DETERMINANTS OF THE CURRENT ACCOUNT BALANCES IN THE 'OLD' AND THE 'NEW' EA COUNTRIES FROM THE PERSPECTIVE OF THE ABSORPTION APPROACH IN YEARS 2005-2017

Abstract:
The aim of this article is to show trends concerning the balances of payments of the 'old' and new Euro Area (EA) countries. The research problem pertains to the differences in evolution of the Current Account (CA) balances between the two EA groups. The determinants of the CA based on the absorption approach to the balance of payments. The following hypothesis has been posed and confirmed: the differences among the balances of the CA in the EA countries in the pre-crisis period were determined by the investment rates, as functions of the expected economic growth. Whereas, during the crisis and in the post-crisis period, a far greater influence on the CAs was exerted by the fiscal policy, exemplified by public savings. This policy was also adopted as a measure of alleviating the effects of the economic shocks spurred by the 2007 crisis in the USA. The adopted research method consisted of a statistical data analysis with the use of dynamics indicators, as well as a literature study of the balance of payments theories.
Keywords: current account, absorption approach to the balance of payments.
JEL Codes: F15, F31, F32, F34.

1. Introduction
The economic and monetary integration of European countries within the European Monetary Union has been recognized as the most important monetary reform since the Bretton Woods agreement (Kubin, 2006, p. 81-106; Gwóźdź-Lasoń, Miklaszewicz & Puder, 2017, p. 7). The subsequent years of the EA operation, with the accession of other countries to the single currency zone, highlighted the existing divergence among the EA. The divergence was due to the differences in the levels of: economic, financial, social and political development, which resulted in different national policy objectives (Czech, 2018, p. 53; Nowak, 2012, p. 37; Surdej, 2018, pp. 29-30). Consequently, in literature the EA is divided into core and peripheral countries (Mucha, 2012, pp. 488-490; Nowak, 2012, p.38; Szydło, 2013, pp. 235-250; Toussaint, 2011, Śliwiński, 2018, pp. 209-224, Campos & Macchiarelli, 2018, pp. 20-21). The EA division is made according to the following criteria: *(i)* relation of payments into to withdrawals from the EU budget, *(ii)* economic growth rate, *(iii)* inflation rate, *(iv)* the Balance of Payments (BP) balance. The countries usually included in the core are as follows: Germany, France, the Netherlands, Austria, Belgium, Luxembourg and Finland, whereas among the peripheral ones one can enumerate Portugal, Ireland, Greece, Spain (at times Italy). After the enlargement of the EA the 'new' countries joined the peripheral group. The EA began to be divided into the 'new' Union and the 'old' Union (Kosterna, 2013, pp. 189-202). As a result of an increasing diversity within the EA, there

emerged another division, namely into the Europe of two or even three speeds - with reference to the whole EU (Nowak, 2012, p. 38).

The aim of this article is to show trends concerning the BP of the 'old' and 'new' EA countries[1]. The research problem pertains to the differences in evolution of the CA balances between the two EA groups from the perspective of the absorption approach. Two main hypotheses have been posed:

H1: **There are clear differences between the EA12 and the EA7 in the shape of the CA balances and their structure.**

H2: **Different factors influence the improvement and deterioration of the EA12 and the EA7 CA balances**.

Two additional hypotheses have been formulated for the hypothesis H2:

H2a: **During the pre-crisis period the CA balances were determined by the investment rates, as functions of the expected economic growth.**

H2b: **During the crisis and in the post-crisis period, a far greater influence on the CAs was exerted by the fiscal policy, exemplified by public savings. This policy was also adopted as a measure of alleviating the effects of the economic shocks spurred by the 2007 crisis in the USA.**

The adopted research method consisted of a statistical data analysis with the use of dynamics indicators, as well as, a literature study of the balance of payments theories. The sources of statistical data were Eurostat and the World Bank, the survey covers years 2005-2017[2].

There are many studies in the literature devoted to the analysis of the BPs and the determinants of their imbalance. Europe was not a frequent object of interest in this respect, because European countries have enjoyed a long-term trend of keeping the BP in balance (Czarny & Śledziewska 2013, p. 26). The situation has changed in the recent years, external imbalances have emerged in the EA countries and, as a result, the interest in investigating the reasons for their occurrence gained momentum. The CA determinants indicated by the various studies justify the need for further research, especially since the composition of the EA changed over time and was characterized by a significant level of heterogeneity.

This article is a part of this research, however, its original value is to capture the differences among the EA countries, indicating the need to consider them in the further BP analysis. The article consists of 5 parts. Following the

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[1] The division of the Euro Area countries was carried out according the membership order criterion. The 'old' Union consists of the countries forming the EMU in its first operation years: Belgium, Germany, Ireland, Spain, France, Italy, Luxembourg, the Netherlands, Austria, Portugal, Finland and Greece (which joined in 2001). This group was named Euro Area 12 (EA12). The 'new' Union consist of the countries that have adopted the euro later: Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015). This group was named Euro Area 7 (EA7).
[2] There was a lack of data in the case of Cyprus in 2004.

short introduction, Part 2 shows the CA statistics in the EA7 and the EA12 countries. Part 3 justifies the use of the absorption approach and presents the results of the selected empirical studies. Part 4 provides an analysis of the causes of the discrepancies in the BP of the EA countries in the perspective of the absorption approach. The last part constitutes a summary containing the conclusions for countries aspiring to the EA membership.

2. The CA balances in the EA12 and the EA7 countries

The CA balances in the case of the EA12[3] were usually positive; except for 2008, the 'old' Union countries had the CA surpluses. In 2005-2007 the CA positive balance did not exceed 53 billion Euro, however, since 2009 it started to show an upward trend reaching almost 430 billion Euro in 2017 (Graph 1).
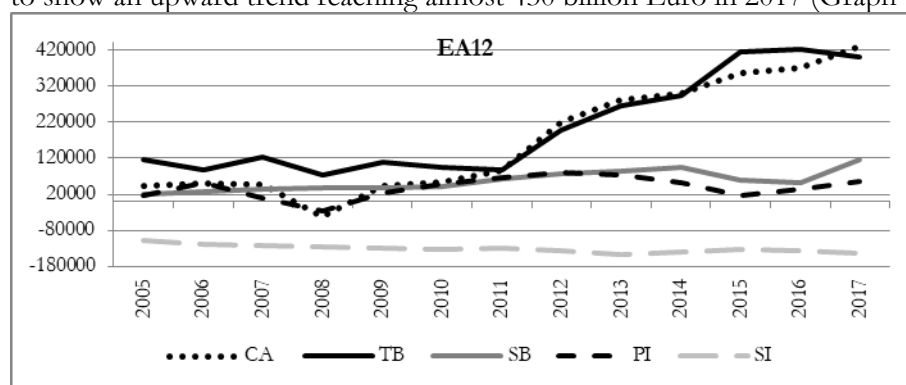
Graph 1. The CA balances and its main components: the Trade Balance (TB), the Services Balance (SB), the Primary Income (PI) and the Secondary Income (SI), EA12, million Euro, years 2005-2017.
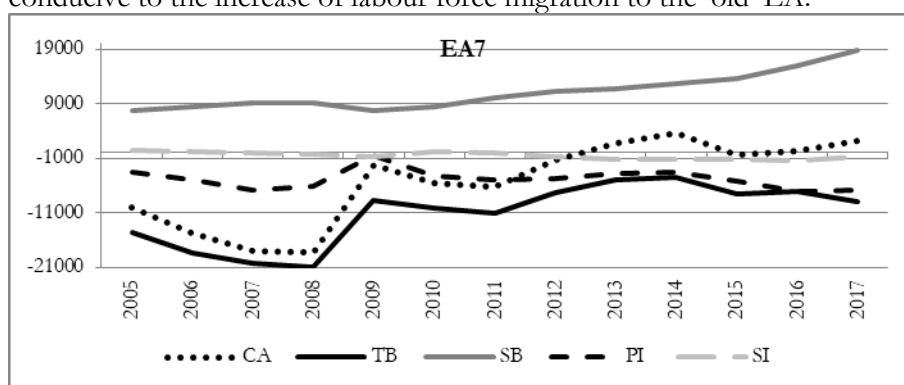Source: own calculation based on Eurostat.

The main driver of the CA surplus growth was the Trade Balance (TB) surplus. The TB balance by 2010 had exceeded the CA balance. As of 2011, these values were growing at a similar pace. Other elements affecting the CA balance were the international exchange of services (SB) and the Primary Income (PI) surplus (only in 2008 the PI balance was negative). The positive PI balance is the result of previously made investments, whose value changes are posted to the Financial Account (FA) in categories: direct, portfolio and other investments[4]

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[3] The CA balance was calculated as a sum of individual country balances in the group (EA12 and EA7). The CA balance in relation to GDP was calculated as a sum of individual country balances in the group in relation to the sum of their GDPs. The same rule concerns the way of calculating EA12 and EA7 savings and investments.

[4] The Investment Income account contains also revenues concerning Reserve Assets, but they are managed by the central banks.

(IMF, 2009, pp. 183-205). The PI, as well as, the SB were not the CA dominant elements, but their balances constituted stable elements increasing the surplus.

The 'old' EA had a high negative balance of the Secondary Income (SI) throughout the entire analysis period. This was due to a relatively higher domestic income. The EA12 countries transferred funds to the lower income level countries. The SI includes also workers` remittances - transfers made by employees to residents in another economy, and the Common Market was conducive to the increase of labour force migration to the 'old' EA.
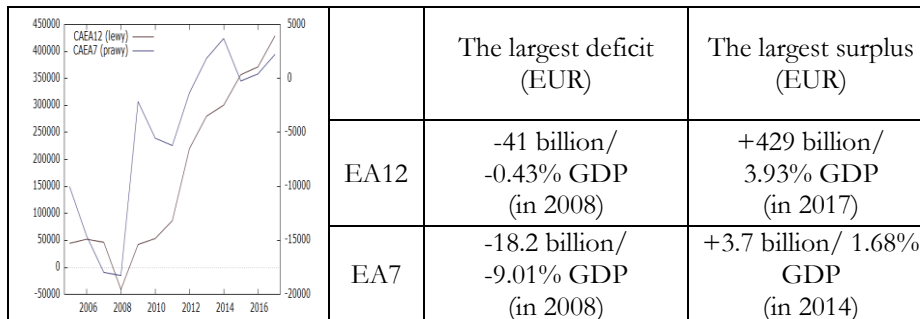

Graph 2. The CA balances and its main components: the Trade Balance (TB), the Services Balance (SB), the Primary Income (PI) and the Secondary Income (SI), EA7, in million Euro, years 2005-2017.
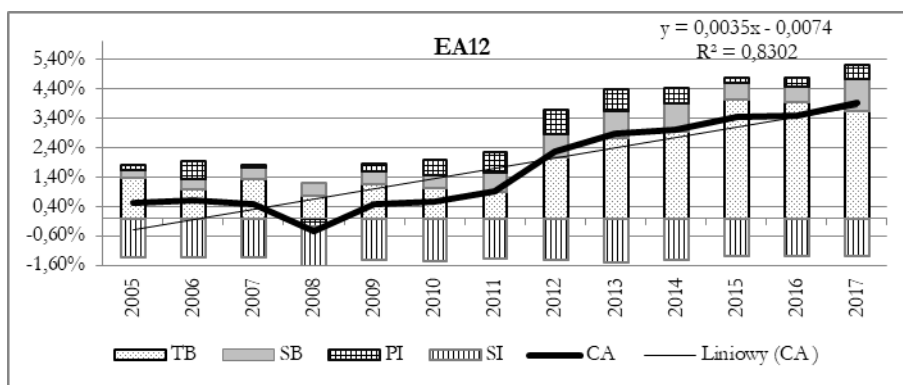Source: own calculation based on Eurostat.

The EA7 was usually characterized by negative CA balances. The largest deficit was recorded in 2007-2008. The CA surpluses appeared in the years 2013-2014 and in 2016-2017. The CA balance changed in the same direction as the TB balance, which remained negative – the 'new' EA countries` import of goods exceeded the level of export. The only area with a permanent surplus were the services. Their positive balance was steadily increasing during the analysis period (except 2009). The PI balance was negative, the smallest deficit occurred in 2009. The SI balance fluctuated around zero, the SI revenues exceeded expenses only in 2005-2006 and 2010. The SI result did not significantly affect the CA result.

Comparing both groups one can see that the 'old' EA achieved generally positive and higher CA results, while the 'new' EA usually negative. The direction of change in the both CA balances seems to be compatible, but the range of values was incomparable (Graph 3). There were large differences in the size of economies: the EA12 GDP equalled in 2005 8326.0 billion Euro and in 2017 – 10.953.7 billion Euro, while the EA7 GDP equalled 134.8 billion Euro in 2005 and 251.7 billion Euro in 2017. That is, the EA7 GDP equalled only 1.6% of EA12 GDP in 2005 and 2.3% in 2017.

|	The largest deficit (EUR)	The largest surplus (EUR)
EA12	-41 billion/ -0.43% GDP (in 2008)	+429 billion/ 3.93% GDP (in 2017)
EA7	-18.2 billion/ -9.01% GDP (in 2008)	+3.7 billion/ 1.68% GDP (in 2014)

Graph 3. The EA7 and EA12: changes in the CA balances and extreme values in 2005-2017.
Source: own calculation based on Eurostat.

Graph 4. The balances of main components of the CA in relation to GDP in EA12.
Source: own calculation based on Eurostat.
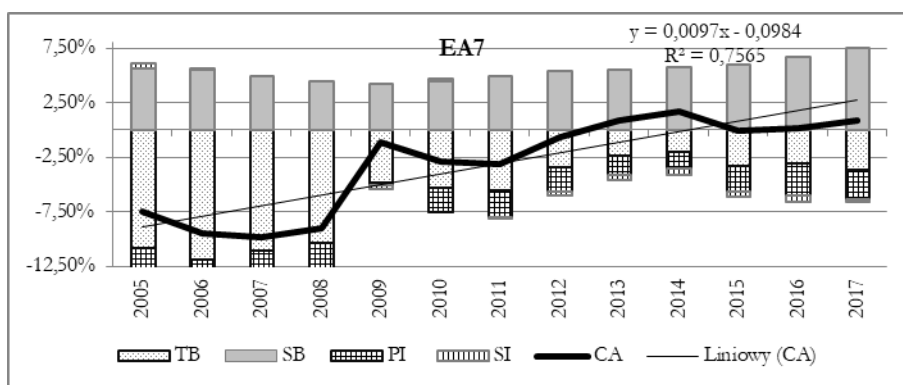
Graph 5. The balances of main components of the CA in relation to GDP in EA7.
Source: own calculation based on Eurostat.

Clear differences between the EA12 and the EA7 concerned not only the CA value, but also its structure. The PB analysis points to the existence of different factors affecting the improvement or deterioration of the BP balances. Both the EA12 and the EA7 improved their balances during the analysis period (see the trend line marked on Graphs 4 and 5), but the betterment (in relation to the GDP) was faster in the case of the 'new' EA. The improving of the TB balances had a greater impact on the changes of the CA balances. In the years 2005-2017 in the case of the EA12 the TB surplus in relation to the GDP increased from 1.4% to 3.7%, and in the case of the EA7 the deficit in relation to the GDP decreased from 10.8% to 3.6%. The CA structure analysis indicates that:

- in the EA12 Finland, the Netherlands, Ireland, Germany at all times had a positive TB balance:, while Greece, Spain, Luxembourg and Portugal were importers during the analysis period. In the case of the EA7, Slovenia up to 2013 was a goods exporter, while Cyprus, Estonia, Latvia, Lithuania and Malta experienced TB deficits in 2005-2007;
- during the whole analysis period in the EA12 Ireland, Germany and Italy marked SB deficits, whereas Finland and the Netherlands usually had negative balances. The remaining countries in the both groups at all times had a surplus or usually noted a surplus in the SB;
- in 2005-2017 France and Germany recorded a positive PI balance throughout the whole analysis period, in the case of Austria, Belgium, Finland and the Netherlands it was usually positive. Luxembourg and Portugal were capital recipients. In the EA7 only in the case of Cyprus, Latvia and Lithuania there were sporadic surpluses;
- in the EA12 group, only in Portugal SI surpluses were observed throughout the whole period, whereas in Luxembourg in most cases. The remaining EA12 countries had SI deficits at all times or usually. The situation was different in the EA7 countries - the Baltic countries and Malta had permanent surpluses or noted them usually. The SI deficit in the EA7 group was noticed in the case of Cyprus, Slovakia and Slovenia.

3. The external imbalance and its causes in the BP theory

The PB plays an important role in assessing the external balance of the country. The concept of an external balance has evolved over time and due to its multi-dimensionality it does not have an unambiguous definition (Śliwiński, 2011, pp. 15-75). However, it is often narrowed down to a lack of partial imbalances in the BP, especially in the CA. Bearing the above in mind, various BP theories have been seeking an explanation to the existing imbalances.

In the elasticity approach (Marshall, 1923; Lerner, 1944; Machlup, 1955) the trade balance (during the fixed exchange rates and limited capital flows, the

TB equalled the CA) was analysed for impact on domestic and foreign trade price changes. The exchange rate was found to be the only independent variable affecting the BP balance. As a result, devaluation of domestic currency was considered a TB deficit corrective instrument. The TB improvement depended on the Marshall-Lerner (M-L) condition being met. The M-L condition comes down to the requirement of sufficient elasticity of export and import in relation to the real exchange rate [$\varepsilon_{DX} + \varepsilon_{DM} > 1$ (*1*) where ε is price elasticity of export demand (DX) and import demand (DM)].

In the absorption approach (Alexander, 1952; Laursen & Metzler 1950) the TB balance has been defined in two ways. The first way describes it as the difference between national income/product (Y) and domestic expenditure/absorption (A) [$A = C + I + G$, (*2*) where C-consumption, I-investment, G-government spending]. A TB improvement can be achieved through the domestic savings improvement or the investment reduction.

The spread of flexible regimes after the collapse of the Bretton Woods system, development of financial markets, and liberalization of capital flows changed the approach to the BP balance. The analysis was expanded to include international capital flows and the changes of assets and liabilities. In such circumstances, the monetary theory arose (Whitman 1975; Frenkel & Johnson 1976). According to the monetary theory the BP imbalance results from the money market imbalance, that is, from the mismatching of the supply to the demand for domestic money. This approach was the result of applying of the quantitative theory of money to the open economy analysis (changes in the money supply result in price changes and do not affect the real national income): there is a volume of money supply that balanced the BP balance, and deficits and surpluses constitute the phases of adjustment of the money supply to the demand for money. In fixed rates regimes the central bank did not have control over money supply for an extended period of time and could not pursue its own policy in this regard. The external imbalance resulted in changes in official foreign reserves [$dR = dP_f + dY - dD$,(5) where R - foreign reserves, P_f – foreign prices, D – central bank domestic assets]. In the floating rates regimes the BP imbalance was corrected automatically by the exchange rate changes [$dE = dD - dP_f - dY$, (6) where E-exchange rate].

Table 1. Examples of research on the CA balance determinants

Authors of the study	Research group	Research period	The CA balance determinants

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Debelle, Faruqee 1996	21 highly developed and 34 industrialized and developing countries	1971-1933	Level of development and demographic structure
Calderon, Chong, Loayza 2002	Developing countries including the heavily indebted	1966-1995	*Terms of trade*, international interest rate changes, exchange rate appreciation, public system expenditure, private savings level, GDP *per capita*, capital stock/GDP, GDP changes in developed countries.
Chinn, Prasad 2003	18 industrialized and 71 developing countries	1971-2003	State budget balance, foreign net assets.
Gruber, Kamin 2007	The USA and 61 countries	1982-2003	For the USA: USD exchange rate in 1995-2002, GDP of the USA/GDP of the rest of the world, fiscal deficit, private savings rate, changes in productivity, excess savings in emerging markets.
Sun 2011	19 Asia and Latin America developing countries	1985-2004	Resource reallocation rate, pay gap. GDP growth rate [structural changes in domestic savings have been explained using the changes in productivity (wage effect) and the allocation of work resources (allocation effect)].
Schmitz, Hagen 2011	UE15 countries	1981-2005	GDP *per capita*. Additional findings: capital flows among the EA countries are higher than among the UE non-EA countries, in the case of the EA, the capital flows from richer to poorer countries.
Czarny, Śledziewska 2013	UE countries	1995-2011	GDP *per capita*, the previous year CA balance, participation of older people, unemployment rate, *terms of trade.*
Maciejewski 2017	UE countries	2004-2015	Net foreign assets, domestic savings, economic development level, domestic investment.

Source: own work.

Economies of the EA countries giving up the national currencies in favour of the Euro, have ceased to experience exchange rate fluctuations relative to other EA countries. Admittedly, the Euro quotes are subject to fluctuations against other currencies, but within the EA the regime can be defined as a fixed one. For this reason, there is no justification for examination of the EA countries` BP imbalance through the prism of the elasticity theory in its classic version. The single currency is also associated with conducting a single monetary policy – central banks of the EA countries are subject to the rules established by the European Central Bank (ECB). For this reason the monetary theory is less applicable here for the BP imbalance analysis.

Therefore, the EA countries did neither differ in the use of separate exchange rates, nor in the conducting of a separate monetary policy. Integration within the Eurozone had left the EA countries free to pursue their own economic policies (except for the monetary and exchange rate policy). The economic policies influenced the diversity of economic growth in individual countries and related changes in the private and public savings and the domestic investment. According to the absorption theory the important parameters affecting the TB result (and as a consequence the CA result) are the savings and investment changes.

Based, inter alia, on the absorption approach many studies have analysed the determinants of the BP, also in relation to the EA. A review of the selected studies is provided in Table 1. They emphasize the importance of savings and investment and the variables explaining them.

4. Causes of discrepancies in the BP of the EA countries in the absorption approach

According to the absorption approach the key element affecting the CA balance is the relationship between the domestic savings[SAV: composed of the private (SAV$priv$) and the public (SAV$publ$)] and the investment (INV) [$CA \approx TB = (SAVpriv + SAVpubl) - INV$ *(7)*], and in relation to the GDP $CA/GDP \approx TB/GDP = (SAVpriv/GDP + SAVpubl/GDP) - INV/GDP$ *(8)*][5]
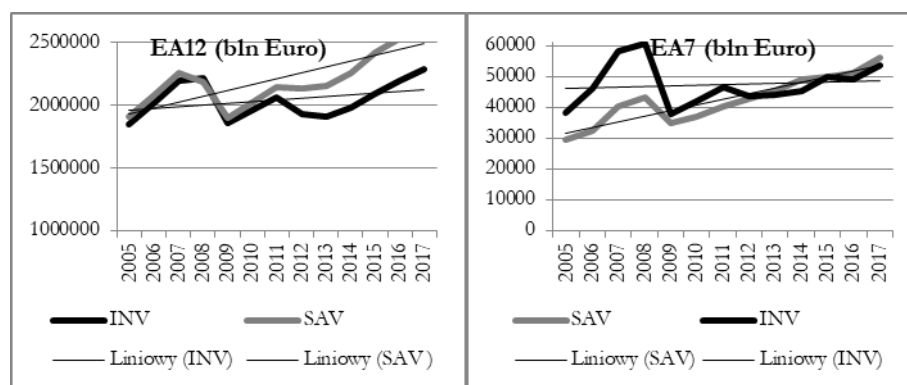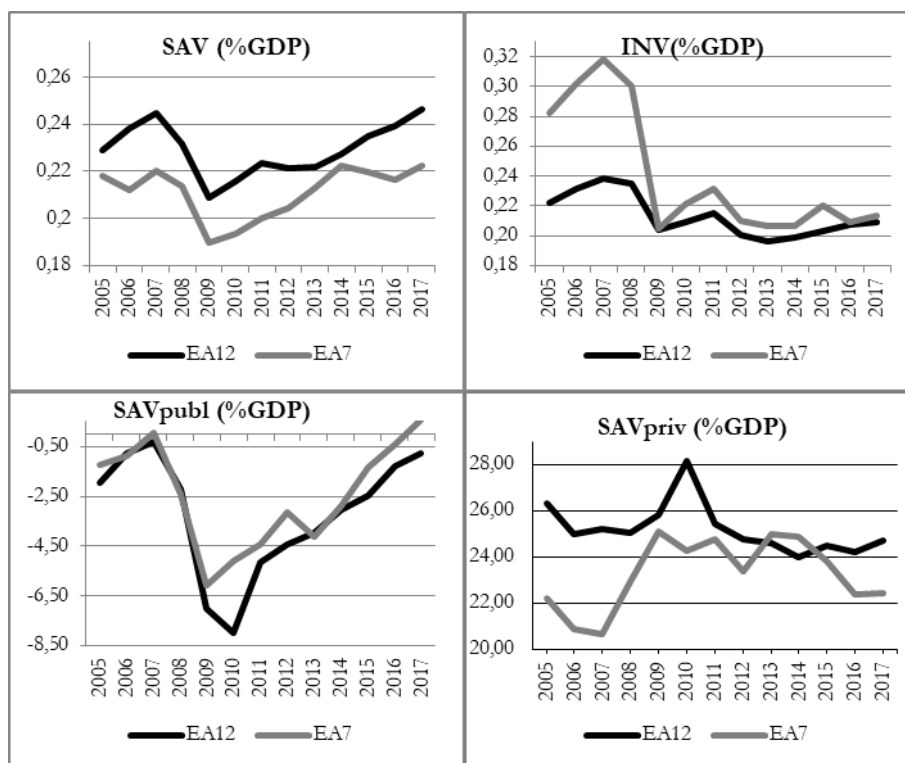
Graph 6. The differences between the EA12 and the EA7 in relation to: savings and investment (at the top); savings and investment in relation to GDP (in the middle); public and private savings in relation to GDP (at the bottom).
Source: own calculation based on the Eurostat and World Bank data.

The trends presented in the graph above indicate the validity of the division of the research period into the following subperiods: (*i*) period prior to the crisis of 2008, (*ii*) the epicentre of the crisis in 2008-2009, (*iii*) the post-crisis period. Observations:

- during the pre-crisis period the investment rates of the EA12 and the EA7 clearly differed: the EA7 had a high level of investment (about 30% of the GDP in 2005-2008), which also funded (because of an insufficient level of domestic savings) by the foreign savings. The lower domestic savings in relation to a high level of investment in the EA7 was the cause of the high TB imbalances and resulted in the CA imbalances;
- the 2008 crisis caused a collapse of the savings and investment rate in the both groups. A much larger decrease of the investment rate in the EA7 was balanced by the improvement of the private savings level and resulted in the CA balance improvement (from the level of -9.01% of the GDP in 2008 to -1.17% of the GDP in 2009);

- a decline of the EA12 savings level in 2008-2009 was associated with very large public finance deficits. The EA12 fiscal policy was actively used (in the case of the EA7 on a smaller scale) for counteracting the economic collapse and supporting the financial system at risk. As a result, the domestic savings rates dropped sharply despite the increasing private savings level (the result of reduced consumption: EA12 and EA7 and lowered GDP: EA12). The CA deficit in the case of the EA12 appeared (in 2008);
- in the case of the EA12, after 2009, the savings grew faster than the investment. In the case of the EA7 the increase in savings slightly exceeded the increase in investments in 2013. As a result, during the post-crisis period an improvement of the CA balance could be observed in the both groups

Domestic savings were rising mainly due to the public sector balance improvement. The reduction of the public finance deficit with a stable investment rate during the post-crisis period (19-21% GDP) resulted in the CA surpluses in the case of the EA7 (since 2013, except 2015) and in the case of the EA12 - the CA surplus increase.

Summarizing, from the point of view of the CA balance, understood as a difference between savings and investment, the positive CA balance growth was possible due to the increasing public savings, which offset the fall in private savings (from 25.8% to 24.68% of the GDP).

The level of the domestic savings and the investment depend on the development of various macro-, and microeconomic factors, it also results from the expectations regarding their future evolution (more: Najlepszy & Śliwiński, 2008, pp. 114-137). Deepening one-period analysis linking the consumption and the investment with the current income over a long-term horizon is the basis of the intertemporal approach to the BP (Sachs 1981; Svensson & Razin, 1983; Obstfeld& Rogoff, 1995). The intertemporal approach is an elaboration of the absorption approach. The theory assumes that a country at the beginning of the path of economic growth can increase its consumption thanks to the foreign capital increasing the level of the domestic savings with the foreign savings. This capital inflow results in an investment growth and the CA deficit, and, in the long-term period, in a higher economic growth. This theory fits into the case of the EA7 – the GDP *per capita* and real GDP growth rate[6] comparison in the EA12 and the EA7 contain Graph 7.

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[6] GDP *per capita* is calculated as an average GDP *per capita* in the both groups, the real economic growth rate is calculated as a change of cumulated real GDP.
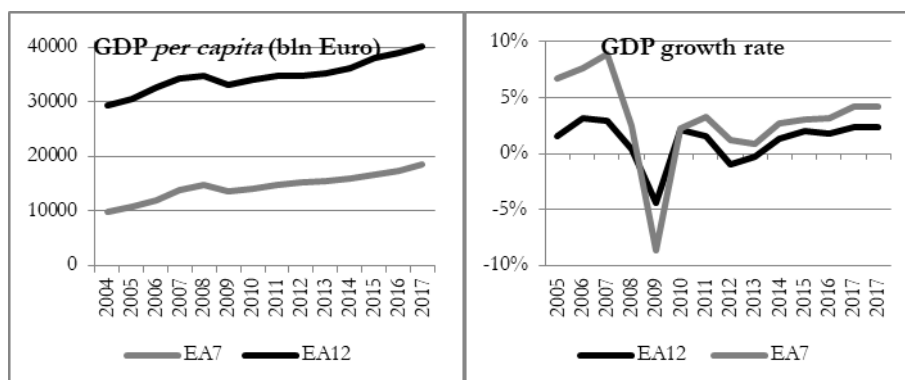
Graph 7. GDP *per capita* in billion Euro (left) and the real GDP growth rate (right) in the both groups.
Source: own calculation based on the Eurostat data.

The EA7 were characterized by a much lower level of GDP *per capita* in relation to the EA12`s level. The inflow of capital into the EA7 (especially until 2008) and the accompanying CA deficits, resulted also from the possibility of generating a higher rate of return (except 2009 the EA7 countries developed at a faster pace than the EA12 countries). The consequence for the EA12 countries was a capital outflow and the CA surpluses.

Analysing the reasons for the CA balance differences in the case of the 'old' and the 'new' EA it is also worth paying attention to the inflation rate differences (Graph 8). The inflow of the foreign capital into the EA7 resulted in the CA deficit, and despite the lack of money emission possibilities in the case of individual countries, it influenced the increase of money amount on the market and caused the higher inflation rate[7] prior to 2009 and in the years 2011-2012.

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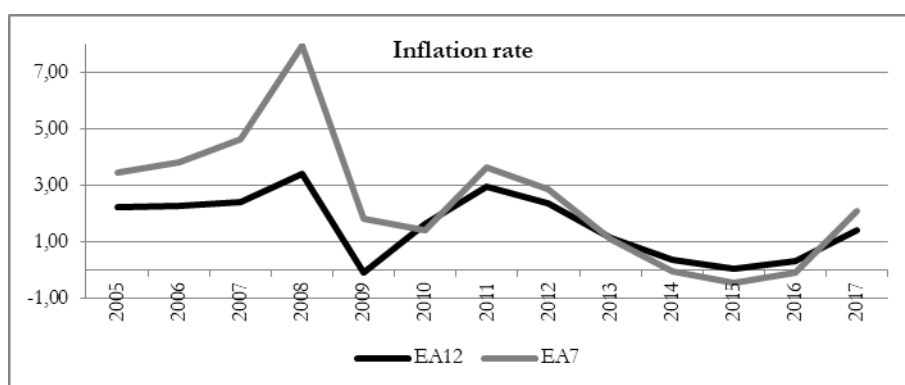
[7] Inflation rate is calculated as an average inflation rate in the both groups.

Graph 8. Inflation rate y/y in the both groups.
Source: own calculation based on the World Bank data.

3. Conclusion
In this article the differences between the CA balances in the EA were explained by the domestic savings and investment differences, which are in turn derivative of different levels of economic development of the countries studied. The research hypotheses were confirmed in the paper:
1) In the years 2005-2007 there were clear differences in the shaping and the structure of the CA balances between the EA12 and the EA7.

The 'old' EA countries analysed *en masse* constituted (except 2008) the surplus group during the analysis period. The 'new' EA countries were characterized by a significant CA deficit (up to 10% of GDP), which gradually improved, transforming into a surplus in 2013. These groups also differed in the CA structure: the EA12 experienced growing TB surpluses and PI deficits, the EA7 was a trade importer and experienced a growing PI deficit and a positive SB balance.
2) Different factors affected the CA improvement and deterioration in the EA12 and the EA7 countries.
   a) during the pre-crisis period the CA balances were determined by the investment rate as an expected economic growth function.

The enlargement of the EA by new members was motivated, except for political reasons, by the desire to achieve a faster economic growth. Expectations of an increased foreign capital inflow enabling a higher level of domestic investment emerged in the EA7. The capital was flowing into the EA7 from the EA12 surplus countries, which had their savings rate higher than the investment rate.
   b) during the crisis and the post-crisis period the fiscal policy exemplified by public savings was of greater importance for the CA balances.

In a crisis (like in 2008) an auto-stabilizing exchange rate stabilizer did not function in particular countries. In the face of economic shocks, what the EA countries were left with was solely their fiscal policy independence, which was used as an intervention policy to mitigate the effect of the economic shock. This policy had an impact on the savings and the investment rate and through it to the CA balance.

There is a need in subsequent studies for a critical analysis of the EA countries economy policies, especially in the case of the EA7 countries, and policy influence on the CA imbalances resulting in the investment rate and the savings rate volatility, as well as the international capital flows volatility. The conclusions reached in this and future papers should apply in the on-going discussion on the topic of the potential entry of particular CEE countries to

the EA. A comparative analysis of the CA balance dynamics and the GDP growth rate (especially in the EA7)[8] could suggest that departing from flexible rates and the loss of the possibility to conduct an independent monetary policy associated with it, could lead to greater GDP fluctuations, especially during a crisis period.

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[8] The cumulated GDP growth rate CEE4 countries (Poland, Czech Republic, Romania, Hungary) in the years equalled 50.3% of the GDP, which means the annual average growth rate of about 3.2%. In the case of the EA7 the values equalled 43.5% and 2.9%, and in the EA12: 14.2% and 1.1%. Standard deviation of the GDP growth rate equalled in the case of CEE4: 2.1%, EA7: 4.1% and EA12: 1.9%.

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