Foreign capital positions in Lithuania can be defined in several ways:

• total investment in the economy of Lithuania;
• their impact on different sectors of the economy;
• the National Stock Exchange;
• Foreign investors' share of new capital inflows.

Schröder [5], in the context of Central and Eastern European capital markets, says that the most important factors influencing the development of financial markets can be attributed to macroeconomic indicators such as economic growth, savings, productivity, inflation and state budget deficits. In his view, a significant impact on the capital markets is done by foreign investors, who affect supply and demand balance.

Teresienė [6], analyzing the Lithuanian stock market, examines the factors that determine the stock price fluctuations. One of the major factors drew investors' psychology.

Rafael and Tvaronavičienė [4] distinguish three main groups of factors affecting stock price fluctuations: political and economic, social and psychological conditions. The authors identify factors such as gross national product or industrial production volume index, as important factors in the share and its profitability growth.

Jasienė ir Paškevičius [2] say that one of the most important determinants of stock prices changes is the rate of competitive investment instruments such as government securities, bank deposits and others.

This paper aims to break down all other authors' identified indicators into 6 groups: globalization, macroeconomic, organizational, financial, social, psychological.

Table 1. **Capital market development and interference factors**

Group	Factor
Globalization – G	Foreign investors coming into the market (g1), foreign direct investment (g2), cross-border transactions (g3), domestic firms issue on foreign exchange (g4);
Macro-economic – Q	Economic growth (GDP) (q1), savings (q2), labor productivity (q3), inflation (q4) and the state budget deficit (q5), industrial production index (q6), the business cycles (q7), the domestic debt (q8), the foreign debt (q9);
Organizational – H	Vilnius Stock Exchange performance (h1), the number of shares, (h2), the number of government securities issues, the number of foreign investors (h3), capital marketparticipants (h4);
Financial – F	Interest rate of overnight transactions (f1), government securities (f2), bank deposits (f3), broad money (f4), balance of payments (f5) and foreign status (f6), average annual interest rate of deposits in litas (f7), average annual interest rate of loans in litas (f8), the European Central Bank interest rate (f9);
Social – Z	Employment (z1), unemployment (z2), level of living (z3);
Psychological – X	Investors' expectations (x1), market confidence indices (x2);

Source: Schröder 2001, Teresienė 2009, Rafael ir Tvaronavičienė 2005, Jasienė ir Paškevičius 2010.

Conclusion. To conclude with, there is a variety of factors, which are more o less essential for the functioning and development of capital market. Different authors highlight different aspects. In order to confirm or refute the theoretical considerations of the relationship between the determinants of venture capital market and impact of interference issues on capital market development and expansion, a complex analysis should be enforceable: correlation, multiple regression and multiple analysis.

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EXTERNAL SHOCKS ON ECONOMIC GROWTH OF UKRAINE: THEORETICAL BACKGROUNDS AND EMPIRICAL TESTING

У статті розглядаються впливи зовнішніх шоків на економічне зростання в Україні. Розглянуто основні зовнішні шоки зростання в Україні. Побудовано економетричну модель для тестування впливу зовнішніх шоків на економічне зростання в Україні.

Ключові слова: економічне зростання, світова економічна криза, макроекономічні шоки, економетричне моделювання.

В статье рассматриваются воздействия внешних шоков на экономический рост в Украине. Анализируются. основные внешние шоки роста в Украине. Построена эконометрическая модель для тестирования влияния внешних шоков на экономический рост в Украине.

Ключевые слова: экономический рост, мировой экономический кризис, макроэкономические шоки, эконометрическое моделирование.

In the article the external shocks impact on economic growth of Ukraine is analyzed. The main external shocks on the Ukraine's growth are considered. The econometric model of external shocks impact on economic growth of Ukraine was built.

Keywords: economic growth, world economic crisis, macroeconomic shocks, econometric modeling.

Research urgency. The world economic crisis of 2007-2010 years had a significant negative impact on the economy of Ukraine. The current state of global economy is characterized by increasing risks of recurrence of the global recession. The source of these risks is primarily economic processes in the developed countries – the U.S. and the EU. Nowadays as managing Director of International Monetary Fund Christine Lagarde admits, "the world is more closelyknit than ever before. An infinity of little interconnections dances across the fabric of global society, transforming millions of fragmented images into one dazzling mosaic" [1]. Taking into account Ukraine's economy dependence on the economy of developed countries, it's important to analyze and model the linkages between Ukrainian economic indicators and main external factors that may cause Ukraine's economic growth fluctuations.

The degree of problem research. The issue of external shocks influence on the economy of Ukraine, especially related to the global financial and economic crisis, was researched by many Ukrainian scientists . Among them are: Y. Belinska, V. Vorotin, Z. Varnaliy, V. Heyets, J. Zhalilo, V. Litvitskiy , V. Muntian, V. Parnyuk, O. Paskhaver, A. Sukhorukov, L. Yaremko, and many others. However, the problem of modeling of this impact on the economy of Ukraine is still scarcely explored.

The purpose of the paper is to analyze and model the impact of the global financial crisis on the economy of Ukraine.

Introduction

Many international experts evaluate the likelihood of recurrence of recession in the U.S. in 30 – 50%. And it's obvious that the economic processes in developed countries are outside the management possibilities of Ukraine as a country with a small open economy. Thus, Ukraine is unable to avoid a global recession. Therefore, priority of the anti-crisis policy should be primarily an effective monitoring of trends in the global economy and development of measures to mitigate the effects of global recession in Ukraine in case of attack. Uncertainty about the future of the world economy and the high probability of a global recession in the short run negatively affect the prospects of Ukraine and other countries that have large export part in GDP. Given the high degree of export dependence of the national economy and high perception of international investors country credit risk (as defined by all major rating agencies international debt obligations are rated Ukraine as sub-investment and high-risk), the impact on Ukraine's new global recession will be significant [2, p.45].

By the IMF the global economy is not delivering the growth the world needs. The IMF estimates global growth to be about 3½ percent this year, but much weaker in advanced economies–a mere 1½ percent, including a mild recession in the euro area. Among the advanced economies, the output gap–the difference between what an economy *is* producing and what it *can* produce–remains close to 4 percent this year on average. The emerging markets and developing countries are holding up much better, with expected growth of 5¾ percent. Turning to the financial side, financial markets in the euro area have seen some relief, thanks in part to recent European policies, but conditions remain volatile [3].

The major risk factors that affect the dynamics of the global economy in the short-term and medium term are:

- Excessive economic growth in developed economies, primarily in the U.S. and EU.
- Threats to financial stability of the euro area as a result of sovereign crisis in Greece and the debt crisis risks of a number of other European countries (Portugal, Spain, Italy, Ireland), the possible failure of the anti-crisis measures across EU countries and the ineffectiveness of anti-crisis emerging institutions.
- Slowing growth in demand in countries – new centers of growth, particularly in countries of BRICS (Brazil, Russia, India, China, South Africa).
- Rising prices for energy resources, agricultural products and other commodities which will strengthen inflation in many countries.
- The risks of the consequences of fiscal policy (government action to reduce state costs and increased tax burden could slow economic growth and have significant negative social consequences) [4, p. 5].

Analysis of external shocks influence on economic growth of Ukraine

According to ICPR forecasts, in Ukraine economic growth in 2012 will slow to 3% compared with 5.2% in 2011. Thus, according to ICPR in the first quarter of 2012, GDP growth decelerated to 2.5% year over year due to the deterioration of external conditions. Over the next quarter, the experts of ICPR expect some recovery in external demand, which should accelerate growth in industrial production. However, factor of Euro 2012 won't have any impact on the main economic indicators of Ukraine. During the years 2013-2014, GDP growth will accelerate to 3.5% and 4.2% respectively. Thus, the economy will grow at a rate below its potential.

Now Ukraine is becoming vulnerable to external shocks by increasing imbalances in the economy:

• To increase the popularity the government can resort to higher than planned in the budget increase of benefits before the elections, which will increase the budget deficit.

• Inability to attract sufficient funds to finance the budget deficit and debt service will increase pressure on the National Bank to buy government bonds on the secondary market, which may cause hryvna emission rate and a surge in inflation and/or a sharp devaluation.

• Rising of the current account deficit of balance of payments increases the pressure on the exchange rate.

• Unusual winter 2011-2012 years can cause a large deviation from the forecast level of yield value, because agriculture remains critically dependent on weather conditions [5].

So firstly, let's analyze the category "economic shock". Thus, economic shock as a phenomenon should have the following essential features: first, an extraordinary stimulus, expression of which in the economic sphere is a sudden change in economic conditions, causing jumps in the dynamics of one or several economic indicators, and secondly, it must cause destabilization of a particular economic entity (company, market, a particular region or sector of the economy or economic system as a whole).

Thus, the "economic shock" can be defined as sudden change in economic conditions, leading to destabilization of the economic object development.

Thus, the term "macroeconomic shock" can be defined as a real sudden change in economic conditions, which brings the economic system from a state of equilibrium or deepens the nonequilibrium state of the economy [6, p.45-46].

Macroeconomic shocks may be divided on internal and external ones.

The internal shocks relate to changes in economic conditions in the country and may be due to changes in legal and governmental events (shocks in aggregate demand, specific supply shocks, inflation shocks, monetary shocks, shocks of liberalization of capital account, credit shocks, etc.). They also include internal political processes, technological disaster and so on [6, p. 47].

External shocks are caused impulses arising outside particular country. These shocks are changes in external demand, cost of individual resources on the world market, terms of trade, world interest rates, flows of international mobile financial capital and more. Weather conditions also should be included to the external shocks that affect the development of agriculture and natural disasters.

Negative shocks of external sector of the economy affect the current account (will decrease revenues from exports, increase the cost of imports and net interest payments to non-residents) or on account of capital transactions and financial transactions (will increase outflow of capital), which negatively affect the balance of payments of country and lead to rapid growth of foreign currency demand [6, p. 47].

To built the correct model of external shocks influence, the analysis of possible macroeconomic transmission channels is necessary.

According to the State Statistic Committee of Ukraine increase in direct investment (equity) for 2011 amounted to 4556.3 million dol. USA (in 2010 – 4753.0 mln.dol. USA) [7]. The dynamics of FDI is presented on Figure 1.

Major countries-investors of Ukraine are Cyprus – 12645.5 mln.dol. (25.6%), Germany – 7386.4 mln.dol. (15.0%), Netherlands– 4822.8 mln.dol. (9.8%), Russian Federation – 3594.5 mln.dol. (7.3%) (Figure 2).

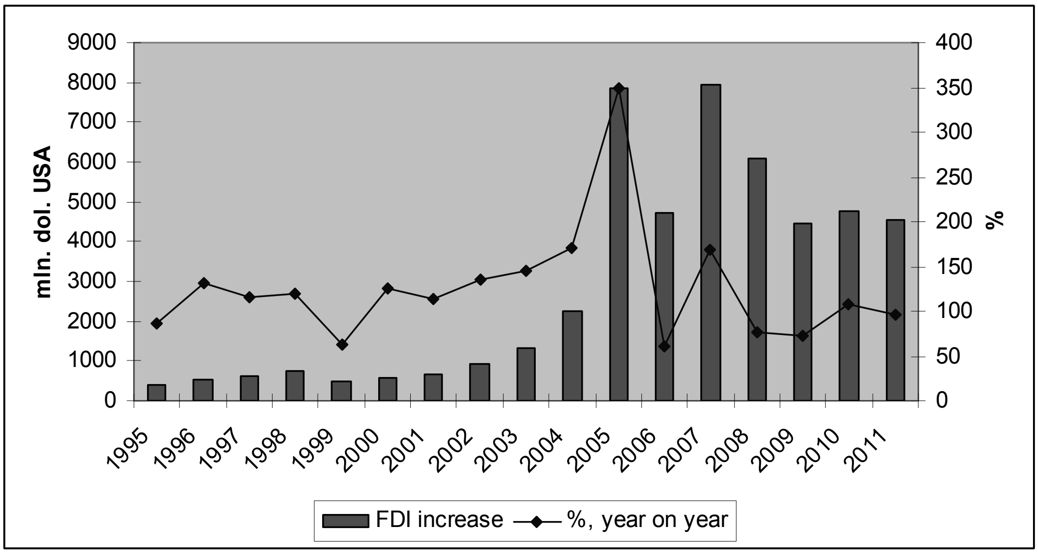

Fig. 1. Dynamics of foreign direct investments in Ukraine

Source: State Statistic Committee of Ukraine [7]

By State Statistic Committee Ukraine carried out foreign trade transactions of goods with partners from 219 countries. In 2011 Ukraine has exported to the CIS countries 38.3% of all goods, to EU countries – 26.6%. But Russia remains the largest trade partner of Ukraine (29.1% export and 35.6% imports) [7].

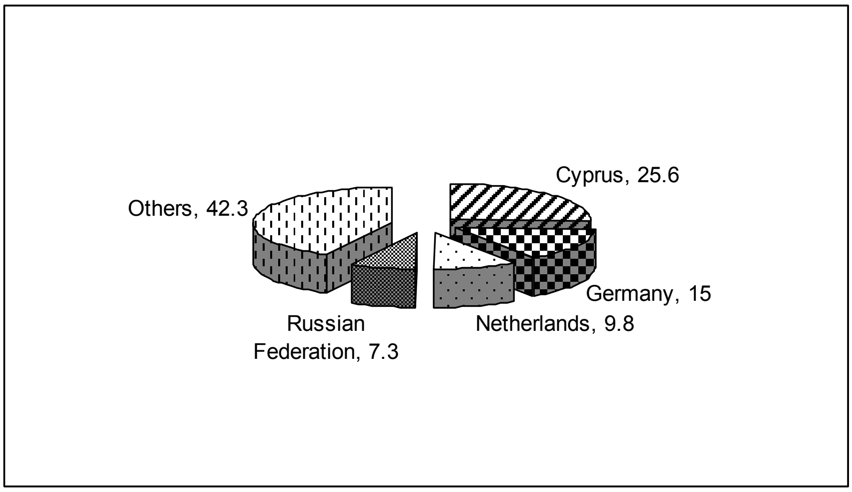

Fig. 2. Main countries-investors of Ukraine

Source: State Statistic Committee of Ukraine [7]

The export of goods to all major partner countries has increased as follows: to China – by 66.2% (due to the supply of ores and concentrates, organic chemicals, fats and oils of animal or vegetable origin), to India – by 62% (by supplies of fats and oils of animal or vegetable origin, ferrous metals, fertilizers), Poland – by 58.9% (due to the supply of ferrous metals, ores and concentrates of iron, steel, electrical machinery), Russian Federation – by 48.7%, Italy – to 29.5%, Turkey – by 28.8% and Belarus – by 4.8%.

From the CIS countries in 2011 were imported 45.4% of all goods, from EU countries – 30.9%.

The imported supplies have increased (compared with January-November 2010) from Belarus – by 64.8% (due to the supply of mineral fuels, oil and refining products, vehicles, except rail, mechanical machines), Germany – by 50.9% (due to mechanical machinery, vehicle insurance other than railway, electric cars), USA – by 48.9% (due to mineral fuels, oil and refining products, vehicles, except rail, mechanical machines), Italy (42.4%), China (37.3%), the Russian Federation (34.8%), Poland (14.9%).

In total imports the share of mineral fuels, petroleum products and refining, mechanical and electrical machinery, vehicles, except rail, has risen. The share of plastics, polymers, pharmaceuticals, paper and cardboard decreased.

The dynamics of main export-import indicators is presented in Table 1.

Table 1. **Growth rates of increase (decrease) of trade volume of goods and services,% year on year**

Year	Export	Import	Balance, mln. dol. USA
2003	124.1	134.7	2836.7
2004	139	126.9	6918.6
2005	106.3	125.8	1291.8
2006	113.7	124.8	-2884.5
2007	127.2	134.5	-7263.6
2008	134.9	140.3	-13294.7
2009	62.6	55	-1312.6
2010	128.1	130.8	-3025.3
2011	130	134.2	-6747.5

Source: State Statistic Committee of Ukraine [7]

The economy of Ukraine as last financial crisis has showed is sensitive to the interest rates in EU and Russia.

So, as major external shocks that may cause the economic growth of Ukraine we'll consider: foreign direct investments, consumer prices increase in developed countries, growth rates in USA and EU, interest rates in euro zone and Russia [7] - [10].

The test for stationarity of series was conducted using the Augmented Dickey-Fuller (ADF) Unit Root Test. It showed that series in levels were nonstationary, but their first differences appeared to be stationary which gave the grounds for further model building. Based on the empirical research the linear regression model was constructed [11]. In the model such variables as foreign direct investments, GDP growth rate in USA and interest rates in EU and Russia appeared to be non significant.

We also have included the dummy variable that depicts crisis in the model, but it is appeared to be non significant.

So specification of model is as follows (in brackets there are t-statistics values):

$$\Delta GDP\_UKR_t = \underset{(3.32)}{16.77}\Delta CP\_OECD_t / CP\_OECD_{t-1} + \underset{(7.56)}{2.94} GDP\_EU_t + \underset{(3.00)}{0.001}\Delta BOP\_\_UKR_t - 2.36 + \varepsilon_t$$

$R^2 = 0.78$,

ΔGDP_UKR_t – differences of Ukrainian GDP growth rate,

ΔCP_EU_t – differences of OECD consumer prices growth rate,

CP_EU_{t-1} – lagged variable of OECD consumer prices growth rate,

GDP_EU_t – GDP growth rate of EU countries,

$\Delta BOP\_\_UKR_t$ – differences of Ukraine's current account balance,

ε_t – residuals of the model.

The built model was also tested for the presence of residuals heteroscedasticity and autocorrelation, correctness of specification. The obtained results have revealed the presence of residuals autocorrelation which caused the necessity of application of Newey-West covariance matrix.

Conclusions

Thus the results of the research have showed huge Ukrainian economy dependence on external factors. Among them the most significant one is inflation import from developed countries. We have situation when export products and "real" foreign money are going out of the country. Residual foreign liabilities are not able to increase commodities capacity in country. Accordingly, the commodity content of the national currency turns out to be smaller than that of foreign currency, and so, the national currency is less popular.

According to Russian economist Sergey Glaziyev, by exporting raw materials and buying high-tech products the country imports inflation [12]. It leads to the vulnerable dependence from developed countries that was clearly shown up during the last financial crisis.

So, if these processes keep in the future, Ukraine will be unable to avoid a global recession with severe consequences to overcome.

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