

MACROECONOMIC MANAGEMENT AND ITS IMPACT ON CURRENT ACCOUNT (CASE OF SLOVAKIA AND POLAND)

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Abstract: Studying the macroeconomic management is an integral part of economic growth because it causes the increasing wealth, and analysis of the factors determining it, can explain the differences in the level and pace of development in different countries. Special research interest causes the characteristics of macroeconomic management, economic growth and its relations with current account. Despite the improvement of current account balance there is a decline in international investment position. With the immanent volatility of the world economy it is of a special interest the management of economic factors on current account in a national economic system that is functioning in the frame of common macroeconomic environment (The EU). We analyze the impact of macroeconomic factors on the current accounts in Slovakia and Poland.

Key words: macroeconomic management, current account, growth, volatility, macroeconomic impact, openness, export oriented, industrial enterprise.

Introduction

The “wider” Europe is undergoing significant challenges of macroeconomic character, including the interdependence not only within the EU but also from the large open economies.

The issue of economic growth has not only economic significance, but also serves as a prerequisite for the further development of the society and the state.

Slovakia and Poland have a long-standing bilateral relations based on historical experience. At the beginning of the path of European integration, the two countries came together in the format of the Visegrad Group.

However, in the process of co-existence within the EU, the nature of macroeconomic indicators in Slovakia and Poland were different. One of the main differences between managing the economic systems is a level of integration into the EU: Slovakia joined the euro area in 2009, while in Poland this question remains open.

Literature review

Searching on determinants of current account is related to savings and investments decisions. Current account shows a country’s position towards the rest of the world (lender or borrower). There are standard variables used in modeling such as export, import, effective real exchange rate, GDP, interest rates. Study worked out by

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Sachs (1981) involved household consumption and government fiscal expenditure, Chinn and Prasad (2000) applied macroeconomic determinants of saving and investment and found that current account balances are positively correlated with government budget balances and initial stocks of net foreign assets.

Research paper by Lanzafame (2013) states, that the balance of payments represents the ultimate constraint on long-run growth and give remarkable support to the Keynesian vision of economic growth as being demand-driven. Razmi (2010) emphasizes that positive trends in technological progress may hurt or help an economy that faces balance of payments constraints. The impact depends partly on the sector that the progress takes place in and partly on the structure of the economy. In other words, it is not just the direction of shocks to supply (or demand), but also the sectoral composition of these shocks that matters.

Majority of research papers on external deficit count with a set of countries, however, there is a need for searching on determinants of current account in individual economies, because it helps to improve management system of macroeconomic processes. For Slovakia and Poland there are articles elaborated at the National Bank institutes dealing with current accounts. Zanghieri (2004) was dealing with current account dynamics in new EU members stressing the importance of government deficits. In Poland the current account deterioration was caused by a strong increase in investment at the end of the 90s and drop in savings. Slovakian external deficit was due to the decline in savings and increase in investment after 1997 (Zanghieri, 2004). Ketenci (2010) states that government budget deficit shocks have led to deficit in current accounts in countries under review involving Slovakia. Kiseľáková and Kiseľák (2013) note that the Slovak economy (by real GDP growth in 1.8 %) recovered very strongly after the impacts of global crisis in 2012 and will remain among strongest in EU and OECD, besides the main priorities now are restoring public finance while fostering drivers of growth and ensuring the funding of items to promote growth such as education and active labour market policies.

In our article, we are applying a standard set of variables connected to consumption and investment decision. The paper is organized as follows. After the introductory part and the overview of corresponding literature there is a section devoted to the macroeconomic overview of Slovakia and Poland. Part three presents the data, model and its interpretation. The last one concludes.

Macroeconomic development in Slovakia and Poland

The collapse of communism in the late 1980s dunked Central and Eastern Europe into one of the most profound economic transformation of all times. The process of transformation in Central and Eastern Europe has provided strong evidence of interdependent relationships between macroeconomic management processes and structural reforms.



Figure 1. GDP in Poland and Slovakia, % to previous year

Starting from 2003 there is a steadily growth of GDP both in Poland and Slovakia (Figure1). One of the factors of sustained economic growth was the EU accession. During the analyzing period it should be noted, that the Polish GDP growth, even under the influence of the world economic crunch showed positive results in 2009. While for the Slovak GDP the crisis period of 2008-2009 was marked by a sharp drop.

New members of the European Union (EU) have, on average, run current account (CA) deficits that were considerably higher than the average deficit experienced by other emerging market economies (Rahman, 2008).

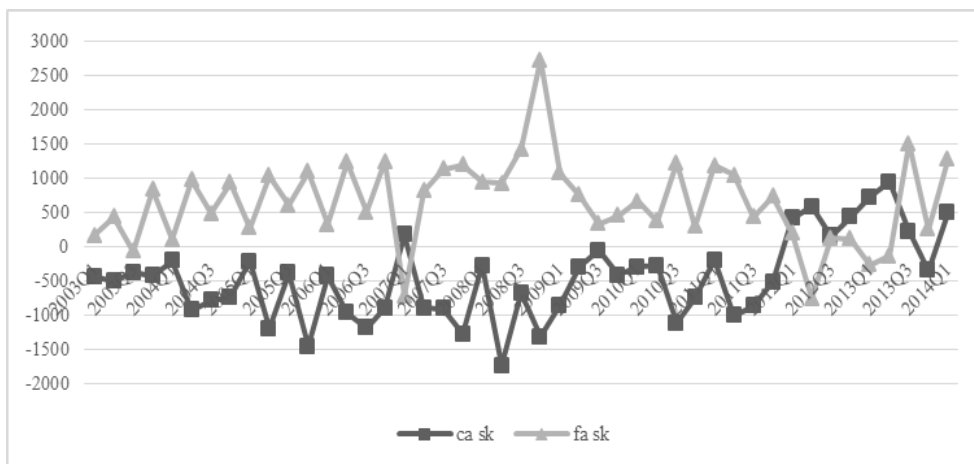


Figure 2. Balance of Payments of Slovakia, mln. Euros

The full statistical observation of the Slovak Balance of Payments started in 1997. For a long period, the current account had a deficit (Figure 2). However, the strong growth of the current account was due to a significant increase in the external economic relations of the Slovak Republic. Gradual economic recovery after the crisis in 2009 had a positive impact on the development of current account (including foreign trade) in Slovakia starting from 2010.

Largest trading partners of Slovakia in 2013 continued to be Germany, Czech Republic, Russia, Poland, Hungary, France, Austria, Italy, South Korea and China. The largest negative trade balance was achieved with three countries: the Republic of Korea (5.5 billion Euros), Russia (3.2 billion Euros), China (2.3 billion Euros). The largest surplus Slovakia was able to achieve in trade with Germany (3.5 bn. Euros), the Czech Republic (3.1 billion. Euros), Poland (2.9 bn. Euros) and Austria (2.7 bn. Euro).

The components of the foreign trade turnover of Slovakia were mostly balanced and adapted to the conditions of EU membership. During the period 2003-2013 the volume of the Slovak exports grew by more than 200%. The largest export items were machinery and equipment, vehicles, metals (2013). A characteristic feature of the current account of Slovakia is its immanent deficit.

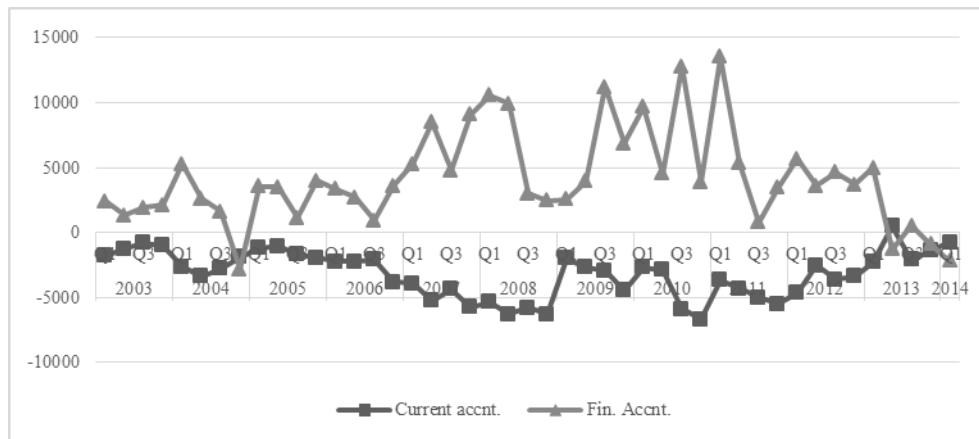


Figure 3. Balance of Payments of Poland, mln. Euros

The Polish GDP is characterized by general dynamics of Central European countries: an active growth phase till 2008, and a significant drop in 2009. However, this period Poland has experienced significant success in both national reforms, and in the integration aspirations. Since 2004, national income increased, the economy became more open.

This process took place with simultaneous imbalances: current account deficit of the balance of payments, negative trade balance and dropping level of net investment state positions (Figure 3).

In comparison with Slovakia, the Polish economy is less export-oriented (according to the World Bank Poland gets 46% of GDP in exports of goods and services, while in Slovakia this share is 93%). In the negative sense of the current account deficit offset by inflows of foreign capital to Poland because of the country's attractiveness for foreign investment.

However, such an amount of capital had taken its toll; eventually resulting investment income worsened the financial account balance of payments and led to a sharp negative balance in the international investment position of Poland.

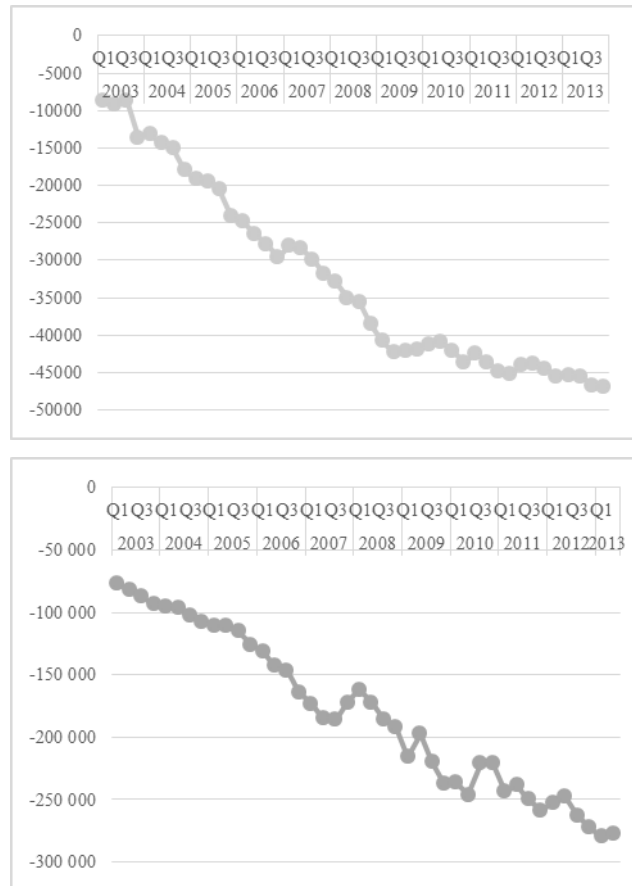


Figure 4. Net investment position in Slovakia (top) and Poland (down), mln. euros

The Impact of Balance of Payments' Accounts on the GDP in Slovakia and Poland

In modern economic literature there is a lack of evidences from the impact of net investment position and GDP growth rate on the current account.

In order to estimate the regression model we took the macroeconomic data from Eurostat. We use the quarterly data for all the variables from 2003Q1 to 2013Q4. Following variables were used in modelling: current account, GDP growth rate to previous year, Central bank main refinancing rate, foreign government debt in real terms, industrial enterprise in real terms, exchange rates of the Polish zloty to EUR, Slovak koruna to EUR and after 2008 – EUR to USD, net international investment position in real terms.

We propose a following model for the Slovak and Polish cases:

$$CA=f(\text{GDP_growth, Rate, Cons, SKK/PLZ, NIIP}), \quad (1)$$

Where:

CA – current account as a share of GDP (quarterly data)

GDP – GDP growth rate (quarterly data)

Rate - Interest rate (refinancing rate of Central bank)

Cons – national consumption (quarterly data) in absolute values, mil. EUR

SKK/PLZ – exchange rate of SKK/EUR to EUR/ USD, Polish zloty to EUR

NIIP – net international investment position (quarterly data)

We run unit root test for the time series. According to the tests for stationarity on a number of variables have yielded conflicting results, so to determine more accurately the order of integration time series we ran Phillips-Perron test (Table 1 and 2).

Table 1. Unit root test for Slovak case

Phillips–Perron test						
	CA	GDP_growth	Rate_sk	Cons	SKK	NIIP_sk
c	***	**	-	-	-	*
ct	***	**	-	-	-	*
c - diff	***	***	***	***	***	***
ct - diff	***	***	***	***	***	***
*p < 0.10; ** p < 0.05; *** p < 0.01;						

Table 2. Unit root test for Polish case

Phillips–Perron test						
	CA	GDP_growth	Rate_pl	Cons	PLZ	NIIP_pl
c	-	**	***	-	-	**
ct	-	**	***	-	-	**
c - diff	***	***	***	**	**	***
ct - diff	***	***	***	**	**	***
*p < 0.10; ** p < 0.05; *** p < 0.01;						

Regression results from estimating of the equation using OLS method is reported in Table 3. Variables (exchange rate in Slovakia, consumption in Slovakia, interest rate of the Slovak National Bank, Exchange rate in Poland, consumption in Poland) are stationary in their first differences, they are integrated of order one. We use EViews software package for modelling.

Table 3. Current account regressions (CA_SK, CA_PL) adjusted

SLOVAKIA		POLAND	
Variable	CA_SK (OLS estimation)	Variable	Δ CA_PL (OLS)
CA(-1)	-0.14 (-0.91)	Δ PLZ(-1)	-9.59*** (-3.93)
GDP growth	149.5*** (2.84)	Δ Consumption (-1)	-0.001*** (-3.85)
Δ Exchange rate	36.1** (1.74)	NIP	2.98*** (2.25)
Δ Consumption	-0.96** (-2.04)	Time	0.011** (-2.61)
NIP	0.08*** (3.21)		
Δ Interest	-391.6** (-2.28)		
Time	104*** (4.21)		
R ²	0.59	R ²	0.39
DW	1.78	DW	1.69
Note: ***, **, * imply significance at 1%, 5%, 10% levels respectively t-statistic (in brackets) Δ – first difference operator			

The results from the OLS estimation show that:

- for Slovakia we identified significant results of the effect of macroeconomic management results on the current account. Common to all Eastern European economies is an increase of external borrowing level on the immanent base. There is a positive impact of GDP growth on the Slovak current account. We assume that this can be explained by the high dependence on exports of goods and services in the Slovak economy. At the same time we observe GDP growth along with a negative current account balance (2004-2008), so an increase in the growth rate causes a deterioration of the current account;
- Slovakia after joining the euro zone gained absolute increase of trade volume with the EU while reducing the share of EU countries in the total foreign trade. We found positive impact of exchange rate on the current account that can be interpreted as a positive effect of being a Eurozone member and a stability signal for local and external enterprises and business. Especially for those who

- export Slovak goods and services and get foreign currency back to Slovakia, improving the balance of payments;
- concerning the economic nature of current account ($CA = \text{Domestic savings} - \text{Domestic investments}$), the increase in consumption causes deficit of current account. We get the evidence for that from our model with negative impact of consumption in Slovakia on the current account;
 - regarding the openness of the Slovak economy and its attractiveness to foreign capital and multinational companies, the results of the impact of international investment position on the current account is positive. This economic behavior can be explained by high volatility of foreign investment in the Slovak economy, which depends heavily on behavioral conditions of multinational companies, which are the main holders of assets;
 - the impact of interest rate on current account turned out to be negative. We assume that this reflects general economic rule: the higher the rate is, the more attractive is to foreign assets along with higher risks and volatility in the long-term period. As a Eurozone member Slovakia follows The ECB monetary policy, particularly with the main refinancing rate.

For Poland the results should be interpreted as following:

- the results for Poland are different: not only in the case of the set of variables but in their impact on the current account due to the macroeconomic management approach of the Polish government;
- the exchange rate of Polish zloty on the current account is negative with lag 1. It reflects very accurate monetary policy of The Polish Central Bank focusing on strengthening the exchange rate;
- the increase in consumption causes deficit of current account. Despite a relatively low share of exports to GDP, the Polish domestic market is sufficiently deep, indicating a significant potential for internal growth;
- the impact of international investment position on the Polish current account is positive.

Verification of the parameter stability

This section is devoted to the outcomes from testing the stability of the models. To check the stability of the models for Slovakia and Poland (Figure 4 and 5), we run cusum test.

To test stability of coefficients, CUSUM and CUSUMSQ tests were performed. Figure 4 displays the CUSUM statistics plotted within 5% significance confidence bounds. Since the graph of this statistic remains within its confidence interval the null hypothesis of parameter constancy is not rejected.

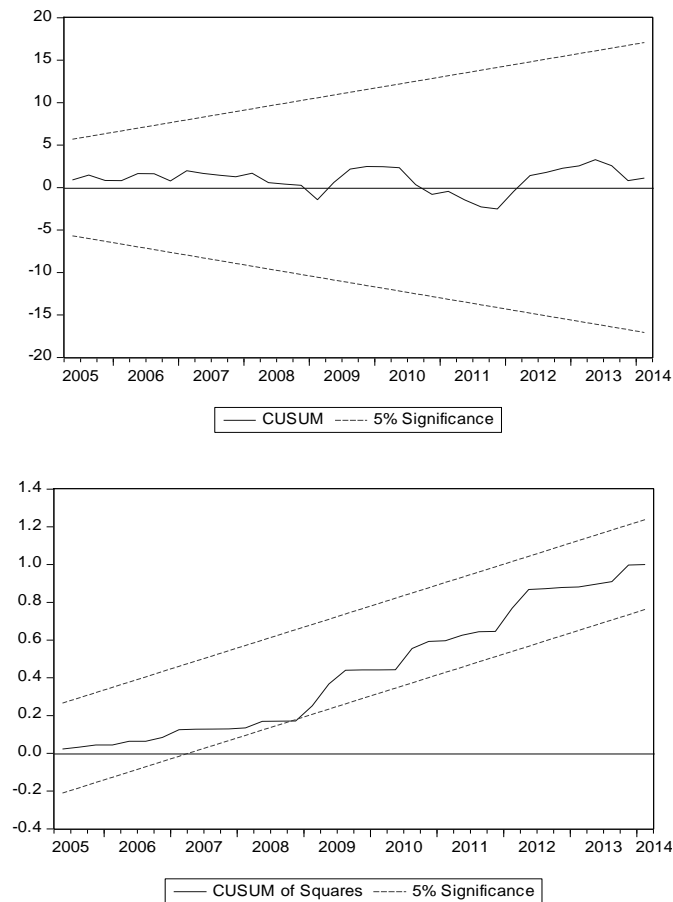


Figure 4. Cumulative Sum test (top) and CUSUM of Squares (down) for Slovakia

The CUSUM of Squares test (Figure 5) is a cumulative sum of squared residuals. According to Vogelvang (2005) the expectations of the CUSUM of Squares statistic run from zero at the first observation until the value of one at the end of the sample period. The test statistics are plotted with 5% confidence interval. Since the statistic does not hit the critical bound, the coefficients are stable over observed period of time.

The p-values of the autocorrelation (BG-test) and heteroskedasticity (BP-test) show that the null hypothesis of non-autocorrelation and homoscedasticity is not rejected. The output in Table 4 displays the coefficient of the lagged dependent variable (deposits) negative and significant, variables are cointegrated. The coefficient of adjustment (ECT) is negative and significant. It indicates how quickly variables restore equilibrium.

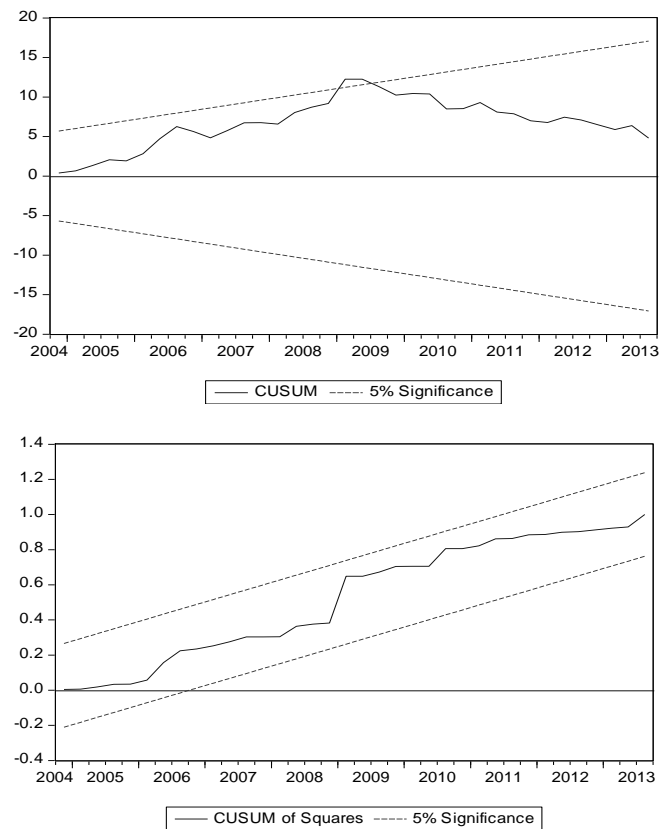


Figure 5. Cumulative Sum test (top) and CUSUM of Squares (down) for Poland

Table 4. Results from residual tests

Slovakia	LM-test (Breusch-Godfrey) Prob. Chi-Square	0.2114
Poland	LM-test (Breusch-Godfrey) Prob. Chi-Square	0.1047

It should be mentioned that due to the CUSUM test (Figure 4 and 5) we see specific results over a period of 2009-2011. Due to the world financial crunch the national governments took a combination of market and non-market actions to obtain macroeconomic stability of economic systems.

The hypothesis that explains such a macroeconomic behavior, in our opinion, is relatively low dependence on exports of the Polish economy and thus lower current account imbalances.

Summary

The current account deficit - is the broadest measure of the volume of international transactions and is the reflection of different macroeconomic management approaches. Its reduction could mean that both Slovakia and Poland move to a more balanced structure that is less dependent on domestic demand and rely more on exports and investment.

Regarding to the openness of the Slovak and Polish economies and its attractiveness to foreign capital, the results of the impact of international investment position on the current account is positive for both cases.

The main threat to the economic growth in the region remains unstable energy market. They depend on Russian gas. Slovakia and Poland seek maximum integration into the European Union and the euro area, not only for economic reasons but also for political reasons. That helps the countries to support the significant level of competitiveness and efficiency.

The economic growth in two countries in the period 2004 – 2007 came along with current account deficit, but the balance of current account marked the period after 2008 – 2009. That was a reflection of economic growth shortage but also a balanced macroeconomic policy on the European and national levels.

References

- Alberola E., Navia D., 2007, *Equilibrium exchange rates in the new EU members: external imbalances vs. real convergence*, Madrid, [in:] Documentos de Trabajo, No.0708.
- Brissimis S., Hondroyannis G., Papazoglou Ch., 2010, *Current account determinants and external sustainability in period of structural change*, ECB, Working Paper, No. 1243.
- Eurostat, 2014, [Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-27102014-BP/EN/2-27102014-BP-EN.PDF, Access on: 14.12.2014].
- Ketenci N., Uz Idil., 2010, *Determinants of Current account in the EU. The relation between internal and external balances in the new members*, [Available at: <http://mpira.ub.uni-muenchen.de/27466/>].
- Kiselakova D., Kiselak A., 2013, *Analysis of banking business and its impact on financial stability of economies in euro area*, "Polish Journal of Management Studies", 8(1).
- Lanzafame M., 2014, *The balance of payments-constrained growth rate and the natural rate of growth: new empirical evidence*, "Cambridge Journal of Economics", 38(4).
- Maddala G.S., Kim I.M., 1998, *Unit roots, cointegration, and structural change*, Cambridge.
- Menzie D., Chinn, Eswar S., 2000, *Prasad Medium-Term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration*, NBER Working Paper, No. 7581.
- Mankiw N.G., Romer D., Weil D.N., 1992, *Determinants of National Saving and Wealth*, [in:] A Contribution to the Empirics of Economic, London, Macmillan.
- Rahman J., 2008, *Current Account Developments in New Member States of the European Union: Equilibrium, Excess, and EU-Phoria*, IMF Working Paper.
- Razmi R., 2010, *Exploring the robustness of the balance of payments-constrained growth idea in a multiple good framework*, "Cambridge Journal of Economics", 1(23).

Sachs J., *The Current Account in the Macroeconomic Adjustment Process*, National Bureau of Economic Research, Working Paper, No. 796,.

Vneshneekonomicheskie svyazi Slovackoj Respubliki, 2014, [Available at: http://www.ved.gov.ru/exportcountries/sk/about_sk/ved_sk/, Access on: 14.12.2014].

Vogelvang B., 2005, *Econometrics*, FT Prentice Hall.

ZARZĄDZANIE MAKROEKONOMICZNE I JEGO WPŁYW NA RACHUNEK BIEŻĄCY (PRZYKŁAD SŁOWACJI I POLSKI)

Streszczenie: Studiowanie zarządzania makroekonomicznego jest integralną częścią wzrostu gospodarczego, ponieważ powoduje wzrost zamożności i analiza czynników determinujących go, może wyjaśnić różnice w poziomie i tempie rozwoju w różnych krajach. Szczególne zainteresowanie badawcze wpływa na charakterystyki zarządzania makroekonomicznego, wzrostu gospodarczego i jego związków z rachunkiem bieżącym. Pomimo poprawy salda obrotów bieżących odnotowano spadek w międzynarodowej pozycji inwestycyjnej. Przy immanentnej niestabilności gospodarki światowej, szczególnie interesujące jest zarządzanie czynnikami ekonomicznymi na rachunku obrotów bieżących w krajowym systemie gospodarczym, który funkcjonuje w ramach wspólnego otoczenia makroekonomicznego (UE). Analizujemy wpływ czynników makroekonomicznych na rachunkach bieżących na Słowacji i w Polsce.

Słowa kluczowe: zarządzanie makroekonomiczne, rachunek bieżący, wzrost, zmienność, wpływ makroekonomiczny, otwartość, zorientowany na eksport, przedsiębiorstwo przemysłowe.

宏觀經濟管理和及其對經常項目（案例斯洛伐克和波蘭）

摘要：研究了宏觀經濟管理是經濟增長的一個組成部分，因為它會導致財富增加，並確定它的因素的分析，可以解釋的發展在不同國家的水平和速度的差異。特別的研究興趣引起的宏觀經濟管理，經濟增長和經常賬戶關係的特點。儘管經常賬戶餘額的改善有國際投資頭寸的下降。隨著世界經濟的內在波動性是一個特殊的利益是正常的普通宏觀經濟環境（歐盟）框架經濟因素對經常賬戶的國民經濟體系的管理。我們分析了宏觀經濟因素對斯洛伐克和波蘭的經常賬戶的影響

關鍵詞：宏觀經濟管理，經常賬戶，成長，波動性，宏觀經濟影響，開放性，出口導向，工業企業