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Institutional Analysis of Ukrainian Monetary Sector's Influence on Economic Growth

Summary

The institutional structure and fundamental indicators of the national monetary sector are analysed. On the basis of size and activity indicators' evaluation of separate segments of monetary sector we can conclude that during 2000-2011 the national monetary sector grew more rapidly than the real one. Using the correlation analysis, the impact of individual segments of the monetary sector on economic growth is revealed. The banking system plays a key role in the monetary sector of the Ukrainian economy. An increase in openness and transparency of the stock market, improvement of its government regulation will increase efficiency of the national monetary sector.

Key words: monetary sector, financial depth, market capitalisation of listed companies, bank assets, assets of non-bank financial institutions, budget expenditures, Pearson correlation, world economic crisis, unsettled economic systems.

JEL codes: N1

Introduction

The monetary sector is becoming increasingly important as a mediator of most processes and structural changes in national and global economies and has a positive influence on economic growth.

Due to a further improvement of the monetary sector's functioning, its mechanisms are increasingly providing the redistribution of resources to the most profitable and promising industries and businesses, stimulating structural changes in national production and economic growth. In particular, most recessions have monetary character and to overcome them and provide a sustainable economic growth the effective functioning of monetary sector's institutions is needed.

A high share of the shadow economy in Ukraine, underdeveloped financial and securities markets, lack of public confidence in the monetary authorities, inflation expectations and political instability – these are the main factors that reduce the effectiveness of monetary sector's influence on economic growth in Ukraine.

It is important to determine the monetary sector model, because the effectiveness of monetary sector structure determines the efficiency of the entire economy.

Taking this into consideration, the purpose of this article is an analysis of the institutional structure and indicators of the monetary sector's performance and their influence on economic growth.

Problems of different segments of monetary sector's development and performance is a subject of scientific research of many Ukrainian scholars such as P. Heine, R. Hubbard, M. Stolbov, O. Hoduyev, N. Deyeva, R. Kirchner, V. Oparin, I. Liutyi , O. Korniychuk, O. Mozhovyi and others.

The question of bank- or market-oriented economy is a subject of research carried out by such domestic scholars as V. Geets, A. Dzyubliuk, V. Korneyev, S. Lieonov, F. Myshkin, A. Frost, N. Sheludko, S. Shumskaya and others. However, the analysis of only two segments of the monetary sector is a little bit narrow, since in present unsettled economic systems a significant role goes to public finance and non-bank financial institutions.

The gist of institutional analysis of the national monetary sector

The purpose of institutional analysis of the national monetary sector is investigation of its institutional structure and the efficiency of monetary sector's performance and identification of its impact on economic growth.

Before talking about efficiency of the monetary sector, we need to determine what the "monetary sector" means, since in domestic and foreign literature the definition of "monetary sector" is not found. Economists often use such terms as monetary system, monetary economics.

In our opinion, the monetary sector is a part of the national economy, which consists of monetary and financial institutions, which create, accumulate or redistribute financial resources between lenders and borrowers, thereby ensuring the functioning of the real economy.

The national monetary sector includes the following components:
- banking system (National Bank and commercial banks);
- financial market (stock market, currency market, market of services provided by non-bank institutions);
- state finance (state budget, public credit, allocated funds and finance of public enterprises);
- non-state finance (finance of companies and households);
- international finance (finance of international financial institutions and finance of monetary institutions of other countries).

The leading role in the national monetary sector belongs to banks through which the main part of financial resources in production and non-production areas moves. So we can talk about the bank-oriented model of the monetary sector in Ukraine.

In modern economics, we distinguish two types of financial systems: market-oriented (common in England, the USA) and bank-oriented or bank-based (Germany, France, Poland, Ukraine and other countries of Central and Eastern Europe)[1].

The bank-oriented model of the national monetary sector can be proved by many factors. The most significant of them are more developed and well-formed banking system with legal norms regulated at the appropriate level, the prevalence of banking transactions on the stock market's, a relatively higher level of confidence in the banking system compared to the stock market, a lower degree of risk. The bank-oriented model of the monetary sector is more suitable for unsettled economic systems as it involves a smaller gap in income distribution that greatly mitigates tension in the country.

Analysis of financial depth indicators

Effectiveness of the monetary sector depends on its scale in relation to the overall economy. To calculate this value economists commonly use indicators of financial depth.

The term "financial depth" was introduced in the late 1980's in publications of the World Bank. Financial depth indicators are a relative measure which shows the proportion of a particular segment of the monetary sector relative to GDP or other financial indicators.[2]

The experts of the World Bank keep a publicly available Financial Structure Database (FSD) which includes 22 indicators of financial depth.[3] Most indicators included in the FSD are calculated on the basis of indicators of International Financial Statistics of the IMF. These indicators allow detecting the level of development of separate segments and the monetary sector as a whole.

Clearly, a higher value of the financial depth indicator shows a higher level of development of the institutional segment of monetary sector, which it describes.

If the level of financial depth is low, then a large number of market participants remain outside the monetary sector.

A balanced growth of the financial depth level plays a significant role in the unsettled economic systems. During this growth, a significant strengthening of confidence in the national monetary sector occurs, the so-called effect of "everybody does it."

In our analysis of monetary sector performance in Ukraine, as a starting point we take the year 2000, since after the introduction of the national currency in 1996 there was a significant lack of means of payment, so the first question was where to get the money and nowhere to store them.

The analysis of national monetary sector effectiveness for the period of 2000-2011 suggests a faster growth of the monetary sector compared to the real one. There was an increase in all types of financial institutions and in the value of their assets, share capital and scope

[1] R. Levine, *Bank-based or Market-based Financial Systems: Which is better?* "NBER Working Paper" September 2002, No. 9138, 44 p.
[2] M. I. Stolbov, *Financial Market and Economic Growth: the problem's outline*, Academic book, Moscow 2008, 201 p.
[3] The World Bank official website. – Available from: data.worldbank.org.

of financial services. It should be noted that as of 1 January 2012 the NBU provided 176 banks with banking licence, their assets during 2011 increased by 12.4% in comparison to the previous year – to 1,058.6 billion.[4]

Ukraine has experienced a significant increase of such indicator as the ratio of bank loans to GDP, which in fact is one of the most frequently used indicators of financial depth. In particular, during the years 2000-2011, it tripled from 23.8% of GDP to 71% of GDP, [5]and in 2008 reached its peak – 82.2% of GDP, while it was 41% of GDP in Russia, 49% of GDP in Kazakhstan, and even only 55% of GDP in Poland.[6]

It should be noted that although the ratio of loans to GDP in Ukraine is higher than in many European countries, most credit resources go not to the real sector of the economy and this is considerably hindering economic growth.

An important indicator that characterises the monetary sector's effectiveness is also stock market capitalisation to GDP. Global investors consider the financial market of Ukraine as a frontier market. Also to this category belong seven other countries: Latvia, Bulgaria, Romania, Lithuania, Estonia, Slovenia, and Croatia. Ukraine took the first place in terms of stock market capitalisation in the group of countries with frontier markets in 2008-2010.

The drawback of interpretation in Ukrainian literature the term "stock market capitalisation" is that it is based not on the market value of securities listed on the Stock Exchange but on the total nominal value of registered shares. That means that the basis for determining the market capitalisation of the stock exchange in Ukraine is not a derivative market but the primary one which is not the subject of research in developed countries.

Therefore, to estimate the effectiveness of stock exchanges in Ukraine we need to conduct a comparative analysis with countries that also have developing financial markets.

Fig. 1 shows the dynamics of the market capitalisation of listed companies in Ukraine, Poland, Russia, and the average global market capitalisation over the period 2000-2011.

As seen from the figure, in Ukraine, during 2003-2007, the ratio of market capitalisation to GDP increased rapidly from 9.7% to 78.35%, but at the end of 2008, due to global financial crisis, it felt sharply to 19.07% of GDP.[7] A similar situation was observed in Poland and Russia. The higher than in Ukraine degree of stock market's development in Poland causes very similar to the global trend change in the dynamics of stock market capitalisation in the country. Meanwhile, the Russian stock market is characterised by much higher volatility even than the stock market in Ukraine.

Compared to countries with developed market economies, the capitalisation of Ukrainian stock markets is extremely low and accounts for only 0.4% of total world GDP, while the U.S. – 21.1% of world GDP, Japan – 7% of world GDP, Germany – 4.5% of world GDP, Africa – 3.2% of world GDP, Russia – 2.6% of world GDP.[8]

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[4] Ibid.

[5] Ibid.

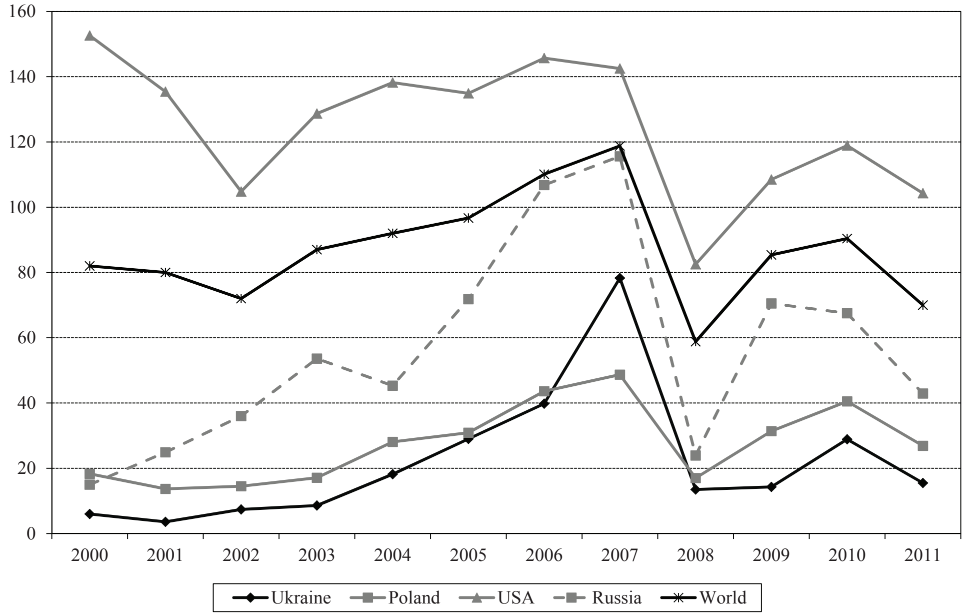
[6] R. Kirchner, R. Giucci et al., *Bankivskyi sektor v Ukrayini: mynuli podiyi ta maybutni vyklyky*, Berlin-Kyiv 2011, 48 p.

[7] N. E. Deyeva, *Kapitalizatsiya fondovoho rynku Ukrayiny: problemy otsinky i reaktsiya na kryzu*, "Ekonomichnyi visnyk Donbasu" 2009, No. 4 (18), pp. 115-121.

[8] *European Bank for Reconstruction and Development*, available from: www.ebrd.com.

Fig. 1

Market capitalisation of listed companies in Ukraine, Poland, Russia, and the average global market capitalisation over the period 2000-2011 (% of GDP)



Source: *The World Bank official website*. – Available from: data.worldbank.org.

It should be noted that the share of the organised market in Ukraine in 2011 was only 13.16%, while 86.84% of trading securities occurred in the over-the-counter market.[9] This predominance of an unorganised market reduces the liquidity and attractiveness of the stock market to foreign investors. The world practice shows that the share of organised market in total trades should be not less than 30%.

So let's analyse the dynamics of the main indicators of financial depth for the period 2000-2011 (Table 2).

On the basis of the data presented in the table, we can make the following conclusions:

- in 2002-2003, there was a kind of jump in dynamics of financial depth indicators and level of confidence in the banking system. During these two years, a significant increase in all indicators of banking system performance occurred, which can be the result of consistently carried out market reforms in the previous period;
- usually the year with high growth rates in the dynamics of financial depth follows a year of a significant decline in these rates. The best evidence of this phenomenon is such indicator as the ratio of market capitalization to GDP. In 2007, this ratio increased by 96.7%

[9] *Annual Report of the State Commission on Securities and Stock Market in 2011*, available from: www.nssmc.gov.ua/activities/annual.

(to $564.33 billion or to 78.3% of GDP), and in 2008 – fell by 82.8% (to $128 billion or 13.5% of GDP). The main reason is the flight of speculative capital from the national stock market;

- the global financial crisis had a smaller impact on the volume of trade on the organised and over-the-counter market, which in 2008 fell only by 11% and by the end of 2011 exceeded its pre-crisis level in more than twice and reached the level of 236.35% of GDP;
- interesting trends were observed in the dynamics of bank assets and assets of non-bank financial institutions (NBFIs). As a result of the global financial crisis, assets of the banking system from 2008 to 2011 decreased by 18%, while assets of NBFIs only by 6.5%. This indicates a much smaller influence of global shocks on the sector of non-bank financial institutions. One reason for this is the much higher share of foreign capital in the banking system compared to the NBFI sector;
- the financial crisis of 2008-2010 caused also a decrease in other financial depth indicators such as the share of bank's liquid liabilities relative to GDP and the ratio of commercial bank loans to GDP;
- at the end of 2011, assets of the banking sector were more than 3 times higher than those for the stock market capitalisation indicating the dominant role of the banking system in the economy.

Table 2

Dynamics of the main indicators of financial depth of the national monetary sector in 2000-2011

Index / Year	Bank assets, % of GDP	Loans issued by commercial banks, % of GDP	Stock market capitalisation, % of GDP	Bank liabilities, % of GDP	Assets of non-bank financial institutions, % of GDP	Volume of organised and over-the-counter trade to GDP
2000	23.44	13.9	6.0	18.01	1.15	21.4
2001	24.87	15.72	3.6	19.43	1.47	29.01
2002	30.02	20.7	7.4	23.88	2.36	45.2
2003	37.5	27.48	8.6	32.88	3.91	76.82
2004	38.93	28.09	18.2	33.59	6.4	90.63
2005	48.45	35.4	29.0	42.68	5.71	96.5
2006	62.52	49.3	39.8	54.69	6.03	91.7
2007	83.17	67.34	78.3	73.51	6.17	104.6
2008	97.68	83.57	13.5	85.1	6.5	93
2009	96.38	81.83	14.3	83.77	6.88	116.7
2010	87.02	69.74	28.9	74.3	6.45	131.3
2011	80.23	62.81	15.5	68.4	6.08	236.35

Sources: calculated by the author on the base of data: *State Statistics Committee,* available from: www.ukrstat.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua.

Evaluating the effectiveness of public and international finance

Indicators of financial depth cover only two major segments of the monetary sector – the banking system and financial markets (the stock market and the sector of non-bank financial institutions). For more complete assessment of monetary sector's effectiveness we should also consider indicators that characterise the performance of two other segments of the monetary sector – public and international finance (Table 3).

Table 3

Key indicators that characterise performance and effectiveness of the public and international finance sectors in Ukraine in 2000-2011

Index / Year	Budget expenditures, % of GDP	Level of GDP redistributed through the consolidated budget, %	Foreign direct investments, % of GDP	External debt, % of GDP
2000	20.87	18.8	1.76	61.1
2001	19.71	26.9	1.81	53.6
2002	19.64	27.4	1.55	51.1
2003	21.00	28.2	2.81	47.5
2004	23.03	26.5	2.64	47.2
2005	25.60	30.4	8.74	45.9
2006	25.20	31.5	5.32	50.6
2007	24.17	30.5	6.46	56
2008	25.47	31.3	5.50	55.9
2009	31.14	29.9	3.97	88.3
2010	28.04	28.7	4.22	86
2011	25.38	30.3	4.25	76.4

Sources: calculated by the author on the base of data: *State Statistics Committee,* available from: www.ukrstat.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua.

The global economic crisis caused a significant increase in public expenditures in 2008-2009 (by 27.7%), an increase in external debt by 57.6% and reduction in foreign direct investments by 38.5%. It should be noted that a significant reduction in foreign direct investments in 2008-2009 was caused not only by a decrease in their volume but also by a noticeable depreciation of the national currency (exchange rate increased from 5.05-5.2672 (in 2007-2008) to 7 .7912-7, 9356 (in 2009-2010)[10]).

There is no clear trend in the dynamics of GDP redistributed through the consolidated budget, but it may be noted that during the years 2005-2011 this figure was within its critical value of 30%.

[10] *The World Bank official website.* – Available from: data.worldbank.org.

Estimation of the monetary sector's impact on the real one

On the basis of financial depth indicators and measures of government and international finance performance for the period 2000-2011 let's find the relationship between these indicators of the monetary sector and GDP, that is to say let's examine, which of these indicators has a greater impact on economic growth in Ukraine. For this reason we will calculate correlation of each of the following indicators and GDP. Results of the correlation analysis are summarised in Table 4.

Table 4

Results of the correlation analysis between indicators of monetary sector's performance and GDP

	GDP	
	Pearson correlation	Significance level
Bank assets	0.985*	0.01
Market capitalisation of listed companies	0.555	0.061
Assets of NBFIs	0.992*	0.01
Loans issued by commercial banks	0.974*	0.01
Bank liabilities	0.983*	0.01
Volume of organised and over-the-counter trade	0.904*	0.01
Budget expenditures	0.990*	0.01
Level of GDP redistributed through the consolidated budget	0.568	0.054
Foreign direct investments	0.909*	0.01
External debt	0.964*	0.01

* – Correlation is significant at the 0.01 level.
Sources: Calculated on the basis of: *State Statistics Committee,* available from: www.ukrstat.gov.ua; *Clearinghouse official website*, available from: www.ac-rada.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua using a Statistical Package IBM SPSS Statistics.

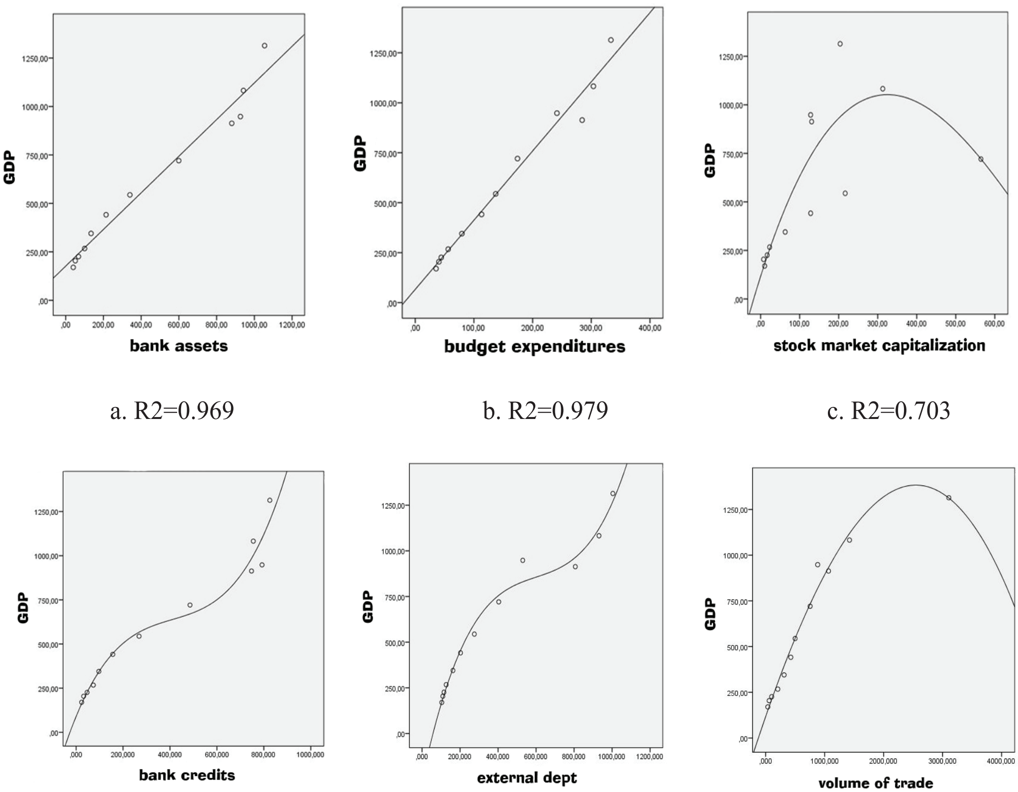
As we can see, the assets of the banking system and non-bank financial institutions, state budget expenditures and external debt are much more connected with growth of GDP than those indicators that characterise the stock market. The clear evidence of this is a high level of Pearson correlation. Insignificant relationship between indicators of the stock market and GDP can be explained by predominance of over-the-counter trade, inadequate capitalisation of the stock market, speculative nature of the vast majority of transactions on the stock exchange, etc.

The correlation analysis demonstrated that there is practically no connection between market capitalisation of listed companies to GDP (correlation coefficient equals to 0.555) and at the significance level of 0.061 this indicator has no practical value in a further analysis, since in the result of sharp downturn in the economy it is difficult to predict its fluctuations.

We can also observe the relationship between the monetary sector and GDP on the scattering charts (Fig. 1).

Fig. 1

Scattering Chart of: a. - bank assets and GDP, b. - budget expenditures and GDP, c. - Ukrainian stock market capitalisation and GDP, d - bank credit and GDP, e - external debt and GDP, f - trading volume and GDP



a. R2=0.969 b. R2=0.979 c. R2=0.703

d. R^2=0.969 e. R^2=0.985 f. R^2=0.984

Calculated on the basis of: *State Statistics Committee,* available from: www.ukrstat.gov.ua; *Clearinghouse official website*, available from: www.ac-rada.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua; *National Bank of Ukraine official website*, available from: www.bank.gov.ua using a Statistical Package IBM SPSS Statistics.

The non-linear relationship between GDP growth and indicators of stock market performance complicates a further analysis of their impact on economic growth. At the same time, the distinct linear relationship between the indicators of banking system and public finance sector indicate a significant impact of these sectors on economic growth.

Conclusions

The monetary sector of Ukraine is still weak and does not provide in full needs of the real sector. Bank loans considerably outweigh the volume of securities transactions; the banking sector still remains the main source of financing and investment in Ukraine. Inadequate development of stock market, imperfect legal framework, low level of protection of investors' rights, negligible market transparency, and non-confidence in stock market – all these factors prevent the stock market to become a driving force of economic growth in Ukraine.

In our opinion, considering significant fluctuations of the stock indices and the capitalisation level, today the national stock market still remains underdeveloped, disproportionate and volatile. Issuers usually enter the market for gaining short-term profit through speculations, lack of openness and transparency of stock market and inefficient government regulation – all that remains serious problems of the national stock market.

In order to strengthen the positive impact of the monetary sector on economic growth we should primarily ensure at the governmental level an effective redistribution of GDP, improve the legal base of monetary sector functioning, which will expand the list of available financial instruments, increase the presence of entities in the financial market and improve the infrastructure of the securities market. This, we believe, will improve the efficiency of the whole monetary sector and strengthen its impact on economic growth in Ukraine.

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Instytucjonalna analiza wpływu ukraińskiego sektora monetarnego na wzrost gospodarczy

Streszczenie

W artykule przeprowadzono analizę instytucjonalnej struktury i głównych wskaźników sektora monetarnego gospodarki Ukrainy. Na podstawie wielkości i oceny wskaźników aktywności poszczególnych segmentów sektora monetarnego możemy stwierdzić, że w latach 2000-2011 monetarny sektor gospodarki narodowej wzrastał w szybszym tempie niż w sferze realnej. Za pomocą analizy korelacji wykazano wpływ poszczególnych segmentów sektora monetarnego na wzrost gospodarczy. System bankowy odgrywa kluczową rolę w sektorze monetarnym gospodarki Ukrainy. Zwiększenie otwartości i przejrzystości na rynku akcji, poprawa regulacji rządowych zwiększy wydajność sektora monetarnego gospodarki Ukrainy.

Słowa kluczowe: sektor monetarny, głębokość finansowa, rynkowa kapitalizacja spółek giełdowych, aktywa bankowe, aktywa niebankowych instytucji finansowych, wydatki budżetowe, korelacja Pearsona, światowy kryzys gospodarczy, nierozliczone systemy gospodarcze.

Kody JEL: N1

Институциональный анализ влияния украинского денежного сектора на экономический рост

Резюме

В статье провели анализ институциональной структуры и основных показателей денежного сектора экономики Украины. На основе величины и оценки показателей активности отдельных сегментов денежного сектора мы можем сказать, что в 2000-2011 гг. денежный сектор народного хозяйства рос более быстрыми темпами, нежели в реальной сфере. С помощью анализа корреляции указали влияние отдельных сегментов денежного сектора на экономический рост. Банковская система играет ключевую роль в денежном секторе экономики Украины. Повышение открытости и транспарантности на рынке акций, улучшение правительственной регуляции повысит производительность денежного сектора экономики Украины.

Ключевые слова: денежный сектор, финансовая глубина, рыночная капитализация котирующихся на бирже компаний, банковские активы, активы не-

банковских финансовых заведений, бюджетные расходы, корреляция Пирсона, мировой экономический кризис, нерасчитанные экономические системы.

Коды JEL: N1

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