"Macroeconomic imbalance to convergence: EU experience for Ukraine"

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MACROECONOMIC IMBALANCE TO CONVERGENCE: EU EXPERIENCE FOR UKRAINE

Abstract

The paper deals with analysis of the mechanism of macroeconomic imbalance estimation and achieving the convergence of national economy. With this purpose the authors summarized the main approaches to define the macroeconomic imbalance. In addition, the main indicators which influence macroeconomic imbalance are allocated. On the basis of obtained results, the authors offer to employ the macroeconomic imbalance procedure which is used in EU countries for investigation. In order to achieve this external, internal and employment indicators in EU were analyzed by authors. Besides, with the purpose to indicate Ukrainian place comparing with EU, in particular with Visegrad Countries, the main indicators of MIP for Ukraine were calculated by the authors. According to the results, the authors made conclusion that the Ukrainian economy can be characterized as not stable (as in Bulgaria, Hungary and the Slovak Republic). Moreover, the authors allocated for the future research the necessity to understand the power of countries impact to each other with the purpose to achieve and save the convergence of national economy.
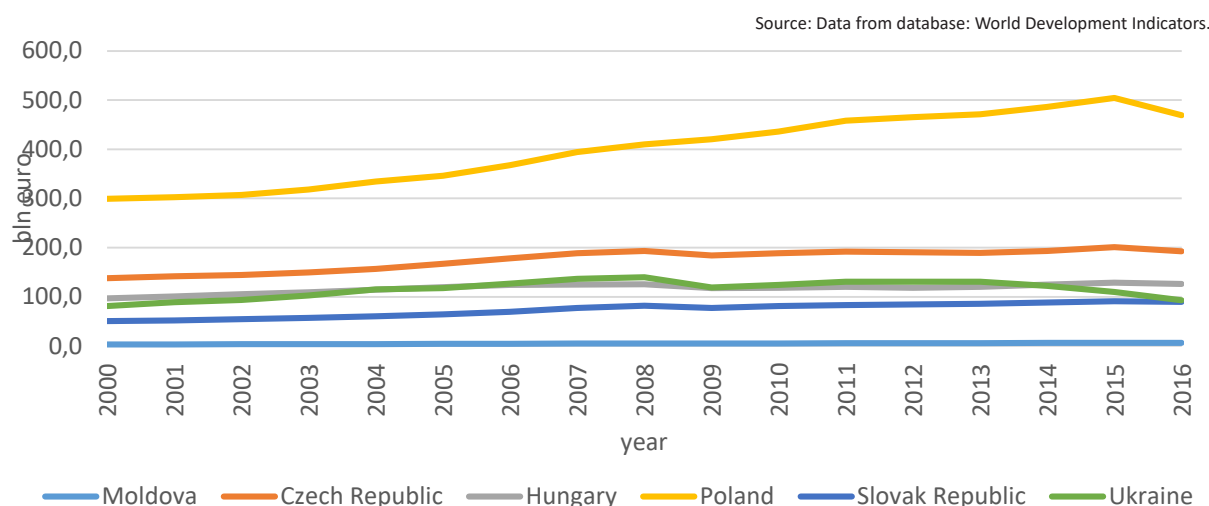
INTRODUCTION

The current situation in Ukraine can be characterized as unstable. The huge number of problems in the economic, political, ecological, social and other spheres restrain the Ukrainian development and as a consequence it will be impossible to achieve the convergence of the national economy. Firstly, unstable political situation provokes the huge level of distrust towards Ukraine from the other countries. Secondly, Ukraine couldn't recover after the financial crisis (2008–2009) which allocated the problem of estimation the macroeconomic imbalances, and in particular private debts and divergences in price and cost competitiveness.

It`s necessary to underline, that EU integration is one of ways to recover macroeconomic balance, to overcome technological backwardness, source of foreign investment and advanced technologies.

The results of analysis of the Ukrainian GDP before and after the EU integration process indicate that GDP is decreasing during 2014–2016 (Figure 1). According to this, the decline of GDP compares to 2013 is 7% in 2014, 9% in 2015 and 14% in 2016. First of all, it is the consequence of the military confrontation in the East of Ukraine and process of reorientation from Russian to EU market.

The analysis of the GDP dynamics in Visegrad group counties (Czech Republic, Hungary, Poland, Slovak Republic) prove that GDP after EU integration in 2004 has been increasing comparatively to 2000. The opposite situation was in 2016. Thus, compare to 2000, GDP in all analyzed countries increased, but less than in 2015, excluding Moldova (Table 1).

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Figure 1. Dynamic of GDP in Ukraine, Moldova and Visegrad Group (2000–2016), bln. euro

In this case it should be underlined that EU integration can provoke some issues for Ukraine. As indicate De Grauwe in his paper one of the main EU problems is the divergence of the competitive positions that have built up since the early 2000s. According to his assumption, this divergence has led to major imbalances in the Eurozone where the countries that have seen their competitive positions deteriorate (mainly the so-called "PIIGS" – Portugal, Ireland, Italy, Greece and Spain) have accumulated large current account deficits and thus external indebtedness, matched by current account surpluses of the countries that have improved their competitive positions (mainly Germany) (De Grauwe, 2012).

Thus, even before the 2008–2009 financial crisis, there was increased awareness that growing divergences in inflation, price competitiveness and current account balances across the euro area and the EU had to be closely monitored, with a view to ensuring a smooth functioning of the monetary union and preventing the risk of sudden stops in capital flows. The 2008–2009 crisis was accompanied by a general reappraisal of risk in financial markets and acted as a trigger for a sudden stop of capital flows and reversals in current account financing. Initially, the impact on external financing was felt mostly in those non-euro area Member States that had been accumulating large current account deficits. As the economic and financial crisis unfolded, financial assistance was also required for some euro-area countries (The Macroeconomic, 2016).

In this direction, the first task for Ukraine is to overcome the macroeconomic imbalance and minimize the negative impact from the EU macroeconomic imbalance with purpose to achieve the stable economic growth and be the equal (not as an appendage) member of EU.

Table 1. Dynamics of GDP in Ukraine, Moldova and Visegrad Group (in comparison with 2000), %

Source: Data from database: World Development Indicators, December 10, 2017.

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Moldova	6%	14%	22%	31%	41%	48%	52%	64%	54%	65%	76%	74%	91%	100%	99%	111%
Czech Republic	3%	5%	9%	14%	21%	30%	37%	40%	34%	37%	39%	38%	37%	40%	46%	40%
Hungary	4%	9%	13%	18%	23%	28%	29%	30%	21%	22%	24%	22%	24%	29%	33%	30%
Poland	1%	3%	6%	12%	16%	23%	32%	37%	41%	46%	53%	55%	57%	63%	68%	57%
Slovak Republic	3%	8%	14%	20%	27%	38%	53%	62%	53%	61%	65%	68%	70%	75%	81%	77%
Ukraine	9%	15%	26%	41%	45%	55%	68%	71%	46%	52%	60%	60%	60%	50%	35%	14%

Note: color means the period after EU integration

2

1.   LITERATURE REVIEW

It should be noted, that EU Regulation No. 1176/2011 "On the prevention and correction of macroeconomic imbalances" defines a macroeconomic imbalance as "any trend giving rise to macroeconomic developments, which are adversely affecting, or have the potential to adversely affect, the proper functioning of the economy of a Member State or of the Economic and Monetary Union, or of the Union as a whole", while excessive imbalances are severe imbalances that jeopardize or risk jeopardizing the proper functioning of the Economic and Monetary Union (EMU).

In general, any deviation from a desirable level can be considered as an imbalance. However, not all imbalances are detrimental or require policy interventions as they may be part of an economy's dynamic adjustment. Imbalances that require close monitoring and possibly policy interventions relate to developments that could imply threats to macroeconomic stability. For example, having a large and persistent current account deficit could be considered an imbalance when reflecting an excess of imports over exports related to competitiveness problems (Regulation, 2011).

Knight and Wang Wei highlighted two types of imbalances: internal and external. Underlying that for both the internal and external imbalance is the inter-temporal distribution of consumption:

1)   more investment relative to consumption in the present raises consumption in the future;

2)   more exports relative to imports increases foreign assets, so making resources available for consumption in the future (Knight & Wang Wei, 2011).

According to the official EU report "How to Deal with Macroeconomic Imbalances?", macroeconomic imbalances refer to the existence of distortions in the external position, i.e. the current account of the Member States, vis-à-vis each other, rather than the position of the whole area vis-à-vis the rest of the world (Gros, 2012).

Wieser in his work (Wieser, 2011) defined macroeconomic imbalance as the (negative or positive) position of a domestic, external or financial variable which may (if uncorrected over time) make the national savings/investment balance so untenable that it self-corrects abruptly, thereby causing significant adjustment shocks.

Fatas approved the following thoughts that the current recession is fundamentally linked to excesses in financial markets and asset prices; there were still some classic macroeconomic imbalances that preceded the crisis (Fatas, 2009).

In the paper (Essl, 2011) the macroeconomic imbalance was characterized as a current account deficit and current account surplus. Some scientists suggested that monetary unions strengthen the interactions of macroeconomic imbalances.

Summarizing the results of analyzing, traditionally, macroeconomic imbalances are defined as the major differences between supply and demand or some distortions in one or more sectors that affect the entire economy. Correcting macroeconomic imbalances can also help to achieve the targets for macroeconomic convergence.

The obtained results showed that EU authorities and huge number of scientists have been working on some indicators of macro-economic imbalance to define the risk for public debt sustainability in EU. Some researchers proposed to draw attention on the indicators to estimate EU debt crisis and determined that large composite indicators have a higher predictive power.

According to the (Tunay, 2016) EU macroeconomic imbalance influences on the emerging economy, including Ukraine. In this direction, it is necessary to understand the level and power of impact on Ukrainian economy. Furthermore, the Ukrainian macroeconomic imbalance should be assessed with the purpose to implement corrective mechanism and prevent the negative consequences of macroeconomic imbalance.

2.   METHODS

The research is based on the traditional methods of scientific knowledge: analysis and synthesis – in identifying trends of EU countries' development and their process to achieve the convergence of

national economy; comparison and compilation – due to the analyzing the EU experience to achieve the macroeconomic balance; the statistical and mathematical methods - due to the evaluation the macroeconomic imbalance in Ukraine and Visegrad countries; the scientific support methods – to summarize and to formulate conclusions. These approaches allow allocating the challenges and perspectives of Ukraine economy on the way to achieve the convergence of national economy. In addition, it gives opportunity to take into account the best EU practice with purpose to adopt the national policy and strategy. The purpose of the paper is to evaluate the sources of macroeconomic imbalances in Ukraine. Allocation of main sources of imbalances is an important aspect in policy to achieve the convergence of national economy. In addition, the EU macroeconomic imbalances should be estimated in order to assess their impact on the Ukrainian economy.

3. RESULTS

It should be noticed, that new macroeconomic imbalance procedure (MIP) was introduced in 2011, after the financial crisis showed that macroeconomic imbalances – such as a large current account deficit or a real estate bubble – in one country can affect others.

According to EU commission the MIP aims to identify, prevent and address the emergence of potentially harmful macroeconomic imbalances that could adversely affect economic stability in a particular EU country, the euro area, or the EU as a whole.

The analysis in the alert mechanism report (AMR) builds on the economic reading of a scoreboard of 14 headline indicators covering the most relevant areas of macroeconomic imbalances, competitive-

Source: Compiled by authors based on (Scoreboard, 2017).
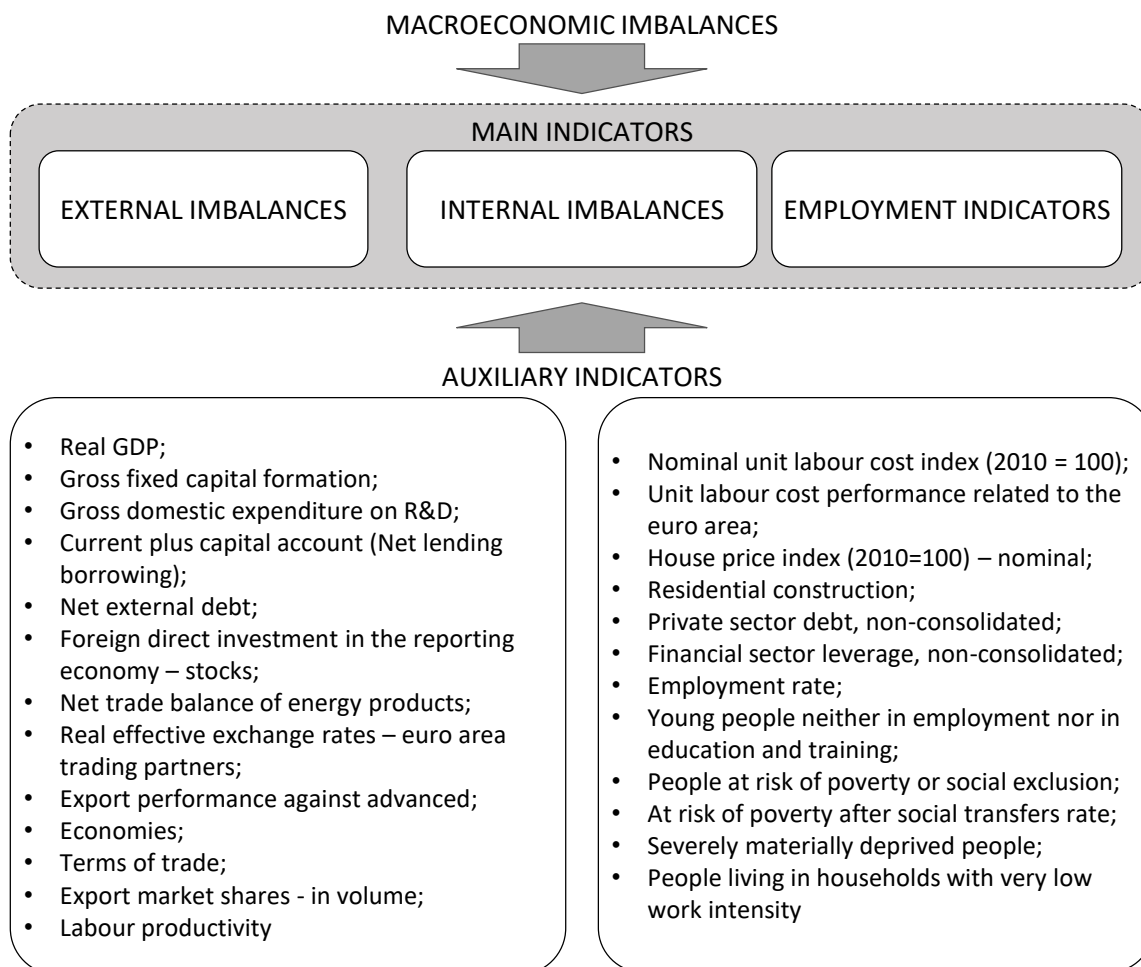
Figure 2. The scheme of measuring the macroeconomic imbalance

ness, and adjustment issues. These 14 indicators are complemented by 25 auxiliary indicators providing additional information (Figure 2).

The scoreboard is designed to capture the most relevant internal and external aspects of macroeconomic imbalances through a limited set of relevant indicators of high statistical quality (Macroeconomic, 2017).

The headline indicators consist of the following 14 indicators and indicative thresholds, covering the major sources of macroeconomic imbalances (Table 2).

It should be underlined that according to the MIP for the calculation of some of the headline indicators is used GDP as a denominator. The variable used is GDP at market prices, sourcing from the National accounts. Thus, the main indicators using GDP or other data from the national accounts as a denominator or as a basis for compilation of the indicator are:

1. Current account balance.
2. Net international investment position.
3. Nominal unit labor cost.
4. Private sector credit flow (consolidated).

5. Private sector debt (consolidated).
6. Financial sector corporations' liabilities.
7. General government gross debt.
8. House price index.

According to the abovementioned mechanism the macroeconomic imbalance of EU countries in 2016 were estimated. The results of calculations are presented in the Table 3.

The results of analysis indicated, that among the external indicators in most countries net international investment position as percent of GDP is less than thresholds –35%. Other indicators correspond with the thresholds. Through the internal indicators, the most countries don't correspond with the thresholds on the following indexes: Private sector debt (consolidated) in % of GDP; Year-on-year changes in house prices relative to a Eurostat consumption deflator (HP); General government sector debt in % of GDP (GGS). It should also be underlined that unemployment rate in the half of EU is higher than thresholds 10%.

In 2016 only Luxemburg has the youth unemployment rate – 2.2%. Other EU countries have the less than thresholds –2.0%.

Table 2. The main indicators to measure the macroeconomic imbalances

Source: Compiled by authors on the literature basis (Scoreboard, 2017).

	INDICATORS			THRESHOLDS	
EXTERNAL IMBALANCES	3-year backward moving average of the current account balance as percent of GDP (CAB)			+6% and −4%	
	Net international investment position as percent of GDP(NIIP)			−35%	
	5-year percentage change of export market shares measured in values(EMS)			−6%	
	3-year percentage change of the real effective exchange rates based on HICP/CPI deflators, relative to 41 other industrial countries(REER)			for countries	
				euro area	non-euro area
				−/+5%	−/+11%
	3-year percentage change in nominal unit labor cost(NULC)			+9%	+12%
INTERNAL IMBALANCES	Private sector debt (consolidated) in % of GDP (PSD)			133%	
	Private sector credit flow in % of GDP (PSC)			14%	
	Year-on-year changes in house prices relative to a Eurostat consumption deflator (HP)			6%	
	General government sector debt in % of GDP (GGS)			60%	
	3-year backward moving average of unemployment rate (UR)			10%	
	Year-on-year changes in total financial sector liabilities (FL)			16.5%	
EMPLOYMENT INDICATORS	3-year change in p.p. of the activity rate (AR)			−0.2%	
	3-year change in p.p. of the long-term unemployment rate (LUR)			+0.5%	
	3-year change in p.p. of the youth unemployment rate (YUR)			+2%	

Table 3. MIP Scoreboard 2016

Countries	External imbalances					Internal imbalances						Employment indicators		
	CAB	NIIP	REER	EMS	NULC	HP	PSC	PSD	GGS	UR	FL	AR	LUR	YUR
BE	−0.3	51.2	−0.4	−2.31	−0.6	1.00	13.3	190.1	105.7	8.3	1.2	0.1	0.1	−3.6
BG	1.8	−47	−4.7	8.15	9.50	7.10	4	104.9	29	9.4	11.1	0.3	−2.9	−11.2
CZ	0.5	−24.6	−3.7	2.86	2.9	6.70	4.4	68.7	36.8	5.1	14.5	2.1	−1.3	−8.4
DK	8.4	54.8	−1.5	−4.23	3.4	4.2	−10.4	210.7	37.7	6.3	3.3	1.90	−0.40	−1
DE	8.1	54.4	−2.6	2.79	5.2	5.4	3.8	99.3	68.1	4.6	5.2	0.3	−0.6	−0.7
EE	1.4	−37.1	4.5	−0.73	13.4	3.8	5.9	115.4	9.4	6.8	7.2	2.4	−1.7	−5.3
IE	5.5	−176.2	−6.6	59.75	−20.5	6.60	−19	278.1	72.8	9.5	2.5	0.7	−3.6	−9.6
EL	−1	−139.4	−3.9	−18.95	−3.30	−2.00	−1.70	124.70	180.8	25	−16.6	0.7	−1.5	−11
ES	1.4	−83.9	−4.3	2.18	0.40	4.7	−1.00	146.70	99	22.1	0.9	−0.1	−3.5	−11.1
FR	−0.7	−15.7	−3.1	−2.42	1.40	1	6.20	146.90	96.5	10.3	4.3	0.7	0.2	−0.3
HR	2.9	−70.1	0.1	8.12	−5.90	2.1	−0.10	106.10	82.9	15.6	2.5	1.9	−4.4	−18.1
IT	2.1	−9.8	−3.4	−2.83	1.9	−0.80	0.6	113.6	132	12.1	3.2	1.5	−0.2	−2.2
CY	−3.6	−127.8	−6.5	−3	−6.20	1.6	10.20	344.60	107.1	14.7	0.7	−0.2	−0.3	−9.8
LV	−0.3	−58.9	4.9	9.25	16.5	7.4	0.3	88.3	40.6	10.1	5.8	2.3	−1.7	−5.9
LT	−0.3	−43.2	5.4	5.38	14.7	4.5	4.3	56.2	40.1	9.2	16.3	3.1	−2.1	−7.4
LU	5	34.7	−1.5	26.17	2.5	5.9	1.5	343.6	20.8	6.3	7.5	0.1	0.4	2.2
HU	3.6	−65	−5	−0.37	3.3	13.6	−3.6	77	73.9	6.5	19.5	5.4	−2.5	−13.7
MT	6.7	47.6	−2.5	8.66	−0.1	4.80	11.1	128.4	57.6	5.3	1.7	4.1	−1	−2
NL	8.8	69.1	−2.3	0.09	−1.10	4.4	1.50	221.50	61.8	6.8	5.30	0.3	0	−2.4
AT	2.2	5.6	1	−3.99	5.8	7.2	3.2	124	83.6	5.8	−2.4	0.7	0.6	1.5
PL	−1	−60.7	−5	18.13	2.10	2.5	4.7	81.6	54.1	7.6	8.9	1.8	−2.2	−9.6
PT	0.3	−104.7	−1.9	5.75	0.90	6.1	−2.20	171.40	130.1	12.6	−0.2	0.7	−3.1	−9.9
RO	−1.3	−49.9	−2.5	23.58	6.00	6.5	0.60	55.80	37.6	6.5	7.6	0.7	−0.2	−3.1
SI	5.1	−36.9	−0.5	3.98	0.7	3.6	−0.8	80.5	78.5	8.9	3.2	1.1	−0.9	−6.4
SK	−0.7	−62.4	−1.6	7.29	3.5	7	9.2	94.7	51.8	11.5	8.5	2	−4.2	−11.5
FI	−1.2	−2.3	0.5	−14.09	2.1	−0.3	2.2	149.3	63.1	9	4.5	0.7	0.6	0.2
SE	4.6	11.2	−9.2	−7.92	2	7.6	7.6	188.5	42.2	7.4	9	1	−0.1	−4.7
UK	−5.5	−1.1	0.2	−0.12	3.1	5.5	8.2	168.1	88.3	5.4	11.6	0.9	−1.4	−7.7

The analysis of the Visegrad Countries during 2014–2016 revealed that all external indicators of MIP are in the thresholds, excluding the net international investment position as percent of GDP (Figure 3). Thus, 3-year backward moving average of the current account balance as percent of GDP, 5-year percentage change of export market shares measured in values, 3-year percentage change of the real effective exchange rates based on HICP/CPI deflators, relative to 41 other industrial countries, 3-year percentage change in nominal unit labor cost are in the framework of the thresholds (Table 4).

Table 4. The external indicator of MIP (excluding NIIP) of the Visegrad Group in 2014–2016

Countries	CAB			REER			EMS			NULC		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
CZ	−0.6	0	0.5	−10	−8.1	−3.7	−5.82	−1.81	2.86	4	0.1	2.9
HU	2.3	2.9	3.6	−6.8	−7.1	−5	−16.32	−7.76	−0.37	5.9	−0.2	3.3
PL	−2.4	−1.3	−1	−1	−1.3	−5	5.15	9.57	18.13	2.9	0.3	2.10
SK	1.3	0.4	−0.7	1.2	−1.1	−1.6	2.33	4.51	7.29	1.8	2.4	3.5
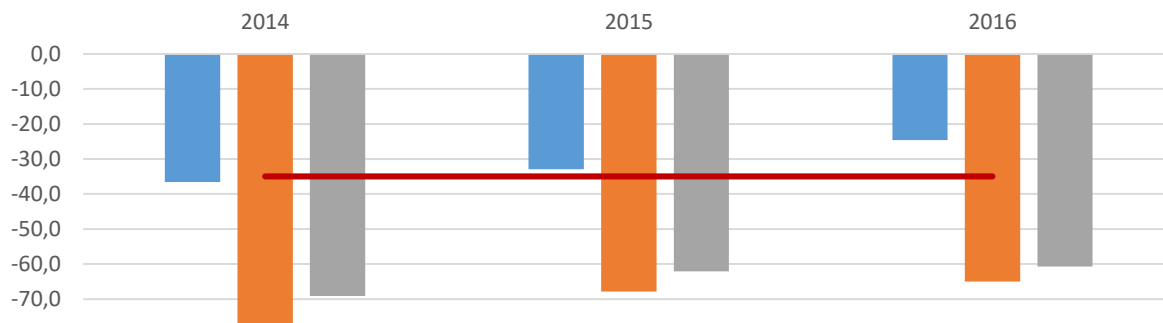
Figure 3. Net international investment position as percent of GDP of the Visegrad Countries, 2014–2016

It should be noticed, that Ukrainian official databases don't correspond to the EU databases; as a consequence it is very difficult to analyze the microeconomic imbalance according to the MIP, making the deviations in the calculations. So, it is necessary to adopt Ukrainian statistics according to the EU standards.

However, the results of analysis revealed that Ukraine has approximately the same results as Visegrad Countries in 2016 on external and internal imbalances, employment indicators. The obtained results of the internal indicators are shown at the Figure 4.
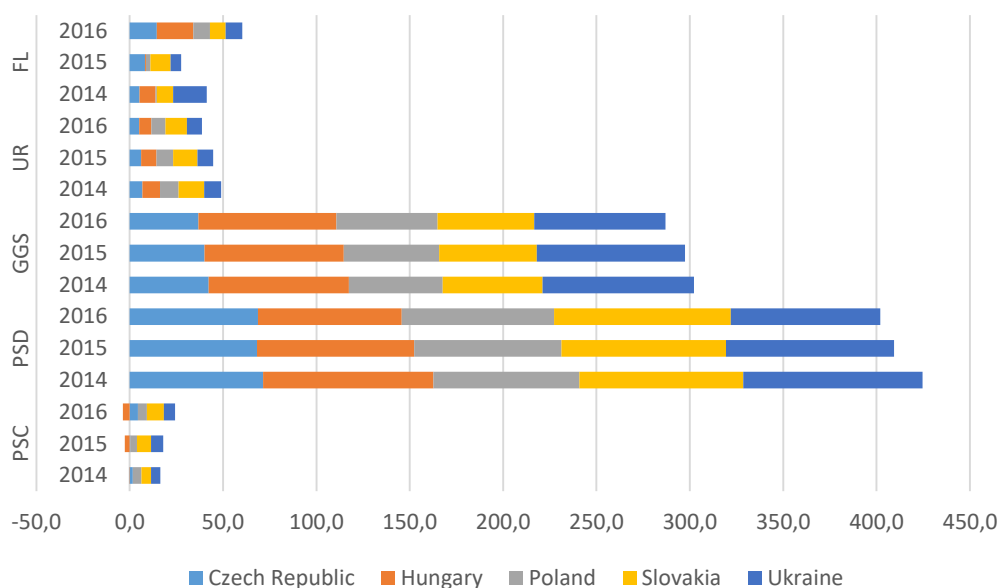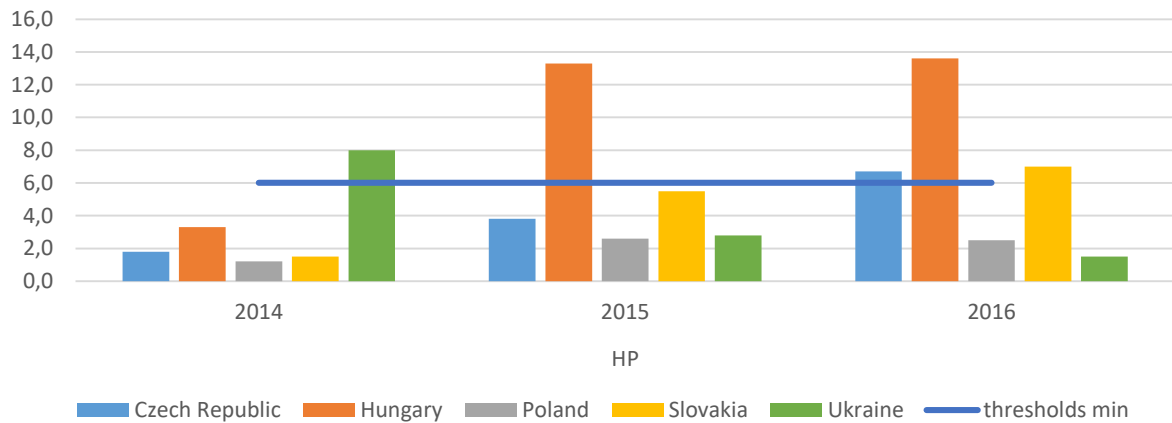
Figure 4. The internal indicator of MIP (excluding HP) of Visegrad Group and Ukraine in 2014–2016

Figure 5. House price index in Ukraine and Visegrad Countries, 2014–2016

It should be noted, that among the internal indicators, house price index in Ukraine (in 2014), Slovak Republic (2015, 2016) and Hungary (2016) is higher than thresholds – 6% (Figure 5).

The third block of MIP indicators are employment indicators. According to the calculation in all Visegrad Countries as in Ukraine all employment indicators (3-year change in p.p. of the activity rate; 3-year change in p.p. of the long-term unemployment rate; 3-year change in p.p. of the youth unemployment rate) are in the thresholds. The calculated results are presented at the Figure 6.

CONCLUSION

The results of the analysis revealed that MIP indicators in some of the EU countries correspond to the indicators' thresholds, in some of them – not. In this case, it is necessary to understand and estimate changes' influence in some countries on others. Besides, the Ukrainian indicators correspond with such countries as Bulgaria, Slovak Republic, and Hungary, which economies can't be characterized as a stable. On the other hand, Ukraine has already started the EU integration process and it is necessary to
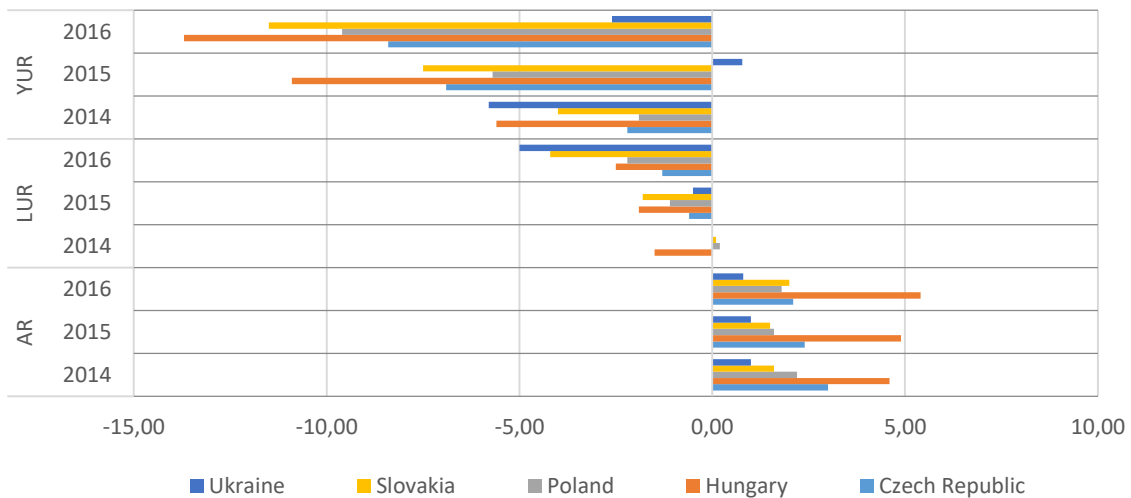
Figure 6. The employment indicators of the macroeconomic imbalance estimation in Ukraine and Visegrad Countries, 2014–2016

understand all consequences and opportunities of that process for Ukraine in order to achieve the convergence of national economy. The main direction for further investigations is the estimation how the EU integration process influence the Ukrainian MIP indicators.

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REFERENCES

1. Ahangari, A., Arman, A., & Saki, A. (2014). The estimation of Iran's macroeconomics instability index. *Management Science Letters, 4*(5), 871-882.

2. Åslund, A., & Dąbrowski, M. (2008). *Challenges of globalization: Imbalances and growth.* Peterson Institute.

3. Briguglio, L., Cordina, G., Farrugia, N., & Vella, S. (2009). Economic vulnerability and resilience: concepts and measurements. *Oxford development studies, 37*(3), 229-247.

4. Bützer, S., Jordan, C., & Stracca, L. (2013). Macroeconomic imbalances: a question of trust? *Working paper No. 1584,* European Central Bank.

5. Chigrin, O., & Pimonenko, T. (2014). The Ways of Corporate Sector Firms Financing for Sustainability of Performance. *International Journal of Ecology & Development, 29*(3), 1-13.

6. Commission Staff Working Document. Statistical Annex Accompanying the Document Report from the Commission to the European Parliament. (2017). The Council, the European Central Bank and the European Economic and Social Committee Alert Mechanism Report 2018. Retrieved from http://ec.europa.eu/eurostat/documents/16624/0/2018_Statistical_Annex.pdf/c18b7305-4b1e-408f-b31e-77d63cd49dde

7. De Grauwe, P. (2012). In search of symmetry in the Eurozone. *CEPS Policy Brief, No. 268.* Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2060116

8. Dealing with macroeconomic imbalances (2017). Retrieved from https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/macroeconomic-imbalance-procedure/dealing-macroeconomic-imbalances_en

9. Duenwald, C., Gueorguiev, N., & Schaechter, A. (2007). Too much of a good thing? Credit booms in transition economies: The cases of Bulgaria, Romania, and Ukraine. In *Rapid Credit Growth in Central and Eastern Europe* (pp. 236-263). London: Palgrave Macmillan.

10. Easterly, W., & Kraay, A. (2000). Small states, small problems? Income, growth, and volatility in small states. *World development, 28*(11), 2013-2027.

11. Essl, S., & Stiglbauer, A. (2011). Prevention and correction of Macroeconomic imbalances: the excessive imbalances Procedure. *Monetary Policy & the Economy, 4*(11), 99-113.

12. Fatas, A. (2009). Macroeconomic imbalances and the current recession. Retrieved from http://fatasmihov.blogspot.com/2009/03/macroeconomic-imbalances-and-current.html

13. Global House Prices Defy Economic Climate in 2015 (2015). Retrieved from http://content.knightfrank.com/news/8250/1844-article-1.pdf

14. Gros, D. (2012). How to Deal with Macroeconomic Imbalances? European Parliament Briefing Note. Retrieved from www.europarl.europa.eu/document/activities/cont/201204/20120419ATT43526/20120419ATT43526EN.pdf

15. Gros, D., & Busse, M. (2013). The Macroeconomic Imbalance Procedure and Germany: When is a current account surplus an "imbalance"? *CEPS Policy Briefs, No. 301.* Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2360470

16. Guarata, N., & Pagliacci, C. (2017). Understanding Financial Fluctuations and Their Relation to Macroeconomic Stability. Inter-American Development Bank.

17. Hurduzeu, G., & Lazar, M. I. (2015). An assessment of economic stability under the new European economic governance. *Management Dynamics in the Knowledge Economy, 3*(2), 301.

18. Knight, J., & Wang Wei (2011). China's macroeconomic imbalances: causes and consequences. Retrieved from https://www.bofit.fi/globalassets/bofit/tutkimus/konferenssit-ja-tyopajat/2010-2015/china2011/knight-chinas-macroeconomic-imbalances-may-2011.pdf

19. Kolodko, G. W. (1993). Stabilization, recession and growth in a post socialist economy. *MOCT-MOST: Economic Policy in Transitional Economies, 3*(1), 3-38.

20. Lungu, M. (2015). Sources of Macroeconomic Imbalances in Malawi and Policy Solutions. *Global Advanced Research Journal of Economics, Accounting and*

Finance 3(2), 26-40. Retrieved from http://garj.org/garjeaf/8/2015/3/2/ sources-of-macroeconomic-imbalances-in-malawi-and-policy-solutions

21. Lyulyov, O., & Shvindina, H. (2017). Stabilization pentagon model: application in the management at macro- and micro- levels. *Problems and Perspectives in Management, 15*(3), 42-52. http://dx.doi.org/10.21511/ppm.15(3).2017.04

22. Macroeconomic imbalance procedure. Retrieved from https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/macroeconomic-imbalance-procedure_en

23. Macroeconomic indicators (2017). State Statistics Service of Ukraine. Retrieved from http://www.ukrstat.gov.ua/

24. OECD System of Unit Labor Cost Indicators (2017). Retrieved from http://stats.oecd.org/mei/default.asp?rev=3

25. Regulation No. 1176/2011 of the European parliament and of the council of 16 November 2011 on the prevention and correction of macroeconomic imbalances. *Official Journal of the European Union*. Retrieved from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:306:0025:0032:en:PDF

26. Scoreboard (2017). Information on headline and auxiliary indicators included in the macroeconomic imbalance procedure scoreboard. Retrieved from https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/macroeconomic-imbalance-procedure_en

27. Segura, E., Pogarska, O., Ustenko, O., Kozyarivska, L., & Kasyanenko, S. (2009). *Ukraine's Financial Crisis: Past, Present and Future*. Kyiv: The Bleyzer Foundation. Retrieved from http://www.bleyzerfoundation.org/files/tbf_reports/Ukrainian%20Financial%20Crisis%202009.pdf

28. Strategy of Sustainable Development "Ukraine–2020" (2015). Retrieved from http://zakon1.rada.gov.ua/laws/show/5/2015#n10

29. Taube, M. G., & Weber, M. R. (1999). On the fast track to EU accession: macroeconomic effects and policy challenges for Estonia. *IMF Working Paper No. 99/156*.

30. The indicators in the Macroeconomic Imbalance Procedure (2017). Eurostat. Retrieved from http://ec.europa.eu/eurostat/web/macroeconomic-imbalances-procedure/indicators

31. The Macroeconomic Imbalance Procedure (2016). Rationale, Process, Application: A Compendium. *Institutional Paper, 039*. Retrieved from https://ec.europa.eu/info/sites/info/files/file_import/ip039_en_2.pdf

32. Tunay, K. B., & Yüksel, S. (2016). Interact of Macroeconomic Imbalances in Vulnerable Emerging Economies: The Case of Fragile Eight. *Conference: ICOMEP 2016*. Retrieved from https://www.researchgate.net/publication/310954631_interact_of_macroeconomic_imbalances_in_vulnerable_emerging_economies_the_case_of_fragile_eight

33. Ukraine: Selected Issues (2017). International Monetary Fund. *IMF Country Report No. 17/84*.

34. Vasylenko, Y., & Bazhenova, O. (2014). A Causal Macroeconomic Model of Devaluation and Inflation Impact on the Economy of Ukraine. *Ekonomika*, *93*(1), 57.

35. Wieser, T. (2011). Macroeconomic Imbalances within the EU: Short and Long Term Solutions. In *Proceedings of the 39th Economics Conference*.