sectors under the Association Agreement: Consequences for the Agricultural Sector of Ukraine

LYUDMYLA SHVORAK[15]

Abstract: This paper analyses key tendencies of the agricultural sector of Ukraine after implementation of the Association Agreement with the EU and integration of the EU and Ukraine agricultural sectors. In particular, the paper deals with mechanisms of integration of the European and Ukrainian agricultural sectors and reflects consequences for the sector volume in Ukraine, amounts and structure of foreign trade, and investment, etc. The article also provides recommendations on further development of agricultural sector of Ukraine.

Keywords: Integration • EU-Ukraine Association Agreement • Agricultural sector of Ukraine • Mechanisms of association implementation

1 Introduction

The agricultural sector of Ukraine has gained new significance for the Ukrainian economy in the context of rapid growth of production and exports during the last decade. At the same time, structural changes caused by political and economic events in Ukraine have significantly increased the importance of the agricultural sector for the country's economy. The agricultural sector has grown in a crisis period in 2014 and has become the leader in terms of export supplies. In addition, the agricultural sector is the one that shows positive dynamics after the Association Agreement between Ukraine and the EU came into force. This, in turn, provides further strengthening influence of the main participants of the agricultural sector on the course of political and economic processes in the country. In this regard, it requires consideration of recent trends in the sector and the prospects of its growth.

2 Literature Review

The essence of the integration mechanism and its impact on structural changes in the economies of countries participants were examined by a big variety of Ukrainian and foreign economists. Particular theoretical aspects were laid down in works of B. Balassa, J. Tinbergen, J. Viner, M. Bor, K. Lancaster, etc. Consequences of economic integration of the EU and Ukraine for particular sectors of the economy of Ukraine were described in works of O. Shnyrkov, I. Burakovskiy, V. Movchan, O. Chugaiev, etc. Main tendencies of agricultural sector of Ukraine are displayed in reports of Ministry of Agrarian Policy and Food and Ukrainian Agribusiness Club.

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3 Basic Results of the Research

Agriculture is one of the leading sectors of the Ukrainian economy with significant natural competitive advantages. The area of agricultural land of Ukraine is the largest in Europe – 41.5 million hectares (70% of the country's territory), of which 32.5 million hectares are used for growing crops. The development of the sector is also facilitated by the proximity of major markets, transport infrastructure, the constant growth of world demand for food and alternative energy, and the availability of relatively cheap labour resources. The sector provides about 12% of GDP, employing more than 3.5 million people (17% of employed in Ukraine). The level of profitability of agricultural production in agricultural enterprises of Ukraine in 2016 amounted to 37.3%.

The main direction of Ukrainian agricultural business is plant growing. Ukraine is one of the world's largest producers and exporters of agricultural products, growing more than 60 million tons of grain and over 10 million tons of sunflower seeds per year. In the structure of gross agricultural production, cereals and leguminous crops, technical crops, vegetables are the most important. Livestock breeding is represented by cattle and poultry farming, milk and egg production.

Ukraine has considerably increased revenues from agricultural exports over the last decade –they have increased almost 4 times as a result of rising world prices for agricultural products, as well as an increase in the volume of exports of agricultural products from Ukraine. The physical volumes of grain exports over the past 10 years have also more than doubled and amounted to 32.3 million tons of grain in 2013-2014. According to preliminary results of 2016-2017, grain and cereal exports amounted to 44.5 million tons, which is by 5 million tons more than in 2015-2016. As of November 2017, the share of export of agricultural products in the total volume of Ukrainian exports is 41.7%. The share in the total exports of agricultural products of cereals is 37.3%, oils – 26.1%, oilseeds – 10%.

Table 1 Foreign Trade in Agricultural Products of Ukraine for January-September 2017[16]

	Total (million dollars)	In % to 2016	Weight in FTT (%)
Export	13070.0	124.3	80.3
Import	3202.5	106.7	19.7
Balance	+ 9867.5	131.3	
Foreign trade turnover (FTT)	16272.5	120.4	100.0

Today, the main markets for Ukrainian agricultural products are Asian and EU countries, with 39% and 29% respectively in the total exports of agricultural products. Due to trade restrictions introduced by Russia there is a tendency to reduce the export of agricultural products to Russia and the countries of the Eurasian Economic Union, especially in the case of ready-made food products with a high added value - meat and dairy products, confectionery, alcoholic and non-alcoholic beverages. The geographical structure of the export of agricultural products in 2017 is as follows: India –11%, Egypt – 8%, the Netherlands – 6.8%, Spain – 6.2%, Spain – 5.5%, Turkey – 4.7%, Italy – 4.3%, Iran – 3.3%, Poland – 3.2%, Belarus – 2.6%.

About 28% of the able-bodied population works in the agricultural sector in Ukraine. An average of 76.5% of rural population is hired workers, 19.2% work as self-employed. By data of the State Statistics Committee, the number of unemployed in rural areas has reached 215.9 thousand people that is 5.7% of general unemployment in Ukraine.

In the budget of 2017, the government of Ukraine provided incentives for development of key economic sectors which are the main investors of the budget. First of all, it concerns agriculture. In 2017, for the support of agricultural producers, including agricultural machinery, UAH 6.5 bln or more than 1% of GDP from agricultural production is foreseen. The total direct budget support for the agricultural sector development is UAH 4.6 billion.

[16]Data of the Ministry of Agrarian Policy and Food of Ukraine - http://minagro.gov.ua/monitoring?nid=19035

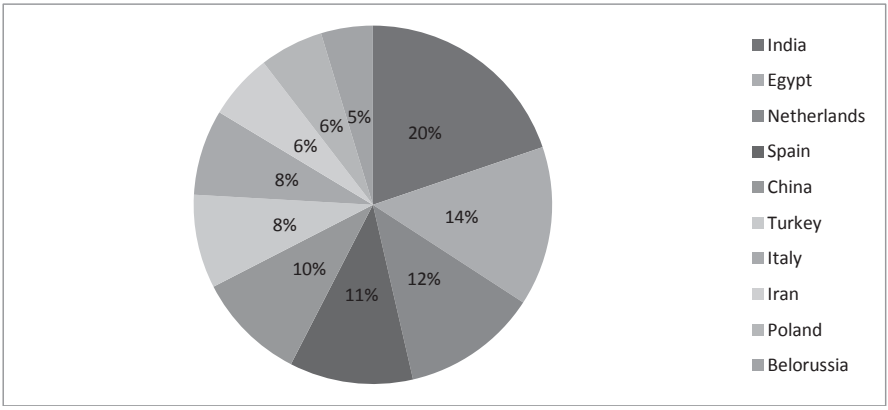

Figure 1. Geographical Structure of Export of Agricultural Products of Ukraine in 2017, in%[17]

Positive conjuncture of world agricultural markets has contributed to the growth of attractiveness of the Ukrainian agricultural sector for domestic and foreign, including from the EU countries, investment. The food industry is especially attractive to foreign investors. Investments in the food industry have almost doubled in recent years and reached $ 3287.2 million or 5.7% of the total volume of foreign direct investment (FDI) in Ukraine. Agricultural enterprises account for only 1.4% of FDI. The volume of capital investment in agriculture, forestry and fisheries in 2017 has increased by 40.6% compared with 2016.

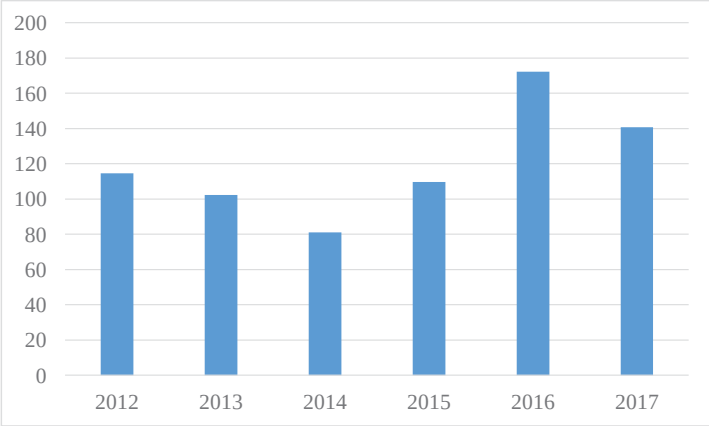

Figure 2. Capital Investment Indices in the Corresponding Year in% to the Previous Year[18]

However, the level of investment in fixed assets of the agrarian sector is still limited and the potential of the sector remains unused. Although the yield of most grain crops in Ukraine is gradually increasing, it lags behind the average European and world figures despite the best conditions for growing grain crops in Ukraine. The main barriers to investment in agriculture today include:

- *An unstable, unpredictable and nontransparent government policy characterized by the lack of uniform rules of the game for all producers and sectors, excessive government intervention in*

[17]Data of the Ministry of Agrarian Policy and Food of Ukraine - http://minagro.gov.ua/monitoring?nid=19035
[18]Data of the Ministry of Agrarian Policy and Food of Ukraine - http://minagro.gov.ua/monitoring?nid=19035

the agrarian markets (in particular, it concerns export restrictions and export quota allocations, price regulation for certain types of agricultural products, sectoral taxation systems, etc.), *lobbying individual interests in order to obtain a monopoly rent*. Such a policy creates an unfavourable investment background in the sector, which impedes the receipt of long-term investment. The permanent prolongation of agricultural market land introduction preserves the old inefficient land use system and holds back the development of the sector.

- *Insufficient financing of agriculture, low lending to the sector compared to similar countries.* Complicated access to bank loans and resources of international financial organizations. According to polls, about 75% of Ukrainian agricultural companies called the poor access to financing one of the main obstacles for further expansion and investment. The main source of financing among agricultural enterprises remains internal self-financing from profits and personal savings. While the possibility of external financing through bank loans is very limited for agricultural producers. About half of the producers should sell 80-100% of the new crop immediately to provide working capital.
- *Lack of efficient and affordable infrastructure for agricultural markets.* In particular, the shortage of quality facilities for storage and handling of grain is estimated at around 21 million tons. Small and medium enterprises are particularly vulnerable to access to infrastructure and logistics facilities, which are concentrated mainly in large agricultural holdings. This significantly limits the opportunities to export for small and medium-sized businesses.
- *Ineffective government policy to support exporters*. The main obstacles on the way of Ukrainian agrarian product exporters (first of all, small and medium businesses) are: non-compliance of Ukrainian standards with the European and international ones and the low quality of manufactured products; insufficient information about the features of the target export markets; low awareness of small agricultural producers about export opportunities to EU markets; lack of state programmes and institutions for the development of agricultural exports; burdensome customs procedures and corruption at the customs, undeveloped market infrastructure and logistics problems; and inefficient agricultural insurance system.
- *Vulnerability of the current model of business functioning of large agricultural holdings.* It depends on changes in the external conditions. They need to service debts (external borrowing) and land ownership is not legalized properly. Today there is deterioration in the financial situation among the most powerful agricultural holdings in Ukraine manifested in the decrease in value of their share in foreign stock markets and deterioration of access to credit resources both on external and domestic markets. The reasons for this situation lie in the current fall in prices, in particular for corn and wheat in world markets. The situation also worsens the lack of opportunities for Ukrainian holdings to use land as mortgage.

Agriculture is the only industry that is completely liberalized, but at the same time, may undergo major changes as a result of the establishment of the Free Trade Area with the EU. The Association Agreement stipulates that Ukraine and the EU will cooperate to promote agricultural and rural development, in particular through gradual convergence of policies and legislation. In this context, cooperation between Ukraine and the EU is foreseen in the legislative and executive spheres between national, local and non-governmental bodies aimed at introducing best practices in the field of agriculture, ensuring the efficiency and transparency of markets in the countries-parties of the agreement, and homogenizing the positions of the parties at the international level.

Technically, cooperation takes place firstly – by changing regulatory acts of Ukraine in accordance with similar EU regulatory acts; secondly – removing a number of tariff and non-tariff barriers in trade in agricultural products between the parties; and thirdly – through organizational cooperation at different levels regarding exchange of best practices and introduction of quality control schemes in Ukraine similar to those in force in the EU.

Ukraine took an obligation to change 44 regulatory acts in the field of agriculture and to bring them in accordance with the EU norms within 10 years after the entry into force of the Agreement. Harmonization mainly concerns the safety and quality of food products, maximizing consumer interests, creating transparent conditions for conducting economic activity and increasing the competitiveness of domestic agricultural products. However, the impact on development of agriculture will have not only sectoral legislation but also horizontal normative acts, in particular, legislation in the field of competition, taxation, corporate law, accounting and auditing, environment, technical regulation, customs legislation, etc.

In regard of timing of implementation of changes in these areas, the consequences of such changes will become noticeable in 6-7 years. Changing Ukrainian legislation in line with similar EU regulatory acts will have consequences for creating conditions for doing business and state of administration of agriculture in Ukraine, approximating to the conditions in the EU, stimulating the inflow of investment to the agricultural sector of Ukraine, and facilitating the mutual access of agricultural products to the markets of the countries that the parties are to the deal.

On January 1, 2016, an agreement on a Deep and Comprehensive Free Trade Area (DCFTA) between Ukraine and the European Union entered into force. The temporary application of the economic part of Section IV of the Association Agreement (covering the Deep and Comprehensive Free Trade Area) began unilaterally on April 23, 2014, i.e. Ukraine had the right to use quotas for duty-free export of products to the EU, herewith the EU countries supplied products in Ukraine in general terms. It was only from January 2016 that the Agreement began to operate bilaterally.

The annexes to the Agreement fully describe the tariff regulation of trade between Ukraine and the EU. The system of regulation includes: duties, tariff quotas, and the input price. The customs duty is levied by the EU customs authorities when goods are brought to their market. For most agricultural products, the import duty from Ukraine to the EU was abolished from January 1, 2016, under the Association Agreement. For each product, there is a basic import duty rate and a transitional period, which refers to the length of time during which the rate of duty will be directly reduced or completely cancelled. The base rate of duty also applies to products whose export quota has been fully utilized and will continue to be exported beyond the quota volume.

Tariff quota is a two-tier customs tariff related to the quantity of goods in which a given quantity of goods can be exported/imported at a ‘preferential’ or ‘zero’ rate of duty during a certain period of time (‘quota rate within the quota’). After filling in the tariff quota, companies can continue to export/import the product without restrictions, but pay a higher tariff rate (‘duty rate outside the quota’).The administration of EU tariff quotas is carried out exclusively by the European Union (the corresponding directives of the European Commission) on two principles:

- ‘First come - first served’ – registration of import of goods within the tariff quota occurs depending on the availability of unused balance of the relevant quota at the time of submission of supporting documents. Moreover, the first is the one whose accompanying documents came first.
- ‘Import licensing’ – importers of Ukrainian products submit a relevant application for the right to import to the Directorate General of the European Commission ‘Agriculture and Rural Development’. At the same time there are restrictions on the time during which companies can reserve the appropriate volume of quotas.

The import license is used for the following products: beef, poultry meat and poultry products (basic and supplementary), pork (main and additional), eggs and albumins (main and supplementary), butter and milk paste, milk powder, milk, cream, condensed milk and yoghurts, soft wheat, wheat flour and granules, corn, corn flour and granules, barley, barley flour and granules. The following products are exported according to the ‘first come - first served’ principle: barley cereals and flour, cereals, processed by other means, processed products from cream, products from processed milk, processed

products from cereals, malt and wheat gluten, mushrooms (main and additional quota), processed products from sugar, bran, waste and residues, food products, cigars and cigarettes, processed starch, processed oil products, malt and starch processing products, grape and apple juices, lamb meat, processed tomatoes, sweet corn, another sugar, sugar syrup, sugar, oats, garlic, honey, and ethanol.

The input price is a unified procedure based on the definition of prices in the domestic market, on the basis of which all subsequent customs payments are calculated. All fruits, vegetables, natural juices, as well as wine from all countries outside the EU are cleared by this scheme. Under this system, the duty consists of a general rate and an additional customs duty, the amount of which depends on the fact that the price of the product is lower than the established EU rate. Ukrainian goods have a preferential exemption from the payment of the basic duty. Thus, only the difference in price is charged whereas the base fee is not charged.

Organizational cooperation at different levels on the exchange of best practices and the introduction of quality control schemes similar to those in force in the EU is aimed at achieving compliance of Ukrainian products with the requirements of the EU food law. The cooperation within the Agreement is aimed to achieve the following:

1. Harmonization of Ukrainian and European food legislation.
2. Compliance of the activities of Ukrainian control bodies on food safety with the European requirements regarding the activities of such bodies.
3. Compliance of market operators with the requirements of harmonized legislation.

Under the conditions of harmonization of the regulatory framework in the field of agriculture, the EU automatically recognizes the quality of Ukrainian products based on documents issued by Ukrainian controlling bodies. However, the following requirements have to be met:

- Food Law of Ukraine is equivalent to the EU Food Law;
- Clearly defined powers of control bodies of the country (may be limited to individual products);
- Ukraine's control body is responsible for contacts with the EU;
- Inspection bodies should provide skilled personnel and equipment for checking.

As long as the process of harmonization is not completed, the EU (the European Food and Veterinary Office (FVO)), will independently check the companies that have the intention to export their products to the EU. Currently, the verification process is carried out by enterprises that produce fish products, honey, cereals, dairy products, poultry and pork. The EU should have grounds for recognizing animals as originating from disease-free zones and plants from areas free of pests and harmful organisms. For this reason, the Ukrainian side should ensure the regionalization or zoning of livestock and crop production in accordance with international standards. Obtaining and maintaining this status is a prerequisite for exporting products from these areas/regions to the EU.

In other words, in order to gain access to the EU markets, companies need to have a system of food safety and quality assurance based on Hazard Analysis and Critical Control Points (HACCP) procedures, a system that identifies, assesses and controls hazardous factors that are important for product safety. As part of this system, the whole chain of production of processing and transporting products from field to table is checked. The introduction of this system will not only increase the volume of agricultural exports to the EU but will also increase labour productivity in the agrarian sector, competitiveness of Ukrainian producers in international markets and competition in the domestic market, which will bring benefits to foreign and domestic consumers.

4 Conclusions

Generally, signing the Association Agreement between Ukraine and the EU ensured growing of the Ukrainian agricultural sector. This is evidenced both by the direct indicators of the sector and by

the structural changes taking place in the Ukrainian economy as a whole. At the same time, the raw material orientation of Ukrainian exports makes Ukraine's position on the external markets vulnerable, since the demand and prices for commodities are characterized by significant volatility. Therefore, it is necessary to ensure an increase in exports of Ukrainian goods with high added value. The factor of increasing agricultural exports with high added value in the EU is to increase the requirements for the safety and quality of food and raw materials through introduced quality management systems and food safety management systems at enterprises.

The implementation of the Association Agreement between Ukraine and the EU is to become an effective tool for improving the terms of trade with the EU and the work of the agricultural sector in general. The EU has already abolished tariff restrictions on the export of most Ukrainian agricultural products to the EU, though tariff quotas (cereals, pork, beef, and poultry) have been introduced for some positions. At the same time, the abolition of the overwhelming share of non-tariff restrictions for Ukrainian export of agricultural production requires appropriate transformations of Ukrainian regulatory legislation. For this reason Ukraine has to adapt to EU standards in areas such as sanitary and phytosanitary measures, certification and metrology, customs clearance, market surveillance, conformity assessment. Adapting agrarian policy standards with transparent and predictable regulatory rules will improve the investment climate and the investment attractiveness of the agrarian sector of the economy for European partners.

The significant potential of agrarian sector is also connected with the possibility of cooperation of agricultural producers of Ukraine and the EU in production chains and sales channels. This will increase the productivity of the agrarian sector by transferring advanced technologies and practices of the EU, increasing the scope of activities in the production and processing of agricultural products, and improving the access conditions to world markets.

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International Regulatory Cooperation in the Sphere of Labour Migration within the Commonwealth of Independent States: Ukraine and the Russian Federation Issue

NATALIIA SYNKOVETS[19]

Abstract: the purpose of this article is to understand how the international regulatory cooperation in terms of the labour migration is carried out on the level of the Commonwealth of Independent States and on the level of bilateral relations of Ukraine and the Russian Federation. In the paper the focus was made on the stages of development of the union and the regulatory cooperation instruments that were elaborated in this field.

At the same time, policy of foreign labour force employment in both countries was observed indicating the main agreements and legislative acts regulating this issue. The current overview considers the way international regulatory cooperation facilitates the work force movement of Ukrainian labour migrants to the Russian Federation as one of the main recipient countries of the foreign work force in the Commonwealth of Independent States.

Keywords: Migration policy • Labour migration • International regulatory cooperation • Regulation norms • Commonwealth of Independent States

1 Introduction

Regulation of migration processes is one of the most crucial issues for the members of the Commonwealth of Independent States. The common history of many decades, cultural ties of people, and absence of language barriers in communication have created the profound foundation for the active movement of people within the association. Since Ukraine is one of the actors here the Russian Federation has always been and still remains one of the main recipient countries for Ukrainian labour force. The basic driving force of migration within the territories of the members of the Commonwealth of Independent States (hereinafter – the CIS) is social economic motivation for the migrants and the possibility of future gains. Migration (and labour migration in particular) is regarded to be one of the main factors effecting economic and social development of the CIS member states. Strategic goal of the migration policy in the association is migration process regulation aimed at development of intellectual and labour potential of migrants in order to ensure sustainable growth of the economies, social and demographic development of the Commonwealth countries for the long-term perspective, strengthening the security policy, ensuring the rights and freedoms of migrants. One of the most vital issues arising in the process of integration lies in the framework of development of an effective mechanism of regulatory cooperation.

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2 Literature Review

Migration is one of the most analysed topics currently both by foreign scholars and by Ukrainian. In this article the focus was made on the regulatory cooperation carried out by the countries in terms of labour migration. In preparing the material we relied on the papers and works of such foreign scientists as: M. Rozanova, V. Iontsev, S. Riazantsev, S. Zinkovskyi, E. Tailor, J. Brock, Messi D., Robert E., Okolski M, H. Pelerin, F. Tongeren etc.

Among Ukrainian researchers significant contribution to the study was made by O. Shnyrkov, A. Filipenko, R. Stakanov, A. Shevchuk, V. Voloh, M. Vidyakina, L. Rybakovskii, A. Gaidutskyi, etc.

Taking into account the specific chosen topic, national legislation acts, international bilateral and multilateral agreements, and other legislative instruments were analysed.

3 Basic Results of the Research

Constitutive documents of the CIS such as the Agreement Establishing the Commonwealth of Independent States, known as the Creation Agreement (December 8, 1991), Protocol to the above mentioned Agreement (December 21, 1991), Alma-Ata Declaration (December 21, 1991) contain an important provision that the sphere of the joint activity of the CIS members, which is provided on an equal basis through joint coordinating institutes in accordance with the commitments made by the member states within the framework of the association, includes migration policy issues (Commonwealth of Independent States). As it is stated in the Strategy of Economic Development of the Commonwealth of Independent States for the period up to 2020, in spite of a number of positive results in the field of economic cooperation, the Commonwealth has not yet been able to develop a common economic space based on the market relations and the free movement of goods, services, capital and labour.

For a relatively short period of time the legal framework for cooperation of the Commonwealth member states in the sphere of labour migration was created. Multilateral agreements establishing procedure for the entry of citizens of the member states into the territory of the recipient state and regulating the right to freedom of people movement on the territory of the CIS were developed and adopted; special agreements on labour protection and social security were introduced; bilateral agreements on general issues of labour migration, as well as labour and social protection of foreign workers.

The Agreement on Cooperation in the Field of Labour Migration and Social Protection of Migrant Workers (April 15, 1994) and the Protocol on the Amendment to this Agreement (November 25, 2005) have played an important role in protecting labour rights of the foreign citizenson the international level. Provisions of this Agreement are based on the United Nations human rights instruments and principles developed within the framework of the International Labour Organization (ILO) (Vistak, 2014). Most of its provisions coincide with the mentioned provisions of the bilateral agreements on employment and social protection of citizens including Ukraine .High attention is also paid to the norms of legislation of certain countries regarding determination of the qualification of employees, age and other requirements. This agreement also covers the issue of workers entering the territory of the State of employment, staying and leaving; preparation of an employment contract; rights, obligations and social benefits of a labour migrant etc. Other vital stipulations concern economic aspects, in particular, the order and amount of taxation of labour income (contracting states have agreement on avoiding double taxation). At the same time, social aspects such as social insurance and social security are considered, unless otherwise provided by a special agreement; health care; compensation to the employee for damage caused by injury, occupational diseases or other damage to health related to the performance of the labour duties, unless otherwise provided by a separate

agreement; transfer of the earned funds to the territory of the departure state (Vistak, 2014).

The multilateral intergovernmental agreements regulating the process of labour migration also include Convention on legal status of migrant workers and members of their families of the State Parties of the Commonwealth of Independent States (2008), Agreement on the guarantees of the rights of citizens of CIS countries in the field of pension (1992), Agreement on the guarantees of the rights of citizens in the field of social payments (1994) (Ministry of Social Policy of Ukraine, 2014, p. 6).

Regulation of the process of migration within the CIS passed through four stages. The first stage of interstate cooperation stems from the collapse of the USSR and creation of the CIS on the basis of multilateral agreements for instance Agreement on Visa-free Movement of Citizens of the CIS members within the CIS (Bishkek Agreement, 1992) and Agreement on mutual recognition of visas of the Parties of the Commonwealth of Independent State (Moscow Agreement, 1992).

The second stage in the regulatory cooperation marked the transition from multilateral cooperation of the CIS countries to bilateral agreements between member-states, and special measures taken against illegal migration.

The third stage was connected with transition to regulation on the basis of interstate associations, since migration is regarded to be a factor of integration and a connecting element of CIS countries. Taking into account that labour migration has become an important tool towards adaptation and search of the wealth for population under the new economic conditions, that could mitigate the negative effects of the social economic reforms, regulation was carried out on a multilateral basis within the framework of interstate associations such as Eurasian Economic Community.

The last stage derived from providing the simplified visa regime by the member states. In March 2005, members of the Eurasian Economic Community signed the Protocol to the Agreement that further simplified the border crossing regime for the participating countries. Certain steps in this direction were taken by the Commonwealth states and the European Union.

Notwithstanding the fact that for the last few years Ukrainian labour migrants tend to migrate and search for jobs mostly in the European Union countries (such as Poland, the Check Republic, Hungary etc.) the Russian Federation still doesn't lose its positions as the recipient country for Ukrainian work force. The same situation is observed in the migration flows in the CIS. The leading stand and high attractiveness of Russian Federation could be determined by the number of factors:

- favourable geographic position of the Russian Federation, which occupies 42% of the total area of Europe and 29% of the territory of all Asia;
- similar border, geoclimatic conditions and ethno-cultural traditions;
- relatively favourable visa policy implemented by the Russian Federation, the current visa-free regime and simplified procedure for entry for citizens and stateless persons from the vast of the CIS and some other foreign countries;
- common history background as the former Soviet republics;
- large capacity of the labour market in a number of economic industries.

During the last 20 years, the migration flows towards Russian Federation have compensated more than a half of the natural population decline, thus taking into account the current demographic situation, migration is one of the main actual sources of combating the shortage of labour force. Migration attractiveness of the Russian Federation in comparison with other recipient countries of labour migrants is low and extends mainly to the citizens of the CIS.

One of the main problems is illegal migration. Liberalization of visa regime and 'transparency' of the state borders have led to the sharp increase of its scale, at the same time, the majority of legal foreigners entering Russian Federation, subsequently shift to the category of illegal migrants.

It should be noted that the current migration legislation of the Russian Federation does not allow to ensure the effective regulation of migration processes in the country at the maximum extend, the necessary decisions in this field are often taken situationally without proper conceptual analysis.

Currently, the Russian migration legislation embraces more than a dozen federal laws, hundred decrees of the President, decrees and orders of the Government, regulations of ministries and departments, as well as a number of intergovernmental and interstate agreements. The rules of entry and residence for foreign citizens in the country, as well as the employment procedure are governed primarily by the "The Concept of the State Migration Policy of the Russian Federation For the Period till 2025", by federal laws "On the Procedure for Exit from the Russian Federation and Entry into the Russian Federation" (August 15, 1996) and "On the Legal Status of Foreign Citizens in the Russian Federation" (July 25, 2002) (Mamontova, 2013, p. 77).

According to the border statistics, Ukrainians take the leading role among the foreign citizens who live and work in the Russian Federation. About 6 million people annually arrive from Ukraine with long-term and short-term goals. Migration exchange between these two countries is characterized by the highest intensity. According to the World Bank, the migration routes in this corridor (Russia – Ukraine and Ukraine – Russia) are the second and third largest (after Mexico – the United States).

Labour migration is carried out under conditions of the recent experience of common citizenship, cultural similarity, and absence of language barriers, where a lot of migrants continue to consider migration to Russia as an internal movement.

Number of migrants in the period 2014 – 2017 in the corridor Ukraine – Russia, Russia – Ukraine

	2014	2015	2016	2017
From Ukraine to Russia	~6 mln.	4,6 mln.	~2,5 mln.	~2,3-2,5 mln.
From Russia to Ukraine	2,36 mln.	1,33 mln.	~1,5 mln.	~ 1,4 mln.

Official data on the number of Ukrainian migrant workers in the Russian Federation are not available. However, according to various sources, this number is up to 40% of the total. In 2014, more than 6 million Ukrainians visited Russian Federation, in 2015 – over 4 million. According to the data of the Main Department on Migration of the Ministry of Internal Affairs, in 2016 there were approximately 2.5 million Ukrainian citizens with1.9 million people of working age (from 18 to 59 years old). The quantity of foreign workforce started to shrink mainly because of the economic crisis (it became much more difficult to find a job in the Russian Federation). At the same time, we observe intensification of migration movement towards the EU countries.

Regulatory cooperation in the field of labour migration between Ukraine and the Russian Federation is carried out on the basis of a number of bilateral and multilateral agreements. For instance there is Agreement between the Government of the Russian Federation and the Government of Ukraine on Labour and Social Protection of Citizens of Russia and Ukraine who Work beyond the Borders of their States (January 15, 1993) that is still in force. This agreement shall apply upon the workers and members of their families who are citizens or permanently reside on the territory of one of the countries but carries out employment activities on the territory of the other country. The labour activity of an employee is executed on the basis of the contract that was concluded with an employer in accordance with the labour legislation of the country of employment. The agreement regulates the mutual enrollment of work experience, social and pension provision acquired on the territories of both states (Verkhovna Rada Ukrayiny, 1993).

On January 16, 1997 the Agreement between the Government of the Russian Federation and the Government of Ukraine on visa-free travel of citizens of the Russian Federation and Ukraine came into force, according to which citizens of one country may enter, leave and move through the territory of the other country without a visa. In conformity with this Agreement citizens of both States on the basis of reciprocity are exempted from registration at the competent authorities at the place of their stay, if the period of such stay does not exceed 90 days. However, the Cabinet of Ministers of Ukraine adopted the Resolution on the Suspension of certain provisions of this Agreement in 2015. First of all,

it relates to the list of documents required for entering the country. According to it, citizens of the Russian Federation can no longer use an internal passport and birth certificate indicating their citizenship of the Russian Federation when crossing the border (Verkhovna Rada Ukrayiny, 2015).

There are also a few regulations that are not effective currently due to various circumstances. For instance, on July 18, 2003 the Ministry of Internal Affairs of the Russian Federation and the State Committee of Ukraine on Nationalities and Migration concluded an Agreement on cooperation in the field of migration, however, the Committee was reorganized and subsequently its functions were entrusted to the Ministry of Culture of Ukraine and the agreement became not valid any more.

Within the framework of multilateral agreements, the Agreement on cooperation between the Ministries of Internal Affairs on the return of minors to their state of residence (September 24, 1993) and Convention on Road Traffic (November 08, 1968) remain valid. It is important to mention another regulatory tool – the Agreement on Foundation of a Single Economic Space (September 19, 2003) which was aimed at creating a common market for goods, services, capital and labour force and services for Belarus, Kazakhstan, Russia and Ukraine. However, despite the fact that Ukraine ratified the Agreement in 2004, the obligation to establish a single supranational coordinating body, implementation of a unified foreign trade policy, provision of common customs tariffs, unification of trade regimes of the member states in relation to the third countries, threat to European integration plans and a number of other provisions became the reason that Ukraine refused to enter the Union within the framework of the Single Economic Space.

Thus, the vast majority of the regulatory instruments developed in the past is valid currently despite the hard political situation and tense relations between the countries.

Shifting focus towards the Russian Federation it should be mentioned that this country is characterized with a complex migration system with various regimes of migration policy in particular for CIS countries, members of the Eurasian Economic Union, and other countries, which complicates the process of migration flow regulation. Since 2007 the issue of legalization of migrants and regulation of labour activity has become one of the biggest priorities; whereas quoting of foreign labour force has become the main mechanism of regulation, although not the most effective one. The quota system should be determined by regions, professions, and qualifications of migrant workers, and it is not applied to the citizens of the CIS countries and Ukraine in particular.

Regulation of foreign work force employment varies depending on the migrant category they belong to:

- foreign students of full-time education;
- employees of branches, representative offices and subsidiaries of foreign trade organizations;
- highly skilled specialists;
- citizens who arrived to the Russian Federation without an obligation to obtain a visa on the basis of a patent;
- citizens who arrived to the Russian Federation with an obligation to obtain a visa.

Citizens of Ukraine for the purpose of employment do not need a visa. As other citizens of the CIS countries, they are required to receive a patent which is valid for the period of up to 12 months (Ministerstvo Vnutrennih Del Rossiiskoi Federacii).

As for Ukraine, regulation of entry, departure, stay and employment is carried out and controlled by the relevant institutions, laws and regulations. In this context the most vital are the laws “On the Legal Status of Foreigners and Stateless Persons” (2012), “Employment of the Population” (2013), “On Amendments to Some Legislative Acts of Ukraine on Eliminating Barriers to Attracting Foreign Investments”, “On Immigration” of 2001, the Concept of the State Migration Policy, the Strategy of the State Migration Policy of Ukraine for the period up to 2025 (Vistak, 2014).

To enter the territory of Ukraine citizens of the Russian Federation must have a biometric passport, since January 2018 the regime of enhanced control over the move of foreigners and stateless

persons enters into force in accordance with the Decree of the President of Ukraine (Prezydent Ukrayiny, 2017).

In order to be employed, an employee must obtain an employment permit for foreigners and stateless persons provided he submits to the territorial authority of the central executive authority, which implements the state policy in the field of employment and labour migration.

4 Conclusions

International regulatory cooperation is the process that may exist both on the level of cooperation of two or several countries and on the level of integration associations. After careful analysis of the phases of development of Commonwealth of Independent States it should be mentioned that the countries have concluded a number of agreements aimed at facilitating and encouraging migration of people within the union. However, the effectiveness of the organization may be argued. A number of regulations are still valid and are effective for Ukrainian migrants as well.

Regulatory cooperation in the frame of work force migration is carried out between Ukraine and the Russian Federation. The existing laws and agreements encourage labour force to use the visa free regime between the countries. Nevertheless, the migration policy towards citizens of the Russian Federation eager to enter Ukraine has moved towards new administration barriers such as the requirement to have a foreign biometric passport whereas citizens of Ukraine still may enter the Russian Federation with an internal passport in accordance with the relevant agreement. New entry policy towards the Russian Federation may be considered as the special measures aimed at protecting country borders.

In terms of employment procedure the policy is rather simplified: Ukrainian labour migrants must receive a patent and provide local authorities with the necessary documents including medical certificate confirming the absence of infectious diseases, a document confirming the level of Russian language fluency, knowledge of Russian history and the basics of legislation of the Russian Federation, an employment contract and some others. At the same time Ukrainian employers don’t require medical certificates, diploma of higher education or filling the patent, only the employment contract, application form, passport and photos. After the procedure the labour migrant is entitled to stay and work on the territory of Ukraine up to 1 or up to 3 years (depending on the category of the migrant) whereas the patent in valid only up to 12 months and may be renewed (Verkhovna Rada Ukrayiny, 2013). We may conclude that the regulatory cooperation encourages Ukrainian migrants to still move to the Russian Federation with the purpose of employment despite the deteriorated relations between the countries.

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The Impact of Economic and Financial Variables on the World Sustainability Index

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Abstract: The present paper investigates how the World Sustainability Index is affected by economic and financial considerations. For the purpose of the survey, a GARCH model, which incorporates monthly prices for the period from January 2000 to June 2017, is employed. The World Sustainability Index is the main variable (dependent), whereas the EUR/USD exchange rate, the dollar exchange rate against other currencies (TWEXBMTH), France CAC 40 Stock Market Index, as well as the German Stock Exchange Market Indices (DAX) are the independent variables. The results demonstrate that the World Sustainability Index is positively affected by stock markets, whereas the rates of euro-dollar exchange and dollar against other currencies are negatively affected. The resulting conclusions provide vital information to investors in relation to decision making processes.

Keywords: Dow Jones Sustainability World • GARCH • Exchange Rate • Stock Market

1 Introduction

The Dow Jones Sustainability Index (DJSI World) developed by RobecoSAM and S&P Indices is one of the world's leading investment platforms which focus on sustainable development, which implies balance in the environment, economy and society (Murphy, 2012). Sustainable development has various benefits for customers, the environment and companies (Eikington, 1994). Typically, socially responsible companies appear to increase profits (Murtala, 2017). In the annual RobecoSAM Corporate Sustainability Assessment (CSA), which is the backbone of the Dow Jones Sustainability Index World (DJSI World), participated over 2,500 industry-specific companies with economic, social and environmental criteria. From each industrial group, 10% of the highest ranked companies and their indices form the global index of Dow Jones Sustainability World (DJSI World), which is the most reliable global indicator focusing on long-term benefits with financial, social and environmental criteria. Thus, in terms of financial criteria, investors need all the information for their future investment to minimize risk and maximum expected return (Markowitz, 1952). Social criteria are also significant as global networking creates a strong interdependence between companies and consumer

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groups worldwide (Eric Breen, Head of Responsible Investing, and Robeco Group). An additional determinant in relation to investment decisions is environmental change. According to a research on global availability of water carried out by McKinsey and the International Finance (IFC, a subsidiary of the World Bank), water shortages will come to 40% by 2030, which will increase prices for energy, food, water and commodities eventually. Long term company participation in the DJSI World has a positive impact on company image and status (Hawn et al., 2017).

The present research investigates the impact of the DJSI World and the EUR/USD exchange rate, TWEXBMTH, CAC 40 and the German Stock Exchange Index (DAX) which are defined as the research independent variables. In detail, the EUR/USD exchange rate and the dollar against other currencies were defined as independent variables, as exchange rates are typically a source of uncertainty and risk for internationally traded companies (Jorion, 1990). However, there is no strong correlation between exchange rates and stock prices in the relevant literature. According to Tsagkanos and Siriopoulos (2013), the US stock exchange rates had a short-term impact on listed companies, whereas Bahmani-Oskooeea and Sohrabian (1992) stated that there is no long term correlation between stock prices and exchange rates. Soenen and Hennigan (1988) suggest that the dollar exchange rate and the US stock market are negatively correlated. Ibrahim and Aziz (2003) also found that the devaluation of main currencies result in a decline in stock prices. Joseph (2002) makes a distinction between import- and export- based companies. In both cases, stock prices are affected by potential changes in exchange rates in various ways. Any currency devaluation has a positive impact on export-based enterprises and a negative one on import-based ones (Tsai, 2012). Chengdong & Quan (2015) make a distinction between companies based on commodities. According to their research on Chinese companies, it was demonstrated that companies trading in textiles, pharmaceuticals and general machinery are affected by exchange rates in the long run, whereas companies trading in paper, real estate, air transport, iron and steel, and petrochemicals are strongly affected by exchange rates.

The other variables employed in the research were the French and German Stock Markets. Overall, stock markets have a high impact on global growth (Kirunkabes et al., 2012) and are the best finance forecasting indicators (Abbas et al., 2016). The stock market crash in 1987 highlighted stock market consolidation (Sariannidis, 2008). Von Furstenberg and Jeon (1989) maintain that the correlation of the US, Japanese, and German stock markets was higher after 1987. A great number of surveys demonstrated that the major stock markets have a profound impact on less powerful ones (Agmon, 1972; Panton et al., 1976; Koch and Koch, 1991; Knif and Pynnonen, 1999; Tay and Zhu, 2000; Dekker et al., 2001). The present research was based on data from the French and German stock markets, as most of the companies that trade in these markets are international and many of them have been included in the DJSI World.

2 Data Description and Variables

The present research includes data from 2000 to 2017 of the monthly prices of the Dow Jones Sustainability Index (DJSI World), the EUR/ USD Exchange rate, the France CAC 40 Stock Market Index and the German Stock Index (DAX). It is also based on the dollar exchange rate against other currencies, which are US strategic partners (TWEXBMTH). The returns on investment figures are defined as the natural logarithms of prices:

$$R_t=\ln(P_t/P_{t-1})$$, where P_t: price at date t
P_t: price in the previous time period t-1

DJSI WORLD is the dependent variable, whereas CAC, EURUSD, DAX, and TWEXBMTH are the independent variables.

3 Methodology

Table 1 demonstrates the statistical measures of the independent variables. The basic assumption of zero means cannot be rejected at the significance level of 5%, as the means of the 4 variables are almost zero. Positive asymmetry is exhibited in the TWEXBMTH variable, whereas the CAC40, DAX and EUR/USD variables exhibit a negative one. All variables are leptokurtic due to positive kurtosis. The Jarque-Bera test demonstrated that, in all variables, residuals are not normally distributed. In terms of the Augmented Dickey-Fuller (ADF) test, the results demonstrated that all time series are stationary.

Table 1. *Statistical measures*

Variables	CAC	EURUSD	TWEXBMTH	DAX	
Mean	−0.00072	0.0006054	0.000273714	0.002723	
Median	0.008358	0.0012197	−0.000326312	0.009841	
Maximum	0.125882	0.0960907	0.064223371	0.193738	
Minimum	−0.19225	−0.10196	−0.033102802	−0.29333	
Std. Dev.	0.051623	0.0298123	0.012374874	0.06213	
Skewness	−0.62285	−0.215239	0.621889933	−0.95047	
Kurtosis	0.872011	1.0491945	2.678042574	3.155951	
Jarque-Bera	53,200925	34,920874	14,443143	31,831569	
ADF	−13.2143	−14.25848	−9.394109	−13	
Observations	210	210	210	210	

Table 2 shows the statistical descriptive measures of the DJSI World dependent variable. Kurtosis is 3.800903 and standard deviation is -0.702066; thus, distribution returns are leptokurtic and negatively asymmetrical. The mean is -0.001762, which implies that the null hypothesis cannot be rejected at 10%. According to the Jarque-Bera (JB) test, distribution is not normal.

Table 2 Descriptive Statistics measures - DJSI_WORLD

Mean	0.001762
Median	0.009433
Maximum	0.119686
Minimum	−0.132054
Std.Dev.	0.042842
Skewness	−0.702066
Kurtosis	3.800903
Jarque-Bera	22.86403
Probability	0.000011

As shown in Table 3, the results of the Augmented Dickey-Fuller (ADF) test demonstrated that the DJSI World is stationary.

Table 3 Augmented Dickey-Fuller Test

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		**−9.394109**	**0.0000**
Test critical values	1% level	−2.576073	
	5% level	−1.942353	
	10%level	−1.615688	

Considering the above preliminary analysis results, the model employed in this empirical analysis is GARCH (1,1) GED. The GARCH (Generalized ARCH) model, which was developed by Engle and Bollerslev (1986), allows the conditional variance of the error term σ2t to depend on the

lagged variance terms (σ2t-1, σ2t-2 etc). The GARCH model for the conditional variance can be considered an ARMA model. The simplest form of the model is shown below:

$$\sigma_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2 + \beta\sigma_{t-1}^2 \text{ GARCH (1,1)}$$

The present research was based on the GARCH (1,1) Generalized Error Distribution GED model, which is based on the generalized error distribution (GED), a special case of which is normal distribution. GED, which includes parameters to define tail behaviour and, thus, determines leptokurtosis, involves a wide group of distributions and can describe a number of financial time series, in particular, equity. The probability function for GED residuals is as follows:

$$L_t = -\frac{1}{2}\ln\left(\frac{\Gamma(1/3)^2}{\Gamma(\frac{3}{\nu})(\frac{\nu}{2})^2}\right) - \frac{1}{2}\ln\sigma_t^2 - \left(\frac{\Gamma\left(\frac{2}{\nu}\right)\left(y_t - x_t' B\right)^2}{\sigma_t^2\Gamma\left(\frac{1}{\nu}\right)}\right)^{r/2}$$

where: x'tB is the coefficient matrix of medium equation, Γ(´) is the Gamma function, and ν is the parameter that adjusts the width of the tails.
If ν = 2, there is normal distribution.
For ν < 2, the distribution tails are greater than those in normal distribution.
On the other hand,
(if ν > 2), the distribution tails are smaller than the number in normal distribution.
According to Table 4, which shows the results of regression, function (1) is:

$$\text{DJSI WORLD}_t = 0.002222 + 0.465322\text{CAC}_t - 0.407125\text{EURUSD}_t - 0.354038\ \text{TWEXBMTH}_t + 0.240810\text{DAX}_t$$

Coefficients are statistically significant at 5%. The TWEXBMTH and EUR/USD variables are negatively correlated with the dependent variable, whereas CAC40, DAX and ASE are positively correlated with the Dow Jones Sustainability Index (DJSI World). The Adjusted R-squared was interpreted by 86% of the independent variables and the remaining 14% is due to random factors.

Table 4 GARCH Regression Results (1,1)

Variable	Coefficient	Std.Error	z-statistic	Prob
C	0.002222	0.001080	2.057393	0.0396
CAC	0.465322	0.047205	9.857480	0.0000
EURUSD	−0.407125	0.041497	−9.810865	0.0000
TWEXBMTH	−0.354038	0.096468	−3.669997	0.0002
DAX	0.240810	0.036711	6.559580	0.0000

Table 5 shows the results of variance. The function is:

$$\sigma_t^2 = 2.30 + 0.060108u_{t-1}^2 + 0.808006\sigma_{t-1}^2$$

Table 5 GARCH Variation Results (1,1)

C	2.30E-05	1.14E-06	2.013854	0.0440
RESID(-1)^2	0.060108	0.057662	1.042411	0.2972
GARCH(-1)	0.808006	0.091142	8.865367	0.0000

In terms of the Jarque-Bera test, the research demonstrated that the distribution of the u_t residuals is not normal, thus, to ensure that the estimates are consistent, the standard errors and collisions should be estimated using the quasi maximum likelihood (QML) by Bollerslev and Wooldridge (1992).

If the mean and variance equations are correctly defined, it is anticipated that LB statistics for typical residuals are not statistically significant. In addition, the ARCH LM test result is negative when testing ARCH in residuals. As shown in Table 6, LB statistics is not significant for typical residuals, and the result of the ARCH LM test demonstrates that there is no residual correlation to squared

residuals (Table 7).

Table 6 LB test[(1)] residuals GARCH (1,1) model

Lags	Autocorrelation	Partial Correlation	Q-stat.	Prob
1	0.045	0.045	0.4354	0.509
2	−0.071	−0.073	1.5102	0.470
3	0.074	0.081	2.6726	0.445
4	0.024	0.011	2.7964	0.592
5	−0.079	−0.070	4.1452	0.529
6	0.007	0.012	4.1561	0.656
7	0.174	0.163	10.826	0.146
8	−0.051	−0.059	11.391	0.180
9	−0.004	0.026	11.395	0.250
10	−0.002	−0.041	11.396	0.328
11	−0.022	−0.015	11.506	0.402
12	−0.042	−0.020	11.901	0.454
13	−0.062	−0.071	12.775	0.465

[(1)]autocorrelation analysis involves 36 lags

Table 7 Process results - ARCH

Heteroskedasticity Test ARCH			
F-statistic	0.424014	Prob F(1,207)	0.5157
Obs*R-squared	0.427236	Prob Chi-Square (1)	0.5133

4 Conclusions

A great number of surveys were carried out in order to provide appropriate information to investors, as all investment decision processes are based on current available information. It appears that among the most common investors' problems is access to appropriate information (Simon, 1957), effective information management (Fatima, 2015) and speeded responses to simultaneous and immediately successive signals (Kahneman, 1973), which are basic considerations, and, thus, defined the Dow Jones Sustainability Index (DJSI World) as the dependent variable in the present survey. The World Sustainability Index, which includes the world's leading companies on the basis of economic, social and environmental criteria, is a major indicator trusted by most investors.

In relation to the independent variables, that is, the EUR/USD exchange rate, the dollar exchange rate against other currencies, the France CAC 40 Stock Market Index and the German Stock Index (DAX), the research demonstrated that the Dow Jones Sustainability Index (DJSI World) exhibits a negative correlation with the exchange rates. Remarkably and most paradoxically, it exhibits a negative correlation with the dollar exchange rate and the dollar against other currencies, which is justified by the fact that DJSI World includes companies from all over the world with transactions based on national currencies, which are export-based; thus, a potential currency appreciation has a different impact on individual companies. To illustrate, dollar-trading companies are negatively affected, as their export products become more expensive, whereas companies trading in Euro are not. The DJSI World exhibits a positive correlation with the French and the German Stock Market Indices, as many companies, which are included in the DJSI World, are either French or German, and are listed in their national stock markets. Thus, a rise in domestic stock market has a positive impact on the companies included in the DJSI World.

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RESEARCH MATERIALS

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Development of the Fergana Cluster Within Formation of the Global Transportation Cluster System

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Introduction

It has been a common knowledge that sound and developed infrastructure is indispensable for the economic growth of states and regions. Major financial institutions, e.g. the World Bank or the European Bank of Reconstruction and Development, eagerly contribute their funds to projects aimed at creating roads, stations and pipelines. These projects usually involve large amounts of money and require many years to be completed. Nevertheless, the willingness of states and global institutions to develop infrastructure has never stopped. Strong infrastructure lays the foundation for promoting progress and boosting the economic activity. Indeed, it is the basis of the economy as a whole.

Moreover, properly designed infrastructure leads to greater trade volume among nations. Today`s leading economies are heavily engaged in trade operations and transactions, with per capita income levels constantly rising in their territories. Trade, through infrastructure, connects states, particularly cities and erases old tensions which existed before the introduction of trade. Thus, our world becomes more stable and prosperous than ever before.

However, there are certain important drawbacks in current state of affairs. As it was said above, large financial institutions are ready to give their money on infrastructure projects, yet they focus largely on the territories and regions that are already developed and that enjoy benefits of good roads. Many regions that really need extra financing and massive technical assistance remain unnoticed by investors that are not economically interested in putting their money therein. The UN specialized agencies, like UNDP and UNIDO, try to tackle this issue, but their efforts are not sufficient to improve the situation.

Central Asia would serve as a clear example. The World Bank publishes yearly report on the International Logistics Performance Index (LPI) calculated for each country. Taking into account that one of the biggest trade flows on our planet exists between the European Union and East Asia, particularly China, and these regions have very developed infrastructure. It is also should be mentioned that the infrastructure is either quite obsolete or completely absent in the territory lying

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between these regions (Uzbekistan, Kirgizstan, Tajikistan and so on). The average Logistics Performance Index (LPI) for Central Asian countries, except Kazakhstan, constitutes approximately 2 points, whereas China and the EU have the LPI of more than 4 points (World Bank Group, 2017). To counter this issue, China launched its own initiative called "One Belt, One Road" (Marat, 2014). This initiative provides opportunities to develop infrastructure in regions in need, thus in our project we will use this possibility.

Having analyzed the drawbacks listed above, we have come to the solution that in order to make logistics routes more interconnected and sustainable we have to make infrastructure inclusive. One way to do it is to create the global transportation system based on clusters. The clusters, in turn, will consist of cities and will act as large logistic hubs offering quick and easy transportation of goods.

Current paper largely focuses on the description of the creation of Fergana Cluster describing its structure, risks and potential within the further possibilities of the dissemination of the gained experience. Successful implementation of aforementioned project aims to achieve two goals – local and global. The local one is improving the life standards in the Fergana Valley and making this region a strong and sustainable community. The global goal is to create a new system of transportation that will be fair and beneficial for all regions and that will be more efficient and interconnected in comparison to the existing one.

Cities as the Foundation of Global Transportation Cluster System

In 2015, the urban population comprised 55% of the world's population and that number is continuously growing. Cities have become the centers of economic growth and development of the world. They provide a wide range of services and higher security levels and are becoming a prerequisite for prosperity. In most developed countries, population shifts towards cities while these countries reach higher income and GDP levels. Urbanization is an efficient way of fighting poverty, as people get more opportunities to earn their living and get access to all essential services. Cities attract progressive minds and give them a chance to study, grow and advance. They get specialized education and improve their theoretical and practical skills.

Trends nowadays show that urban areas are becoming more stable and sustainable solutions than the rural ones. There are examples of cities that autonomously build up their own cultural, economic and political landscape and cooperate with other cities on their sole discretion. For instance, investing in the countryside as a whole implies higher risks than investing in a specific city or even groups of cities.

Clusterization and creation of hubs is directly connected with the process of urbanization. Agglomerations lead to enhancing economic performance in both competition and infrastructural development of the area (Alumur et al., 2012). In general, creation of hubs provides plenty of advantages, such as:

- *Knowledge exchange within the hub* – big international corporations will be interested in representing their products or services in the areas of highly concentrated growing economic zones (Botha & Ittmann, 2008).
- *Collaboration of the companies within the hub* – there are possibilities for building these interconnections on both horizontal, when different companies providing similar services work together, and vertical level, when a full production cycle can be located within a range of several cities connected together to form a cluster (Farahani et al., 2013).
- *Investments into research and education* – companies that allocate their capacities to such clusters use investments in order to develop their production capability, increase the attractiveness of the region, and get qualified workforce (Haddad, 2005).

• *Attractive supply base* – clusters are historically located on the crossroads of major trade routes and offer great advantages for various industries as there is no lack of raw materials because of the developed trade flows (Škrinjar et al., 2012).

Overall, our project emphasizes the importance of logistics intensive hubs and focuses on the provision of leading logistics services such as transportation, warehousing and forwarding.

Fergana Valley was chosen as our first cluster location for several reasons. Generally, geographical location is a key factor for determining the place of a logistics hub as it provides for optimization and reduction of costs (Wang & He, et al., 2009). The quick analysis of the current transportation system reveals its considerable drawbacks. Whereas Europe and China have developed modern and efficient elements of logistics services nations where the "One Belt, One Road" Route runs lack safe and sustainable transportation. Therefore, in order to improve the transportation system along the route, the Fergana Valley was chosen as the place for creation of the first cluster.

The Fergana Valley is located in the territory of Uzbekistan, Tajikistan and Kyrgyzstan. It is one of the most densely populated areas in Central Asia. It implies that it has sufficient amount of labour force that would be utilized after creation of the cluster. All of the countries above relate to the group of developing nations and proposed project will boost the potential of this region.

We expect that developing a hub in the Fergana Valley will result in positive outcomes for the global transportation system. For instance, economies of scale will be obtained because of the constant steady flow of goods through the cluster (Campbell & O`Kelly, 2012). Economies of scope resulting from the establishment of connections between agglomerations enable us to expand the existing logistics system and advance it to the global level. This cluster will also enjoy economies of density because it will be created within the range of 100 km.

Another specific feature that characterizes unique geographical position of Fergana is its equal distance from main growth areas, both existing and future ones: China, Middle East, Kazakhstan and India (Fig. 1).

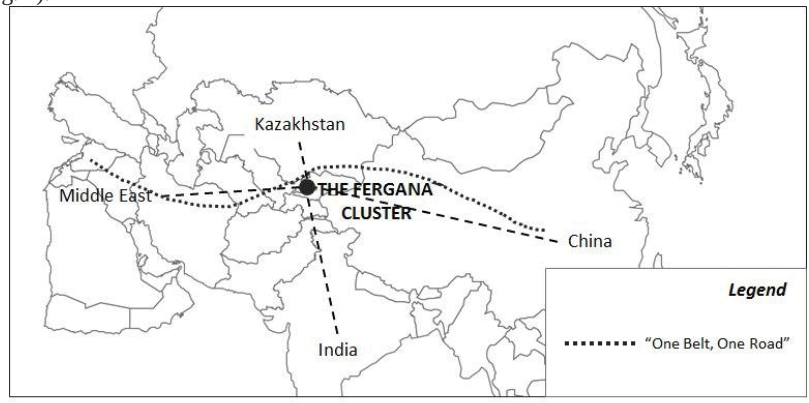

Figure 1. Geographical Position of the Fergana Cluster

Source: Developed by the authors.

Being on the intersection of these enormous economic powers implicates higher demand for quick, modern and sustainable transportation in the region. And the last, but not less important feature is that Fergana has historically been a major transit point of many trade routes, including the Silk Road and the Turksib railway. The loss of transit importance by the region happened only 25 years ago with the dissolution of the Soviet Union and establishing virtual borders between countries, transforming the main competitive advantage into the greatest problem of the region. However, our concept will

help the community of the valley to return the former importance without affecting national sovereignty and interference with internal affairs of states and preserving cultural and ethnic uniqueness of each nation in the region.

Description of the Fergana Cluster

To understand the steps to be taken in order to create the transportation cluster in Fergana it is necessary to understand the current state of affairs in the region. The concept of the Fergana Cluster is aimed to unite three modes of transportation at the meeting point in Central Asia lying on the crossroads of the Asia-Europe route. The current transportation network of the Fergana Cluster includes all types of transport intended to be used in the project. However, all of them are in quite poor condition due to more than 25 years of their underutilization in post-Soviet era (PWC, 2016). Most of the objects of regional infrastructure were built in the 1930s and then were gradually renovated, but the process of renovation stopped in the 1980s, and till now roads, railways, stations and airports are maintained in the least acceptable working condition.

The modern Fergana transport network consists of:

- The railway ring Kokand-Martilan-Andijon-Uchkurgan in Uzbekistan with railway lines to Kanibadam (and through it to Trans Caspian railway and Middle East), Kyzyl-Kia (the town in Kyrgyz part of the Valley), Jalal-Abad (and through it to Kazakhstan and China) and to the Northern part of the Valley accordingly. The lines are not electrified, yet in a quite adequate condition (IFRC, 2011).
- A dense network of highways the main of which cross the Uzbek part of the Valley through Andijon and Kokand to Tajikistan; connect Kokand with Tashkent through Kurama ridge and connect Andijon with the cities in the Kyrgyz part of the Valley. Minor roads connect the latter with the rest of the country, cross the center of the Valley in different directions and connect enclaves of the countries with the mainland. Most of the roads are in poor state, some of them are not even asphalted. A number of transborder roads cross borders up to four times making drivers stand in long queues.
- Three major airports in Uzbekistan (Fargona, Andijon and Namangan) and two in Kyrgyzstan (Osh and Jalal-Abad). All of them have only one runway and belong to the second category airports. Fargona, Andijon and Osh are used for international passenger flights and cannot be used in our project for active cargo transportation; whereas Namangan and Jalal-Abad provide us with a nice platform for cargo transportations (UNDP, 2009).

Finally, the region is poor in the field of infrastructure, but the Soviet legacy and transit position of the region creates additional opportunities for development of the transportation cluster on the New Silk Road. Each transport mode will be overviewed separately for convenience (Fig. 2).

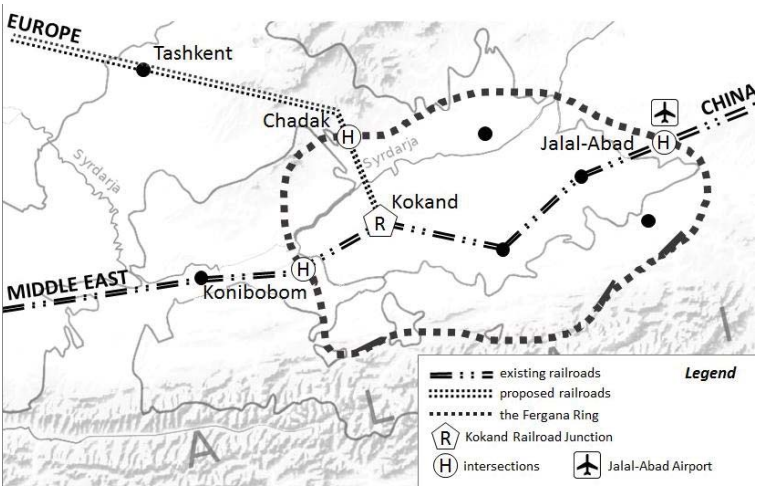

Figure 2. Scheme of the Fergana Cluster

Source: The scheme developed by the authors.

The railway transport is intended to be the cornerstone of the future transportation cluster as the railway transportation allows moving large amounts of cargo in the center of the continent. In addition, the railway is the most developed part of the local transportation system and is already connected with the Middle East and Europe through Konibodom, and with China and other countries of East Asia through Jalal-Abad.

There are actually two main railway junctions in the region – Kokand and Andijon and both of them are equally well-equipped and have developed auxiliary infrastructure. However, our choice of the main railway junction fell on Kokand because of its position. Nowadays the way towards Europe from Fergana Valley goes through Khujand and Tashkent, however the way to Tashkent that is only 150 km away takes more than 10 hours, because the railway takes 2.5 times longer way around Kuramin ridge and crosses the border twice. The most reasonable idea is to complete the Soviet project of direct road from Tashkent to Fergana through the ridge. In this case, Kokand, which is located in close proximity from Kuramin, is the best choice. The construction of the railway across Kuramin may be provided by China, as Chinese companies already have experience of building speed railways in Tibet (Deepak, 2014).

The second issue for the railway transportation in the Fergana Valley is electrification. Providing old roads with electrical network and building new already electrified lines will, on the one hand, provide fast transportation speed (two times faster than diesel locomotives), and on the other, create opportunities for sustainable development of the region, as the Fergana Valley is very dependent on the water supply and is dug over with irrigation channels. The use of electric locomotives will minimize the risk of polluting local water resources with oil waste dripping from trains and stored on tank farms (UNDP, 2005).

Finally, development of the railway junction in Kokand; equipping it with modern container scanners and reloading machinery; bandwidth expansion of the Kokand station and construction of transit warehouses will at the same time increase the transit importance of the region and give additional impulse for economic and then social development of the Kokand agglomeration.

The other important sphere of land transport network is *vehicle transport*. As mentioned above, the motorways in the region are in poor condition, but that is hardly the worst aspect in the local vehicle transport. The transit routes are going through more or less high-end motorways and the issue of the roads is compensated by the dry climate of the region making these tracts more passable than

their analogues in humid areas of Siberia or Indochinese jungles (UNDP, 2003). The fundamental problem for the transit transport and many people living and working in enclaves and border areas of the outer part of the Valley is the necessity to cross the borders and pass border controls for several times.

In this context we propose to build the Fergana circumferential road through the entire outer (highland) part of the Valley including all the enclaves of the region. The road should have preferential customs regime and border controls. All the intersections of the Fergana ring should be equipped with border posts so that one must pass a border post entering the ring and the other exiting it. Together two border posts are equal to only one border crossing in spite of three or even four that are typical nowadays. To speed up the transit, the speed limit should be highest possible or even not exist at all.

The other advantage of the Fergana ring is its intersections with railways. The crossing between highway and speed train is an perfect place for intermodal hubs where it would be possible to transfer imported goods from trains to trucks that have much higher mobility and are able to distribute goods around the local communities and vice-versa – goods from local producers may be reloaded from trucks to trains that will distribute them all over Eurasia. The most convenient places for such intersections with hubs are Konibobom in Tajikistan (Middle Eastern direction), Jalal-Abad in Kyrgyzstan (Chinese-East Asian direction) and possible railway station near Chadak in Uzbekistan on the direct Kokand-Tashkent railway (European direction). Such hubs will give impulse for local communities and will allow even the most distant villages to exchange goods with rest of the world directly. The hubs themselves will receive an opportunity to become major regional trade and industrial centres.

The third transport mode to be renovated within the Fergana transport is *air transport*. In this project, air transport is not really the target one, but the extensive growth of air transportation in recent decades and its unique ability to transport perishable and urgent cargoes creates the need for leaving the room for its further development. Jalal-Abad is designed to be the target airport in our cluster rather than another abovementioned Namangan airport. The reason to choose Jalal-Abas is simple, i.e. it is located on the prospective intersection of railroad and motorway. Thus, it will perfectly complement the local hub. In addition, Jalal-Abad airport has enough room to build additional runaway and bond warehouses so that it would serve not only the Fergana community, but would also perform transit functions due to its location almost in the center of Eurasia. At the same time cargo monospecialization of Jalal-Abad won't harm the interests of the local population as the closest major passenger airport (Osh) is only 1.5 hour away from Jalal-Abad, and after the construction of the Fergana Ring the distance will decrease to only 42 km, or 30 minutes via highway.

However, we understand that the project is too ambitious to be embodied only at the cost of local governments. The financing mechanism should be realized in three stages (Fig. 3). *Stage One* – the local governments and communities should invest in the project as much as they are able to because they will receive the direct positive effect on the wealth and living standard of local communities. *Stage Two* – investments from Chinese and the EU companies in the Fergana cluster will increase the amount of mutual trade and drop the transportation costs. These companies should also get their right to take part in the cluster management as they are main transit users. *Stage Three* – additional financing of uncovered expenditures by the Asian Infrastructure Investment Bank (AIIB) on the return basis. Our project fully satisfies the requirements of AIIB, i.e. all the Fergana countries are the members of the bank, and the large amount of the investments should be taken by the parties of *Stages One* and *Two*, so that the risks of the project are evenly distributed among AIIB and private and public investors.

Apart from transport, there are also other auxiliary issues to be resolved. The main issues that accompany the creation of the cluster are provision of electricity and preserving peace and security in the region. Local electric production in the Fergana Valley is relatively low and is represented with a

dozen of hydroelectric power plants barely covering local needs nowadays (Musabaeva & Moldosheva, 2014). Possible electrification of the railways, industrial boost due to full utilization of transit position of the region and growth of living standards and consumption in the region will lead to further increase of mains load. The Fergana countries have quite limited energy potential and the best idea is to use Kazakhstan as an energy partner of the project as this country traditionally was the major producer of electricity in Central Asia.

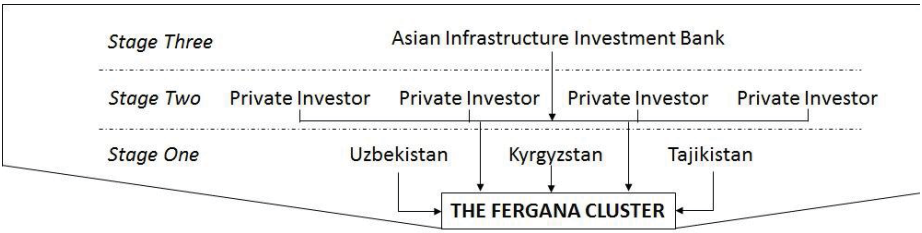

Figure 3. Three-Stage System of Project Funding
Source: Developed by the authors.

The demand in electricity on the initial stage of the project may be covered by the electricity imports from Jambyl power plant in Taraz city, which is directly connected with Fergana electrical greed. The further increase of consumption may be supplied from Balkhash power plant in Southern Kazakhstan that is under construction now and is to be put into operation in 2020. Such cooperation will be mutually profitable as Fergana countries will have a reliable power source and Kazakhstan will have a solid market for its electrical production for the nearest decades.

The issue of security is acute in the region due to two main reasons. The first reason is the historical one and relates to the process of settling of the Valley. As the region is one of the most fertile in the whole Central Asia it was inhabited by three nations and the ethnical borders between them are quite blurred. Such situation leads to numerous interethnic unrests, especially urgent in the Kyrgyz part of the Valley (Bakten region, the city of Osh) and around the enclaves. The other problem is rather contemporary and relates to Islamic terrorism active in Central Asia since Tajik civil war in 1990s.

The problem of terrorism may be treated by own forces of the countries holding the Valley. A special place here is given to the Armed forces of Uzbekistan that are the strongest army in the Central Asia and the third strongest in the former USSR, according to 2017 Military Strength Ranking (Global Firepower, 2017). They have already proved to be able to cooperate with the neighbouring countries in counter-terrorist operations in Tajikistan (1992-2002) and Batken region of Kirgizia (1999).

At the same time, the use of Uzbekistan Army in settling interethnic conflicts is not recommended because, first, it gives additional advantage to one of the ethnic groups, and second, interethnic clashes usually happen between spontaneously organized and poorly armed groups of local population and the use of military would be an excessive use of force. The best solution in this situation is recourse to Shanghai Cooperation Organization (SCO) as an intermediary, taking into account that all the parties are the members of this organization. One of the purposes of the Organization is to keep stability within the members and to counter terrorism and separatism. The SCO could provide the region with special police mission that should be an analogue of the OECD police missions to keep an eye on the situation in Fergana and to prevent clashes in the hot spots.

Creation of the Fergana Cluster would produce widespread effect not only on the Fergana Valley, but also on Asia and Europe as a whole. Local communities would benefit from transit movement of goods from East Asian nations to the European Union, and vice versa, whereas nations

that create this trade flow would enjoy lower costs and higher efficiency. This, in turn, will stipulate new jobs and higher wages. Trade will become beneficial and fair for all – exporters, importers and transit 'city-clusters'. Therefore, the spillover effect in Eurasia would be visible with laying down of only one cluster.

We expect the cluster to show exceptional performance encouraging other states to study its experience and technology. Thus, after the first stage of this project, i.e. creation of the Fergana Cluster, the next is dissemination of its positive experience. We expect that countries will start cooperating with each other, international institutions and private investors, trying to construct clusters similar to the existing one on their borders. After these actions gain momentum, the new global transportation cluster system will emerge, with more and more city-clusters connecting to it (Fig. 4). At this stage, the positive effects of the project will become really universal and all-embracing in their character.

Here, we define three major outcomes of the project that will shape the world, as we know it today. They are (i) increased economic efficiency; (ii) inclusive trade; and (iii) greater social and political stability (Fig. 4).

The first outcome, i.e. *increased economic efficiency*, stems from the establishment of new trade routes and changes in the clearance arrangements. New routes will enable exporters and importers to decrease their transportation costs and the time necessary for getting goods to the destination point. Transit countries will gain from customs proceeds and from the new jobs created because of new trade routes in their terrain. Therefore, the business activity in those countries, particularly in city-clusters, will rise, leading to greater incomes, or in other words, to better life. Moreover, the gradual development of communities through which the new routes will be running will result in the formation of new markets. To sum it up, the ultimate outcome will lead to accelerated economic growth of cities, states and regions.

The notion of *inclusive trade* is deeply interconnected with the previous outcome. The global transportation cluster system aims at creating infrastructure that ensures fair, equal and catchall distribution of benefits among all city-clusters connected to it. Any infrastructure needs maintenance, and that means new jobs for people. Importers and exporters would be able to locate certain processing facilities in the transit city-clusters, and that also means new jobs. The system will be beneficial for all; this is the core aspect of our project.

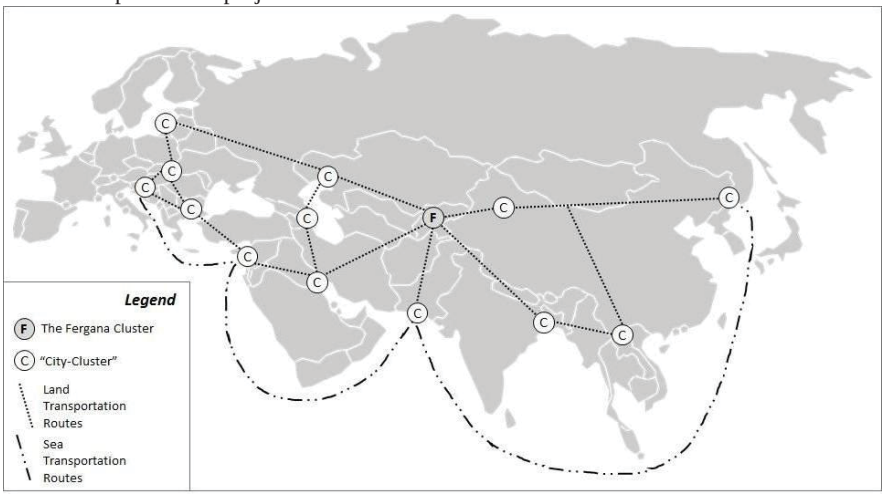

Figure 4. Possible Configuration of Global Transportation Cluster System
Source: Developed by the authors.

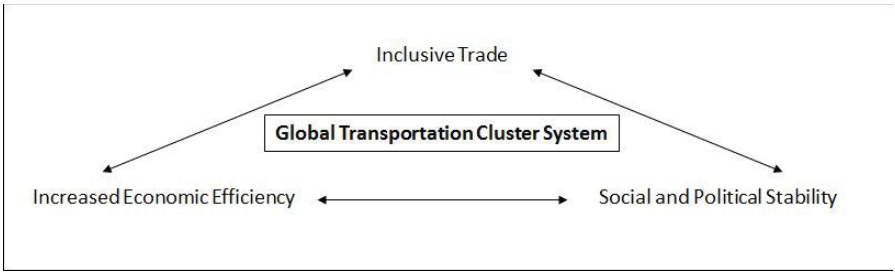

Figure 4. Effects of Global Transportation Cluster System
Source: Developed by the authors.

Stability, both social and political, is another biggest positive outcome of our project. In 1994, Robert D. Kaplan described a disturbing picture of the future world in his article, "The Coming Anarchy". He believed that uncontrolled urbanization accompanied by poverty and loss of cultural identity would lead to big turmoil and global conflicts. Our new system of global transportation enables us to prevent such developments, partially thanks to the notion of inclusive trade. Fair distribution of trade benefits will help us to fight poverty. Moreover, the structure of our future clusters will not hamper the traditional activities of people living there in any way. Therefore, there will not be any uncontrolled urbanization; instead, we will have reasonable and planned one. Development of the regions in need will lead to the less willingness among people to leave their villages, cities and countries in search of better life abroad. The rates of international and domestic migration will decrease. In addition, the example of Herat region in Afghanistan shows that improving standards of living in the territories with high terrorist activity leads to the fall in such activity. Thus, such system of global transportation will help states and international community in countering the terrorist threat. Generally, we expect that the world stability will improve dramatically.

Overall, the global cluster transportation system will promote greater cooperation and communication among cities, counties and regions, making our world more interconnected. The implementation of this project relies solely on technologies and practices that already exist and that are widely used, so the realization of this project may start at any time after getting approval and support.

Conclusions

Infrastructure should serve a goal of fostering international development and promoting inclusive trade for all participants. That it should create a platform upon which fair, equal and beneficial arrangements function among cities, states and regions. Therefore, in this paper we have offered the creation of the new global transportation cluster system.

The notion of clusters lies in the foundation of our proposed system. These clusters will consist of cities because they offer such advantages as knowledge sharing, cooperation, and logistics benefits. City-clusters will result in economies of scale, economies of scope, economies of density and greater efficiency in use of shared assets and resources. Thus, such clusters would resemble logistics intensive hubs.

The global transportation cluster system involves many clusters connected within it. This paper studies the creation of only one cluster in the Fergana Valley, as the experimental one. Any single aspect of the future Fergana Cluster has been outlined, describing how to structure and organize it. This cluster would serve as a model for future clusters that would be created. We expect that the global transportation cluster system will significantly improve the state of affairs at the global level.

The benefits from the clusters will not only be accessible for the locales where they are established, but will also provide cheaper and faster access for goods and services all over the world, fostering international trade and creating equal market opportunities for each country. This will result in the increase of gross world product, improving living standards in all the countries of the world, promote intercultural and scientific exchange and thus create a better and safer world to live in.

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Democratic People's Republic of Korea as the Basic Threat to the National Security of the USA Under D. Trump's Presidency

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Abstract: The escalation of tension between the United States and the DPRK is being explored, due to intensification of the North Korean nuclear program including nuclear weapon tests, audacious statements and threats of its leader to the international community. The US foreign policy actions according to different scenarios of the situation are modelled. Serious risks have been demonstrated in the event of further escalation of tension associated with the DPRK's nuclear programme threatening both the United States and other participants of international relations. In this context, the existing risk assessment has shown that the DPRK's containment policy is safer than preventive blows or war. Military measures can provoke nuclear strikes on US bases in South Korea, Japan, Guam, as well as on American cities.

Key words: USA • DPRK • Nuclear programme • security • Containment/deterrence • UN Security Council

Formulation of the problem

One of the threats to US national security under the presidency of D. Trump is North Korea, which claims to be able to launch an arsenal of intercontinental ballistic missiles on the American continent. Despite limited opportunities for implementation of such declarations, it is impossible to predict the results of their execution for the United States and the world community. Undoubtedly, this policy could be a self-destructive for the DPRK because today the 45th US President D. Trump is ready to spend billions of dollars on anti-missile systems, warships, cyber security, air force and military games to neutralize and contain the North Korean threat. D. Trump personally stressed that preparing for a nuclear attack on the part of the DPRK, which probably will never happen, the United States will have some improved weapons for use elsewhere, e.g. fighters, ships and missiles. But all this will not produce definite results for the economy, which will seriously suffer and the US will lose its economic supremacy (Friedman, 2017).

The Purpose of the Article is to determine the degree of threat of the North Korean Nuclear Security Programme for USA security under D. Trump's presidency.

Analysis of recent research and publications

Given the recent D. Trump's accession to power, the scientific and expert environment lacks thorough research on the subject. Therefore, the main sources include analytical reviews, publications in reputative world media. The research focuses on particular publications of Western scholars and

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political analysts, such as J. S. Blank, P. Dickenson, D. Marusik, J. Rogin, F. Zacharia, L. Mandvile, T. Friedman and others.

Main Results of the Study

Due to the high degree of threat of the North Korean nuclear programme to US national security the Georgetown University political scientist Joshua Mitchell is not surprised by President Trump's hostile rhetoric on the Korean power solution. According to him, he is not an isolationist or an interventionist in the sense understood by neoconservatives, but a realist and nationalist who wants to get out of the framework of the multilateral system and return to the classic force game. D. Trump sees a problem for the security of the United States and their allies in the DPRK and wants to act:

In order to better understand the situation, it is necessary to return to his inaugural speech, when he affirmed the desire to change the system, both within and outside the territory. Another key element is its basic philosophy: being attacked one needs to strike more strongly. It is difficult to imagine that D. Trump will allow the North Korean leader Kim Jong-il to humiliate himself. Trump was absolutely clear about it. The negotiating efforts of his predecessors in the desire to stop the nuclear program of North Korea failed. He warned the North Koreans and the Chinese that the time of retreat was over, and if necessary, the USA would fight (Mandeville, 2017). For decades, misunderstanding of US presidents with the DPRK could be described as a mixture of conviction and hesitation, quoted by former Nixon National Security Advisor Henry Kissinger in *The Wall Street Journal*. Pyongyang's behaviour deserved condemnation. Warnings were given to him ... But the nuclear programme only gained momentum, he reminds. However, whatever it may be, now D. Trump calls the very idea that the DPRK can inflict a nuclear strike on American territory unacceptable. According to a high-ranking source, the first interpretation is reduced to the fact that D. Trump ‘only gives way to his impulsive nature against the advice of his environment. Such a hypothesis can lead to uncontrolled aggravation of tension’. The second interpretation suggests that under the belligerent words of D. Trump the calculation is hidden: ‘He either hides the confidential dialogue between Washington and Pyongyang, or demonstrates his intention to move away from the *strategic tolerance* of his predecessors in order to distract the attention from the scandal surrounding his Russian ties’. As the source points out, ‘a mixture of all options’ is quite possible (Mandeville, 2017).

However, the experts have doubts about the pressure, including the economic which D. Trump intends to use in order to force China to help the United States. In their view, Beijing has neither desire nor opportunities to solve the Korean issue. The American analyst Chas Freeman reckons that throughout its history, Korea has experienced 72 invasions, mostly from China, and one can hardly expect any trust here. Proponents of the opposite position say that China could, if desired, compel the DPRK to cede, blocking it from the economically (it is the only supplier of the nuclear technology). China begins to realize that the United States is not bluffing, seeing it as the reason for optimism. In any case, modern geopolitical maneuvers seem even more uncertain and delicate at the very moment the US Commander-in-Chief needs support, D. Trump is facing rejection and contempt from most of his country's elite ready to do anything to weaken him as the critique of his actions regarding riots in the American city of Charlottesville show. That is, the possibility that D. Trump might to get into an erratic international gambling in order to rally ranks is only a step away. And according to some analysts, D. Trump has already done it (Mandeville, 2017).

An attempt to track down and destroy North Korean nuclear missiles will be the best US strategy for preventing an accidental nuclear strike. However, the Vice Chairman of the US Joint Chiefs of Staff General Paul Selva said he was not sure whether the United States was able to control deployment of North Korean missiles, expressing only minimal hope for the success of such an operation. As the United States has a rather mixed protocol of testing American missile defense

systems, especially the system designed to protect the continental territory, it would be unreasonable to rely on them in intercepting missiles that could not be destroyed on the ground (Acton, 2017).

The most striking argument as to why North Korea containment may be impossible was voiced by US National Security Adviser G. McMaster, who pointed to the *cruelty* of the regime in relation to their own people and the magnitude of the threat it poses. The leader of the DPRK can be an arbitrary negative character, but it is impossible to call him irrational. Since assuming his office, Kim Jong-il's actions have been thoroughly orchestrated and aimed at advancing his interests. The use of nuclear weapons will lead to self-destruction, and therefore it will almost certainly be considered an unacceptable risk, unless he considers his regime already in mortal danger. Although the attempt to curb North Korea is certainly the best option, it does not release DPRK from the risks. At the moment, the task is to maximally reduce the above risks by announcing a number of really complex issues. The purpose of sanctions is to remove them as soon as the other party satisfies the requirements of the party that has imposed them (Acton, 2017).

Many analysts also state the growing tension between the United States and the DPRK in cyberspace. According to US media, President Trump has ordered that the US Army block DPRK's access to the Internet. In turn, the DPRK, previously used Chinese lines, since October it has begun to use the Russian ones thus complicating the task of American troops. Some American experts believe it is now difficult to block the DPRK's access to the Internet, so American Cyberstrategy, whose purpose is to shut out the DPRK has no means for a decisive blow. According to Reuters, currently 60% of the DPRK's Internet connections are passing through Russia. After 2010, Pyongyang has used lines of the Chinese *China Unicom* company, but now China's share has fallen to 40%. The DPRK's goal is to diversify the providers of Internet services and to reduce the dependence on the PRC, which exacerbates the pressure on the DPRK. In turn, the USA, which seeks nuclear disarmament on the Korean Peninsula, is trying to get North Korea at cornered with economic sanctions by the UN Security Council. Their goal is to deprive the DPRK of sources of foreign currency earned by cyber attacks, thus forcing Pyongyang to reduce its nuclear and missile programmes (Furukawa, 2017).

In this context, it should be noted that during his first address to the United Nations, D. Trump called the leader of the DPRK Kim Jong-il a 'rocketman' and declared the possibility of total destruction of the DPRK by military strike. Notwithstanding the fact that the United States and the DPRK are trying to avoid hostilities, as long as the DPRK ignores the international community's opinion and the UN Security Council resolution, the military alternative is becoming more and more possible. In addition, D. Trump emphasized that the DPRK should realize that nuclear disarmament remains the only acceptable prospect. The American leader appealed to all countries to join forces in order to stop Pyongyang's hostile action. Although the DPRK expressed its protest over this speech it has to change its policy. The Korean leaders justify development of their own nuclear program by the example of the authorities of Iraq and Libya who did not have nuclear weapons, so they were overthrown (Minity Shimbun, 2017). Based on the previous examples when the USA continued to increase its pressure, it would be difficult for them to return to their initial positions. Japan and the Republic of Korea are afraid of a possible accidental war conflict. One way or another, the DPRK is not so unreasonable as to doubt that the United States will not be able to use military force. Especially, if it gives the highest priority to maintaining the system. The political means has not yet been exhausted. The UN Secretary General A. Guterres addressed the General Assembly before D. Trump. He expressed fear about the possibility of a nuclear war and stressed the importance of political mastery. It is likely that politics can play its part, including the efforts of the Russian Federation and China aimed at persuading the DPRK from audacious actions on the world stage that can undermine international stability and sustainable development of mankind (Minity Shimbun, 2017).

Korean nuclear weapon tests can increase further tension between the United States and the DPRK, which has already reached its summit. There are fears of losing control of events and sliding to

a dangerous point of non-return. The behaviour of the North Korean dictator is particularly dangerous. Kim Jong-il is getting on American nerves even after President D. Trump's unambiguous warning of further action. And despite the fact that the new US deterrence doctrine has not brought tangible results so far, it has contributed to strengthening of China's position vis-a-vis Kim Jong-il. The Chinese government has heard the direct threat of D. Trump to destroy North Korea if it continues its provocative and aggressive behaviour (this threat is accompanied by new financial sanctions). The PRC began to exert pressure on Pyongyang fearing regional and global consequences of a possible war on the Korean peninsula. It includes the decision of Beijing to join the package of sanctions imposed on the DPRK by the UN Security Council in September 2017 including an embargo on oil supplies to the DPRK and ceasing export of North Korean textiles to China. Such measures will not be a heavy economic blow to Pyongyang, but this kind of political thinking is new to China (Ben-Tsvi, 2017).

Conclusions

Consequently, the reason why D. Trump's Administration considers the probability of hostilities is that the possibility to remove nuclear weapons from North Korea is far from possible, which greatly complicates its containment. However, in this context, it should be noted that members of the American administration did not focus on effective means of the DPRK's nuclear program deterrence. The urgent question is not whether containment is possible, but how the risks of this strategy relate to the risks of an alternative option, namely a preventive war. According to the assessment of the above-mentioned risks, deterrence is a less dangerous option. Military measures can provoke nuclear strikes on US bases in South Korea, Japan, Guam, as well as in American cities. According to a US intelligence service analysis, North Korea is able to install a nuclear warhead on a ballistic missile. Therefore, launching combat operations hoping that Kim Jong-il still does not have a functioning nuclear arsenal would be extremely counterproductive.

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