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STRUCTURAL AND CYCLICAL FACTORS OF SERBIA'S CURRENT ACCOUNT

ABSTRACT: *This paper examines the impact of structural and cyclical factors on Serbia's current account. We have applied several filters to turn off the long-term (structural) component and isolate the influence of cyclical factors. In this paper, we show that structural factors were more important determinants of the current account deficit in the full-time sample (1997-2016), while cyclical factors showed a stronger impact in the post-crisis period when the deficit was reduced. Although they lost their intensity during the crisis and in the post-crisis period, the structural factors determine the trend of the current account balance in the long-term. For further improvement of the current account, measures to increase exports should be taken. The structural changes of production, the wider range of support for export financing to small and medium-sized enterprises, and the application of advanced technologies in manufacturing could help to reduce the trade deficit, making the current account deficit sustainable.*

KEY WORDS: *Current account, cycles, structural factors, filtering methods, external debt, primary income*

JEL CLASSIFICATION: C01, F14, F41

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1. INTRODUCTION

Between 2000 and 2008, Serbia's current account deficit expanded to 21.2% of GDP. After the outbreak of the global economic and financial crisis in 2008 the deficit was reduced, reaching 3.1% of GDP in 2016 (NBS 2017, p.68).[1]

One question is whether increased economic activity in Serbia will lead to a current account reversal, but the more important question is whether Serbia's current account deficit is sustainable. In order to answer these questions this paper attempts to identify the cyclical and structural components of Serbia's current account balance and to determine their relative significance.[2]

The aim of this paper is to confirm or reject the hypothesis that structural factors have a decisive impact on Serbia's current account balance. Unlike previous studies, which are mainly concerned with identifying the direction and intensity of the impact of certain factors on the current account balance, our approach is to isolate the cyclical component in the time series of Serbia's current account, thus contributing to the literature on factors that cause current account deficits. In order to prove the starting hypothesis we use various filtering methods. This research question is important for Serbia because its external indebtedness is high, and the net inflow of foreign direct investment (FDI) generates future liabilities in the primary income account. The fact that the current account deficit is covered by FDI inflow and external debt raises the issue of whether the current deficit is sustainable. Potential environmental

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1 The global financial crisis coincided with a global reduction of external imbalances. Haltmaier (2014) found that structural factors played a decisive role in reducing imbalances after 2006, while the contribution of cyclical forces is estimated to have ranged between 10% and 30%. Changes in exchange rates made a significant contribution. In 2012 several eurozone members (Ireland, Greece, Spain, and Portugal) undertook economic and financial programmes that led to the reduction of their current account deficits. According to ECB (2014, p.49) estimates, the deficit of these countries also decreased in the period 2008–2012, with cyclical factors accounting for less than half of the current account adjustments. From a theoretical point of view, a surplus or a current account deficit is neither a good nor a bad thing, because other things must also be included in the analysis. For example, in countries with a current account deficit, whether the return on investments exceeds the costs of their financing is important. Current account surplus, on the other hand, is positive if it arises from a trade surplus, which is created by market forces. In that case the surplus is the outcome of improved competitiveness.

2 Although the current account has been a debated issue in literature, Obstfeld (2012) believes that even today, in a world of deep and globalized financial markets, the national current account balance represents an important financial and macroeconomic variable.

shocks and the accompanying macroeconomic disturbances can also contribute to making the existing deficit difficult to maintain. It is therefore important to consider the role of structural and cyclical components in generating a current account deficit, and then to make recommendations based on the findings.

There are several reasons for this research. Firstly, Serbia's current account deficit expanded dynamically in the period before the outbreak of the global economic and financial crisis in 2008 and then decreased significantly in the post-crisis period. These large movements in the deficit raise the question of whether structural or cyclical factors had a stronger impact on its formation.

Secondly, the current account deficit continues and is persistent. Serbia's external debt rose from 60% of GDP in 2005 to 80.9% in 2012 and 76.5% in 2016. Before the recent global financial crisis the expanding current account deficit was significantly financed by borrowing abroad (Appendix, Figure A1). The fact that the current account deficit persists raises questions about how it is financed. The current external debt-to-GDP ratio is close to 80%. Crossing this threshold could lead to worsening conditions for new borrowing. In addition, the expected rise in worldwide capital market interest rates will increase the burden of servicing the external debt.

Thirdly, the decline in economic activity in the post-crisis period has led to a decline in import demand, which has contributed to the reduction of the trade deficit and consequently the current account deficit. The question is whether the current account balance will worsen due to the economic growth expected in the coming years, and how an increased deficit will be financed. If external shocks occur, greater country openness for cross-border capital transactions can trigger capital flight jeopardizing the stability of the exchange rate, which is one of the most important determinants of the current account balance.

Fourthly, there is a risk that the deficit will further expand due to the international environment. External financial shocks can quickly transfer to the domestic financial system. In addition, unbalanced international trade flows increase the risk of world trade protectionism. The uncertainties in the international economic and financial environment could have an adverse impact on Serbia's account.

The rest of the paper is organized as follows. Section 2 presents the literature review, section 3 explains the data and methodology used in the paper, section 4 discusses the estimation results, and section 5 concludes.

2. LITERATURE REVIEW

The theoretical literature that examines current account determinants usually starts from the macroeconomic basis that the current account balance equals the difference between the value of exported and imported goods and services; that is, the difference between domestic savings and investments. There are a number of factors that cause a current account imbalance, which are classified into two groups: factors of a structural nature and factors affecting cyclical fluctuations. The methodology is mainly based on the application of standard econometric procedures that evaluate the impact of certain determinants on the current account.

This methodological approach has been applied in numerous papers analysing the causes of global current account imbalances. A common finding of such research is that global economic imbalances grew in the period before the outbreak of the economic and financial crisis of 2008. Cheung, Furceri, and Rusticelli (2010) assess the impact of structural and cyclical factors on the balance of payments from 1973 to 2008 using a panel of 94 countries. They conclude that in the medium term, global economic imbalances are mainly related to structural factors, including cross-country differences in the stage of economic development, financial market development, institutional quality, oil dependency and intensity, demographics, and fiscal deficits. Their findings support the hypothesis that current account deficit reduction after the outbreak of the financial crisis was associated with various cyclical factors, including GDP growth, oil prices, and exchange rates. According to their findings, the current account will worsen as the economy grows.

Bracke, Bussière, Fidora, and Straub (2008) find that the structural determinants of global current account imbalances are mainly related to the unfinished process of financial globalization. They show that financial market imperfections are transmitted to international capital flows. This is reflected in the more pronounced movement of capital from emerging to developed countries.

Tressel and Wang (2014) examine the rebalancing of the current account in the eurozone and come to the conclusion that there is no solid evidence of redirection of resources from non-tradable to tradable sectors. They conclude that export demand had a significant influence on the eurozone's export performance, and estimate that current account adjustment in the euro area was influenced by both structural changes and cyclical factors. According to these authors, improved cyclical conditions can lead to a partial increase in the current account balance. They also estimate that reliance on relative price adjustments is very challenging, since it has an adverse effect on demand. They believe that structural reforms can play an important role in both resource reallocation in the tradable sector and the related adjustment of relative prices, which would contribute to increasing the euro area's non-price and price competitiveness. They conclude that since entering the eurozone, member countries have been characterized by deteriorating current accounts, partly as the result of financial integration (Cesaroni and De Santis 2015).

Kang and Shambaugh (2013) analyse the causes of the large current account deficit in peripheral euro area members (the euro area periphery and the Baltics) before the outbreak of the financial crisis in 2008. They find the main causes of the deficit expansion to be deteriorating export performance and change in demand. They expand their analysis to movements in transfers and net income balances and find that in most countries export performance was generally stable, while in countries where transfers received from abroad declined, households and businesses increased borrowing to maintain their spending level. In the observed countries they note a persistent failure to adjust to trade deficits. Together with the increase in payments in the net income account, these factors contributed to an increase in the current account deficit before the outbreak of the global financial crisis. The authors conclude that the deficit reduction after the crisis was mainly the result of import contraction, although structural and cyclical factors are difficult to separate.

In this paper we used a different methodology to assess the impact of structural and cyclical factors on Serbia's current account. We applied five different filtering methods to a current account time series. Using this approach, we isolated the structural component of the series, and the cyclical component has been calculated as the difference between the current series and the long-term trend component. Several methods were applied to test robustness. The presented observations on current account deficit sustainability are based on the estimated importance of the structural and cyclical components.

3. DATA AND METHODOLOGY

The following data were used in this paper: Export and Import of Goods and Services, Trade Balance, Current Balance, Gross Domestic Product, and External Debt. The data covers the period 1997–2016 (the external debt data is for the period 2001–2016). The data sources are publications of the National Bank of Serbia (NBS) and the NBS website.

In order to assess the impact of cyclical and structural factors on Serbia's current account for the period 1997–2016 we used annual current account balance data. Five filtering approaches were used to isolate cyclical oscillations from the long-term trend from the current account time series, thus obtaining the structural component of the current account. By deducting this value from the current value of the current account balance, we obtain the cyclical component. We will briefly describe each of these approaches.

3.1. Two-sided Hodrick-Prescott filter

The Hodrick-Prescott (HP) filter is one of the most widely used techniques in macroeconomic analysis to separate the cyclical component of the time series from its long-term trend. This method was introduced in 1997 (Hodrick and Prescot 1997) in an analysis of post-war U.S. business cycles.

The HP filter is a two-sided linear filter which calculates the smoothed series *g* (trend component) that minimizes the variance of the actual series *y* around *g*. The *y* series can be represented as (Hodrick and Prescot 1997):

$$y_t = g_t + c_t \quad \text{for } t = 1, \ldots, T \tag{1}$$

where g_t is the smoothed series (trend component) and c_t is the cyclical component ($c_t = y_t - g_t$). The trend component g_t is constructed to minimize:

$$\sum_{t=1}^{T} c_t^2 + \lambda \sum_{t=1}^{T} [(g_t - g_{t-1}) - (g_{t-1} - g_{t-2})]^2 \tag{2}$$

The first term is the sum of the squared deviations of y_t from the trend. According to the conceptual framework, the average value of c_t over long time periods is close to zero. The second term penalizes changes in trend growth. In

this way the smoothing parameter λ controls the volatility of the cyclical component of the original series. The larger λ is, the greater the constraints and the smoother the trend of *g*. If λ→∞, then *g* approaches a linear time trend. In that case, the second difference of the produced series is 0. In the extreme value of λ=0, the trend g_t is equal to the original time series y_t. Smoothing parameter λ is a key component of HP. This parameter affects both the cycle and the volatility of the trend growth. It means that the HP filter does not contain a specific model of the cycle. A consequence is that users tend to choose high values for λ when analysing annual data, as they believe that lower values could increase the volatility of trend growth rates. Hodrick and Prescott suggest that λ=100 is consistent with annual data and a value of 1600 is appropriate for quarterly data.

As the HP filter does not have a specific model for a cyclical component, weaknesses occur when new data is added at the end of the sample. The model distributes the information that contains the new data either to the trend or to the cycle, even though it may represent an outlier not generated by the HP filter (Mohr 2005, p.10).

The HP model is often used as an approximation of the ideal filter. However, this can only be the case to a certain degree. There is a trade-off regarding λ: the decreasing values of λ allow the state of the ideal filter to be approximated in the low-frequency range but simultaneously to exacerbate the approximation of the ideal filter in the zone of increased frequencies. In other words, the HP filter model does not have the ability to capture random effects. In addition, the filtered values at the end of the sample differ significantly from the values from the middle of the sample and are often characterized by spurious dynamics (Hamilton 2017).

In matrix form, minimization least square can be written as (Hamilton, 2017):

$\tilde{T} = T + 2,\ \mathrm{g} = [\, g_1 \ldots g_T \,]',\ \mathrm{y} = [\, y_1 \ldots y_T \,]'$ and

$$\underset{(T \times \tilde{T})}{H} = \left[\underset{(T \times T)}{I_T} \quad \underset{(T \times 2)}{0} \right]$$

$$\underset{\left(T\times\tilde{T}\right)}{Q}=\begin{bmatrix} 1 & -2 & 1 & 0 & \dots & 0 & 0 & 0 \\ 0 & 1 & -2 & 1 & \dots & 0 & 0 & 0 \\ \vdots & \vdots & \vdots & \vdots & \dots & \vdots & \vdots & \vdots \\ 0 & 0 & 0 & 0 & \dots & -2 & 1 & 0 \\ 0 & 0 & 0 & 0 & \dots & 1 & -2 & 1 \end{bmatrix}$$

The solution to (2) is:

$$g^{*}=\left(H'H+\lambda Q'Q\right)^{-1}H'y=A^{*}y\,. \tag{3}$$

Trend g_t^{*} for any date *t* is then a linear function of a full set of observations in the time series *y* for all data.

3.1. One-sided model of the Hodrick-Prescott filter

A standard two-sided HP filter uses future and past values to construct the time point *t*. As a result an 'endpoint bias problem' occurs, which basically means that the filtered value at the end of the sample differs considerably from that in the middle of the sample. The one-sided HP model is a smoothing method that does not use the future value of the series but only last values.

3.2. The Baxter-King type of band-pass filter

The Baxter-King (BK) (1999) filter is used to isolate the cyclical component of the time series. This linear filter removes a cyclical component from a macroeconomic time series based on a two-sided weighted moving average. The BK filter is based on the assumption that a business cycle lasts between 1.5 and 8 years (for annual data). This filter removes all frequencies that are not associated with the business cycle. The filter adopts a symmetric finite moving average series where the cycles are passed through specified lower and upper bounds.

When applied to the time series y_t with annual data, the BK filter is a linear filter. When a finite symmetric moving average is applied (Baxter and King 1999) a new series is obtained:

$$y_t^{*}=\sum_{k=-K}^{K}\alpha_k y_{t-k} \tag{4}$$

wherein the moving average may be represented as a polynomial in the lag operator L, or

$$\alpha(L) = \sum_{k=-K}^{K} \alpha_k L^k \tag{5}$$

where L is defined so that $L^k x_t = x_{t-k}$ for positive and negative values of k. If a symmetric moving average has a sum of weights equal to zero, i.e., this is a "trend-elimination property" (Baxter and King 1999).

The BK filter has many advantages. First, as a fixed-length symmetric filter, BK is time-invariant (the moving average weights depend only on the specified frequency band) and therefore stationary. Second, there are no phase shifts, since it is symmetric. The model also has some flaws. A filtered series, using the same number of lead and lag terms, implies the loss of the same number of observations from both the beginning and the end of the original time series. When low frequencies dominate the data spectrum the BK filter generates a distorted business cycle.

3.3. The Christiano-Fitzerald (CF) filter

The Christiano and Fitgerald (2003) filter is similar to the BK filter because it is also an approximation of the ideal band pass filter. In order to approximate an ideal band pass filter, CF starts from the assumption that the time series x_t follows a random walk.

There are two types of this model (the fixed-length symmetric filter and the full-length asymmetric filter). The fixed-length symmetric type has the same characteristics as the BK filter, but the full-length asymmetric type is the most general type of band pass filter. This filter is time-varying and the weights change for each observation. In contrast to symmetric filters, the asymmetric type does not use the same number of leads and lags. This means that a filtered series does not lose observations from both the beginning and end of the original time series.

The filter that Christiano and Fitgerald (2003) called the random walk filter is as follows. If y_t denotes the data computed by the band pass filter for the time series x_t, the approximation y_t by $\hat{y}_t$ is a linear projection of y_t onto elements

of data series *x*. The cyclical component $\hat{y}_t$ is computed as follows (Christiano and Fitgerald 2003):

$$\hat{y}_t = B_0 x_t + B_1 x_{t+1} + \ldots + B_{T-1-t} x_{T-1} + \tilde{B}_{T-t} x_T + B_1 x_{t-1} + \ldots + B_{t-2} x_2 + \tilde{B}_{t-1} x_1 \quad (6)$$

for t = 3,4, ..., T-2

where

$$B_j = \frac{\sin(jb) - \sin(ja)}{\pi j}, j \geq 1$$

$$B_0 = \frac{b-a}{\pi}, a = \frac{2\pi}{p_u}, b = \frac{2\pi}{p_l}$$

$$\tilde{B}_{T-1} = -\frac{1}{2} B_0 - \sum_{j=1}^{T-t-1} B_j$$

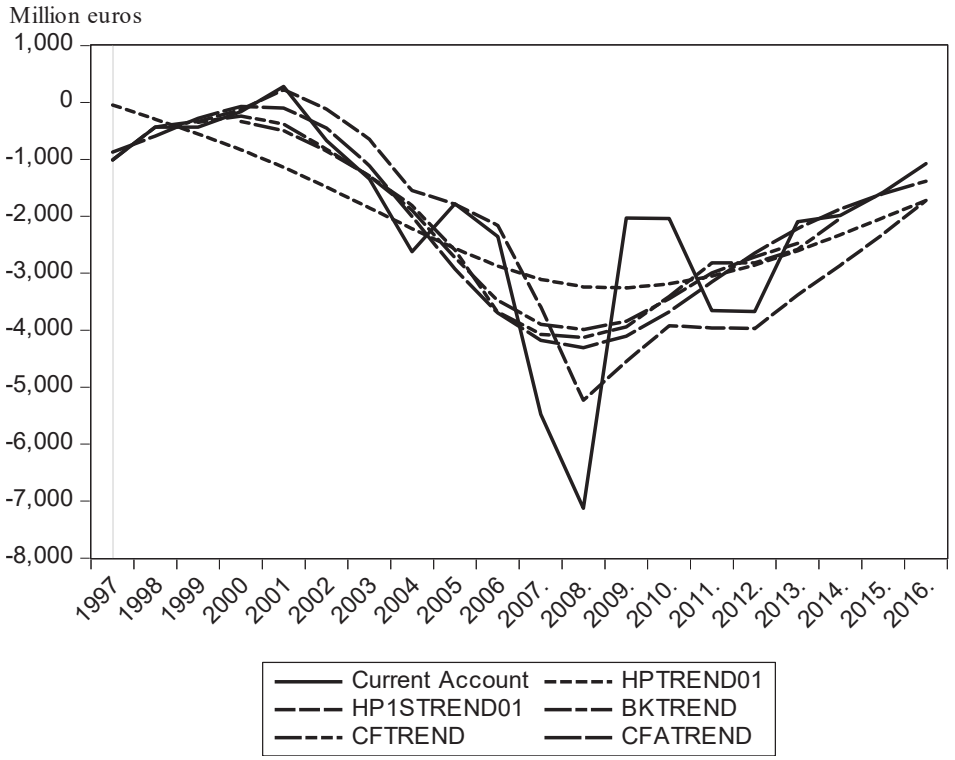
p_l and p_u represent the cycle cut-off (6 and 32 for quarterly data, if we assume the business cycle lasts between 1.5 and 8 years and wish to extract the cycles in this range). This means that the cyclical component $\hat{y}_t$ is a cycle that is longer than p_l and shorter than p_u (Christiano and Fitzgerald 2003).

4. RESULTS AND DISCUSSION

In the empirical literature there is a great deal of evidence for current account persistence; that is, the previous current account balance affects its current level (Gnimassoun and Mignon 2013; Clower and Ito 2012; Calderon, Chong and Loayza 2000; Dass 2016). Long-term current account deficits that are financed by borrowing abroad can lead to external insolvency. Countries where domestic savings are lower than domestic investment cover this imbalance with a financial account surplus. If they borrow abroad the funds must be returned upon maturity and countries with a long-term current account deficit are faced with a sudden transition to current account surpluses. This, as a rule, causes macroeconomic disturbances. Therefore, the persistence of a current account deficit is associated with its sustainability.

Figures 1 and 2 show estimated components and actual current account fluctuations for Serbia. All assessed structural current account components grew up to 2008 following the trend of the actual values (in 2007 and 2008 all structural components were less than the actual current account balance). However, the post-2008 period is characterized by the structural components (with a negative sign) being generally higher than the actual current account balance, with the exception of 2011 and 2012 when some structural components were less than the actual current account deficit (Figure 1).

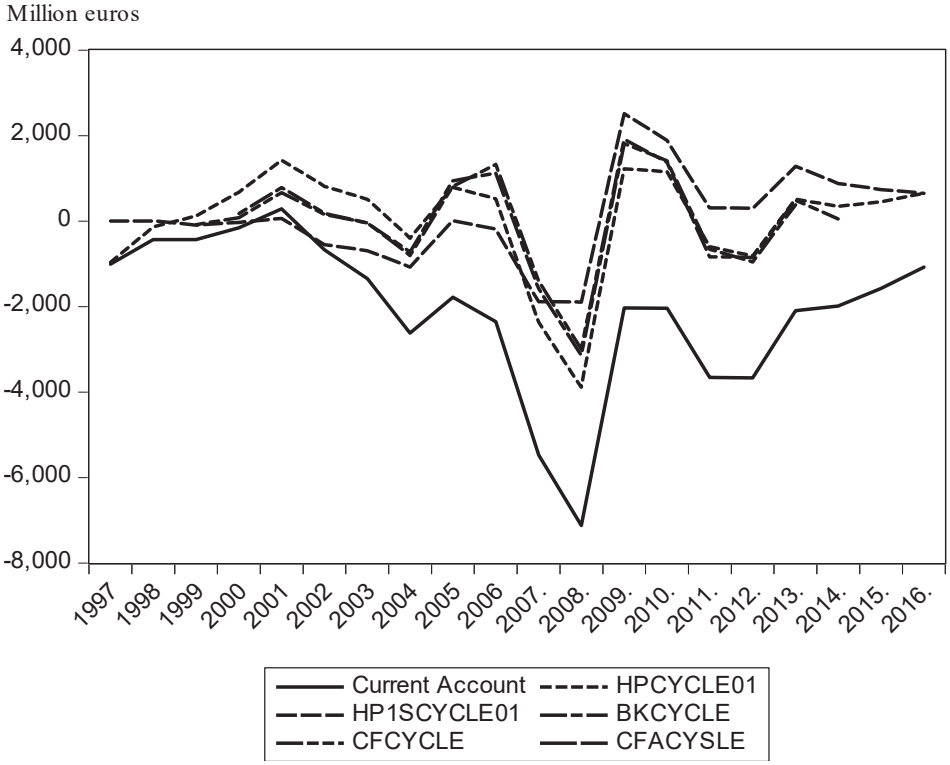
Figure 1: The current account and its structural components



Note: HPTREND01 uses the Hodrick-Prescott filter, HP1STREND01 uses the one-sided Hodrick-Prescott filter, BKTREND uses the Baxter-King filter (fixed-length symmetric filter), CFTREND uses the Christiano-Fitzerald fixed-length symmetric filter, CFATREND uses the Christiano-Fitzerald full-length asymmetric filter.

Source: Data for current account are from National Bank of Serbia, https://www.nbs.rs/internet/english/80/platni_bilans.html Accessed 23/12/2017. Author's calculation.

Figure 2: The current account and its cyclical components



Note: HPCYCLE01 uses the Hodrick-Prescott filter, HP1SCYCLE01 uses the one-sided Hodrick-Prescott filter, BKCYCLE uses the Baxter-King filter (fixed-length symmetric filter), CFCYCLE uses the Christiano-Fitzerald fixed-length symmetric filter, CFACYCLE uses the Christiano-Fitzerald full-length asymmetric filter.

Source: Data for current account are from National Bank of Serbia, https://www.nbs.rs/internet/english/80/platni_bilans.html Accessed 23/12/2017. Author's calculation.

Table 1 shows the average values of five components (structural and cyclical) as a percentage of GDP for two periods. The last row of Table 1 shows the average value of the corresponding indicator for five filtering methods. The average values of a structural component for the period 1997–2016 (8.1%) is close to the average value of the actual current account deficit as a percentage of GDP (8.0%). In the second period (2013–2016) the structural component as a percentage of GDP was 0.1 percentage points lower than the actual current account deficit. This indicates that the structural impact was close to the level of the actual current account deficit, but that little progress had been made in

reducing the negative structural effect.[3] In addition, the average value of the structural component as a percentage of GDP for the period 2013–2016 was lower by 3.2 percentage points compared to the average value of the same component for the whole sample. This leads to the conclusion that the reduction in the current account deficit was partly influenced by structural factors.

Table 1: Average values according to the components

	1997–2016		**2013–2016**	
Actual current account as % GDP	**–8.0**		**–5.0**	
Filter	**Structural CA as a % GDP**	**Cyclical CA as a % GDP**	**Structural CA as a % GDP**	**Cyclical CA as a % GDP**
Hodrick-Prescott	–8.5	0	–6.4	1.4
One-sided Hodrick-Prescott	–9.0	0.5	–7.6	2.6
Baxter-King	–7.1	–0.6	–1.8	0.3
Christiano-Fitzerald fixed-length symmetric	–7.2	–0.4	–3.4	0.4
Christiano-Fitzerald full-length asymmetric	–8.5	0	–5.2	0.2
Average*	**–8.1**	**–0.1**	**–4.9**	**1.0**

Note: * Period averages of all variables for the period under consideration. Annual data is used. The integer value for the smoothing parameter λ in the Hodrick-Prescott filter is set to 100. For the Baxter-King and Christiano-Fitzgerald filters we have selected frequency length (lead/lags) 2 for the moving average, and low (2) and high (8) values for the cycle period. Using the Augmented Dickey-Fuller Test we found that the original current account series has a unit root. Therefore, for both of the Christiano-Fitzgerald filters we have specified CA series as a unit root process, and we have selected adjustment as a detrending method.
Source: Data for CA are from website National Bank of Serbia https://www.nbs.rs/internet/english/80/platni_bilans.html Accessed 23/12/2017. Author's calculations.

[3] In the past years, Serbia has made significant progress in facilitating cross-border trade (reduced the time for border and documentary compliance). According to The World Bank (2017), Serbia simplified the process of starting a business in 2017 by reducing the time to register a company. There is also progress in the area of global competitiveness. According to the World Economic Forum (2017), Serbia made significant improvements in the Global Competitiveness Index (GCI) and was ranked 78th on the list of 137 countries, while in 2016 was ranked 90th (138 countries).

The average value of the cyclical component for the whole sample predicts a 0.1% deficit, while the actual current account balance as a percentage of GDP shows a 8.0% deficit. For the last four years the cyclical component has shown a surplus equal to 1% of GDP, while the actual current account balance to GDP has had a deficit equal to 5% of GDP. These findings show that cyclical factors have significantly contributed to reducing the current account deficit over the past four years.

The relative importance of the structural and cyclical components in determining current account developments can be seen by the degree of their correlation with the actual current account balance (Table 2).

Table 2: Correlation coefficients between structural and cyclical current account components and actual current account

	1997–2016		**2009–2016**	
Filter	**Structural/ Actual CA**	**Cyclical/ Actual CA**	**Structural/ Actual CA**	**Cyclical/ Actual CA**
Hodrick-Prescott	0.74	0.94	–0.16	0.96
One-sided Hodrick-Prescott	0.78	0.44	0	0.91
Baxter-King	0.76	0.78	–0.42	0.91
Christiano-Fitzerald fixed-length symmetric	0.77	0.74	–0.51	0.93
Christiano-Fitzerald full-length asymmetric	0.76	0.65	–0.34	0.85
Average	**0.76**	**0.71**	**–0.29**	**0.91**

Note: See note for Table 1.

The data in Table 2 for the whole sample (second and third columns) shows that there is a correlation between the structural component and the actual current account balance in the range between 0.74 and 0.78 (0.76 on average for all filters), while the correlation between the cyclical component and the actual current account balance ranges between 0.44 and 0.94 (0.71 on average). Based on this, at the level of the whole sample the structural component is more significant than the cyclical component in terms of impact on the actual current account balance. The last two columns of Table 2 show the correlation between the same factors but in the post-crisis period (2009–2016). The average

correlation between the cyclical component and the actual current account balance for the five applied methods has increased to 0.91 on average. This means that the influence of cyclical factors on the current account balance has become more pronounced in the second period than in the full sample.

Structural factors show an inverse correlation with the current account balance in the post-crisis period. Therefore, in this period cyclical factors have assumed a key role in the creation of the current account deficit. The main factor is the reduction of internal demand.[4] On the other hand, the export of goods and services continued to grow (except in 2009 when there was a significant decline). From these developments it can be predicted that the current account deficit will expand as domestic economic activity increases. The same result can be expected if export demand weakens.[5] The conclusion is that structural changes in domestic production are necessary in order to strengthen exports and to ensure sustainability of trade and current account deficits in the long run.

Trade deficit (deficit in goods and services) is the main driver of Serbia's current account deficit (Appendix, Figure A2). Goods and services imports are strongly connected to the level of economic activity, and this connection is more pronounced during economic expansion than during economic contraction. Thus, economic growth, even in the short run, leads to current account deterioration[6] (the significance of the cyclical component of economic growth can be seen in Figure A3 in the Appendix). Based on these findings, it can be concluded that cyclical factors affect Serbia's current account balance.

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4 In the period from 2009 to 2016, Serbia registered a negative annual growth rate of real GDP in three years (2009 (–3.1), 2012 (–1) and 2014 (–1.8). In two years the growth was less than 1% (2010 (0.6) and 2015 (0.8)). In the remaining three years the growth rates were: 2011 (1.4), 2013 (2.6) and 2016 (2.8) (NBS 2017, Table B, p.68).

5 Serbia's most important export market is the European Union (EU). The EU's economic recovery is slow, affecting its import demand. In recent analyses the weaker global trade performance, according to the growth of global GDP, has been attributed to structural factors such as retrenchment of the global value chain, the revival of protectionism, and underfunding of trade (ECB 2016). In addition, changes in the demand structure and cyclical factors have resulted in a lower trade-to-GDP growth ratio.

6 For example, the current account deficit increased considerably in 2007 and 2008 when the rates of real economic growth were above 5%, while in 2009 a sharp fall in this deficit was registered (improvemed in the current account) and a negative growth in GDP was recorded. Weakening domestic demand in the post-crisis period has reduced imports, which contributed to reducing the trade deficit and consequently the current account deficit.

Unlike cyclical factors, structural factors have a more permanent impact on current account fluctuations. The long-term dependence of domestic production on imported raw materials is important, as is the dependence of some larger FDIs on imported inputs.[7] The liberalization of the domestic market since 2000 and the process of harmonization with the EU have increased the impact of structural factors on the current account balance. The price and structural aspects of domestic economy competitiveness also affect the structural component of the current account. Continuous export growth since 2009 has led to current account improvements.

This paper uses various filters to isolate the long-term component of the current account and to create a cyclical component. Our findings for the full sample show that structural factors were more important determinants of the current account deficit than cyclical impacts. This confirms the starting hypothesis of our research. Cyclical factors had a stronger impact in the post-crisis period when the deficit was reduced, but their presence was registered even in the pre-crisis period. Although their influence decreased during the crisis and in the post-crisis period, our findings confirm that structural factors determine the trend of the current account balance in the long run. Therefore, for long-term improvement in the current account it is necessary to increase export competitiveness. This implies structural changes in production in line with world demand and, above all, demand in the EU market.

Increased application of scientific advances in new products and processes and raising the technological level of exports are channels that can promote exports in the coming years. Increasing the efficiency of domestic businesses and greater availability of financial resources for small and medium-sized enterprises should

[7] We assessed the regression model in which the logarithmic import value is a dependent variable and the logarithmic value of exports is an independent variable (monthly data for the period January 2004–December 2016). The estimated coefficients are statistically significant and show that if exports increase by 1%, imports will increase by 0.5%. Although this is a simple regression the result is indicative, as the coefficient of determination R^2 = 81%. The estimated coefficient 0.518 with the independent variable indicates that the increase in exports should increase imports, primarily raw materials, components, semi-finished products, and equipment. However, for a long time this would lead to a reduction in the trade balance deficit, especially if more domestic production components were used in producing exports. A significant part of the FDI inflow is not directed at the tradable sectors so it does not increase export capacity nor help to reduce the current account deficit.

further boost exports.[8] In addition to these restrictions on a more dynamic increase in exports, Serbia does not have a sufficiently high rate of domestic savings, export promotion is weak, and there are no mechanisms for attracting FDI into export-oriented production. The overall impact of these restrictions on the current account is negative. An increase in exports, with greater support as outlined above, could ensure the sustainability of the current account deficit.

It is necessary to apply appropriate measures to reduce the impact of structural factors on the current account deficit. These results show the need for appropriate institutional measures to create a more favourable climate for investment in export-oriented sectors. The technological level of exports needs to be increased, with greater application of recent scientific advances to increase domestic productivity and competitiveness. The third recommendation is that financing of exports, primarily by small and medium-sized enterprises, needs to be facilitated. Likewise, the identified role of cyclical factors in creating the current account deficit points to the need to implement appropriate counter-cyclical measures, which should diminish the influence of these factors on the current account. Improving only one area is insufficient to ensure the sustainability of the current account deficit in the existing framework.

Over-reliance on FDI to finance current account deficits can make them difficult to sustain due to the potential growth of payments in the primary income account. Any change in foreign investors' behaviour may lead to distortions in financial flows, with direct consequences for the current account. This is particularly significant in the context of the recent global financial and economic crisis, which highlighted these risks.

5. CONCLUSION

The findings in this paper show structural factors had a greater impact on the creation of Serbia's current account deficit than cyclical factors, over the whole of the studied time period, 1997–2016. Cyclical factors had a greater impact on reducing the current account deficit over the period 2013–2016. In the period 2013–2016 the structural component shows a deficit of 4.9% of GDP, while the cyclical component suggests a surplus of 1% of GDP. The distance between the

[8] Bardakas (2016), for the example of Greece, shows that structural factors – such as boosting import substitution and implementing an export promotion strategy – need to be adjusted to permanently improve the current account. Brissimis et al. (2010) shows that declining private savings played a key role in the deterioration of Greece's current account after 1999.

structural component and the cyclical component, as indicators of the long-term trend of the current account balance, is even greater when observing the estimates obtained for the entire sample period of 1997–2016.

Although cyclical factors have played a key role in reducing the current account deficit during the post-crisis period, the long-term trend of the current account balance is largely related to structural factors. Liberalization of the domestic market and FDI inflows have contributed to the increase in exports, which certainly slowed down the increase in the current account deficit. Measures to improve exports (further reducing border costs, reducing non-tariff barriers in trade with CEFTA countries, and facilitating financial support for exports) will improve the competitiveness of the domestic economy. Improving the quality and efficiency of domestic institutions would also boost exports of goods and services. This would reduce the non-price competitiveness gap, primarily in the EU market, with the prospect of maintaining export growth. Adjusting the structure of domestic production to the EU's import demand structure should be a key direction of structural reforms. Encouraging research and development activities and a greater focus on innovation in the production process are prerequisites for avoiding the 'middle-income trap' and increase the prospect of sustaining the current account deficit in the area below 5% of GDP.

Our research in this paper has some limitations. The first is the short time series with only 20 annual data for the selected macroeconomic variables. The second limitation relates to the fact that imbalance in the trade balance is the main generator of the current account deficit. A more detailed analysis of the impact of structural factors on the current account would be obtained by analysing individual components of the trade imbalance. This analysis would provide the basis for determining the areas in which the economy needs to undergo fundamental structural changes with the goal of reducing Serbia's trade deficit. Incorporating the input-output matrix in this analysis would make it easier to see the actual contribution that specific segments of the economy make to the creation of the trade deficit, and therefore to the current account deficit. Future research in this area is recommended.

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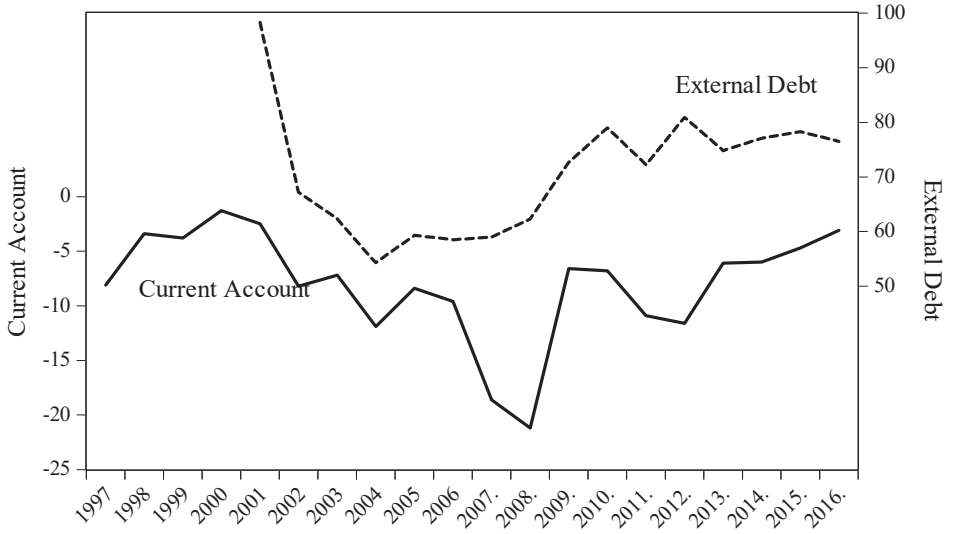
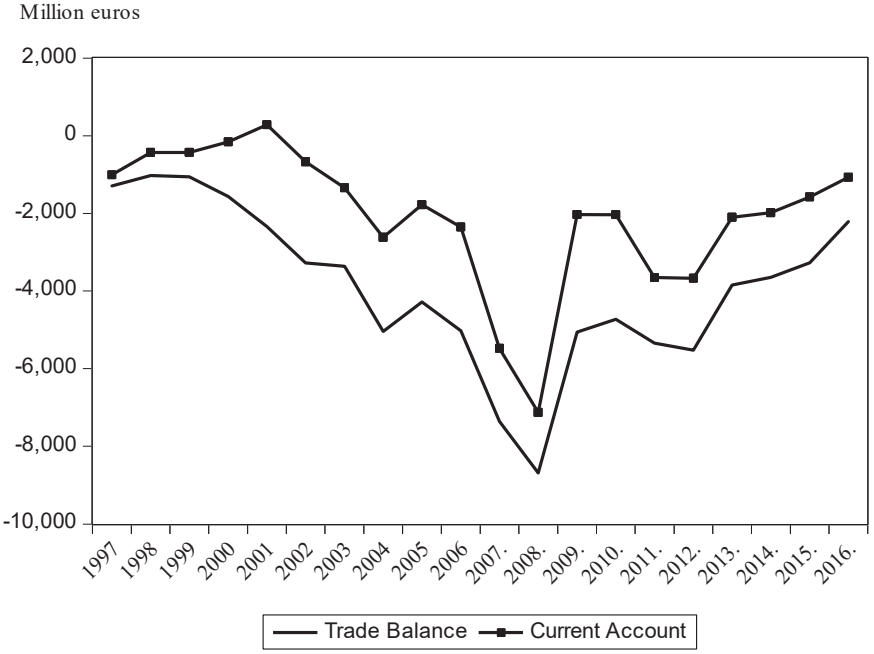
APPENDIX

Figure A1: Serbia's Current Account and External Debt as percentage of GDP



Source: National Bank of Serbia, https://www.nbs.rs/internet/english/80/platni_bilans.html Accessed 23/12/2017. Author's calculation.

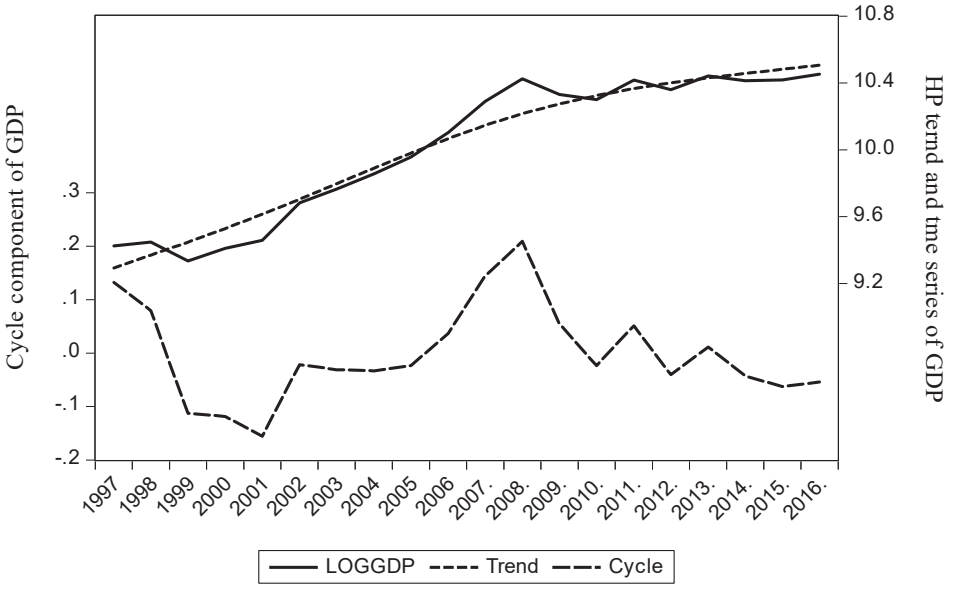
Figure A2: Current Account and Trade Balance



Note: Trade balance includes goods and services.

Source: National Bank of Serbia, https://www.nbs.rs/internet/english/80/platni_bilans.html Accessed 23/12/2017. Author's calculation.

Figure A3: HP trend of GDP, log GDP, and cycle component of GDP



Note: Hodrick-Prescott Filter (lambda=100)

Source: NBS (2017), *Inflation Report* (November), Table B, p.63; NBS (2009), *Inflation Report* (November), Table B, p.55. Author's calculation.