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THE EFFECTS OF FDI NET INFLOW ON THE CURRENT ACCOUNT OF SOUTHEAST EUROPE COUNTRIES – A PANEL CAUSALITY ANALYSIS

ABSTRACT: *This paper examines the relationship between the current account (CA) and the foreign direct investment (FDI) net inflow in the Southeast Europe (SEE) countries. The panel data framework of five SEE countries for the period 2000-2020 are used. Our research has three main findings. First, using the vector autoregressive VAR(2) model, a long-run relationship between the CA and the net FDI inflow is identified (a 1% increase in the net FDI inflow leads to a 1.011% increase in the CA deficit). This suggests that FDI stock will put upward pressure on the CA of the SEE countries in the long run. Second, applying the panel VAR model Granger causality test, we found that there is a two-way directional Granger causality. Third, our results from the vector error correction (VEC) model suggest that about 26% of the dynamics of the CA deficit adjusts to the long-run equilibrium path with the net FDI inflow each year.*

KEY WORDS: *Southeast Europe, foreign direct investment, current account, vector autoregressive model, vector error correction model, Granger causality*

JEL CLASSIFICATION: C22, F21, F32, F40

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1. INTRODUCTION

The purpose of this paper is to examine the relationship between foreign direct investment (FDI) net inflow and the current account (CA) in the balance of payments for the SEE countries. The following countries are included in the analysis: Albania, Bosnia and Herzegovina, Montenegro, Serbia, and North Macedonia. These countries, according to the UN classification, form a group of SEE countries, and are defined based on geographical location. According to the same source, SEE countries are also classified as economies in transition. [1] The three main types of foreign capital inflows into SEE countries determine the balance of payments financial account. These are FDI, portfolio investment, and external debt. The transition processes in these countries have imposed a stronger role for FDI and portfolio investment than for the previously dominant role of foreign borrowing. All types of international capital flows are associated with changes in the CA balance. An increase in the CA deficit involves both an increase in national investment and a fall in national savings. The external borrowing due to increasing investment opens up the possibility for an increase in production and exports.[2] Problems arise at the time of reversal in capital flows because the reduction in capital inflows is associated with a sharp reversal in CA balance. This includes large macroeconomic costs.[3] Despite the fact that the Covid-19 pandemic is disrupting international production networks, the OECD (2020)

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1 For UN country classification see https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2022_ANNEX.pdf (Statistical Annex of *World Economic Situation and Prospects 2022*). According to the UN classification, the countries of the Commonwealth of Independent States and Georgia, belong to the group of countries in transition, which includes the SEE countries.

2 In periods of strong investment demand, when volume investments exceed domestic savings, foreign capital inflows are needed to finance the CA. In the literature, this is known as t*he intertemporal current account model* (see Obstfeld & Rogoff, 1995; Bergin, 2006). Bosworth and Collins (1999) concluded that a significant part of capital inflows to developing countries during the period 1979-1995 was used to finance CA deficits, that is, to finance investments.

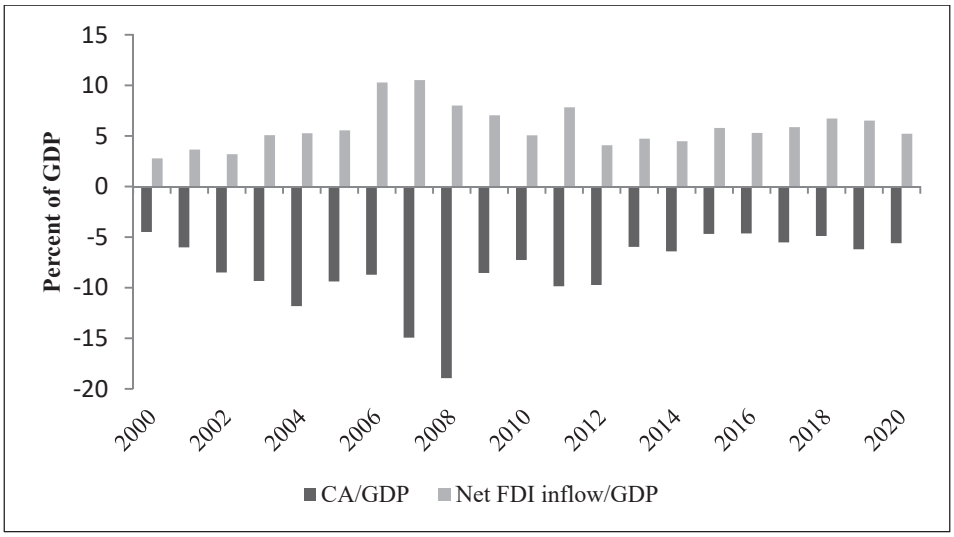
3 For output costs due to a sudden stop (the capital flow reversals that force the country to restore the balance between exports and imports), see Hutchison and Noy (2006). For consequences of the reversal in capital flows in emerging markets since 1991, see Eichengreen, B., and Gupta, P. (2016). The extreme shock (COVID-19 pandemic) led to a sharp reversal in capital flows in the short term. The portfolio investment outflow from emerging markets has exceeded $100 billion since January 21, 2020 (IMF, 2020, p. 11).

estimates that FDI will continue to play a key role in financing the development of the SEE countries.

The growing financial integration in the world was accompanied by an upward trend in the CA deficit of SEE until the outbreak of the global economic crisis in 2008. This was followed by a trend of sharp reduction of this deficit until 2015, with a gradual increase after that year (Figure 1). The sharp decline in the CA deficit was primarily caused by a deep recession and reflects a sharp reduction in domestic demand. Since 2010, the CA deficit in the SEE as a group is less than 10% of GDP (10% in 2011 and 2012). CA deficits before the outbreak of the global crisis in 2008 were financed by growing inflows of foreign capital as transition processes in these countries increased the opportunities for profitable use of foreign funds. Often, the foreign capital inflow was higher than the CA deficit, which affected the growth of foreign exchange reserves in most countries (Lane, 2013).

An important component of capital inflows into SEE is the net FDI inflow, and many countries believe that FDI has become a significant component of economic development (Campos & Kinoshita, 2008). Because the business environment has a strong impact on FDI inflows (Vučkovic et al., 2020; Borojo & Yushi, 2020), countries seek to facilitate investment in their economies in different ways. Along with the improvement of the investment environment, fiscal and financial incentives are used to attract FDI, and employment subsidies are approved in some countries. Subsidies of this type can also have negative effects. One of them is that once they are introduced, they are difficult to abolish because their users lobby to keep them (World Bank, 2020, p. 175).

Figure 1: Current account balances and net FDI inflow for SEE countries



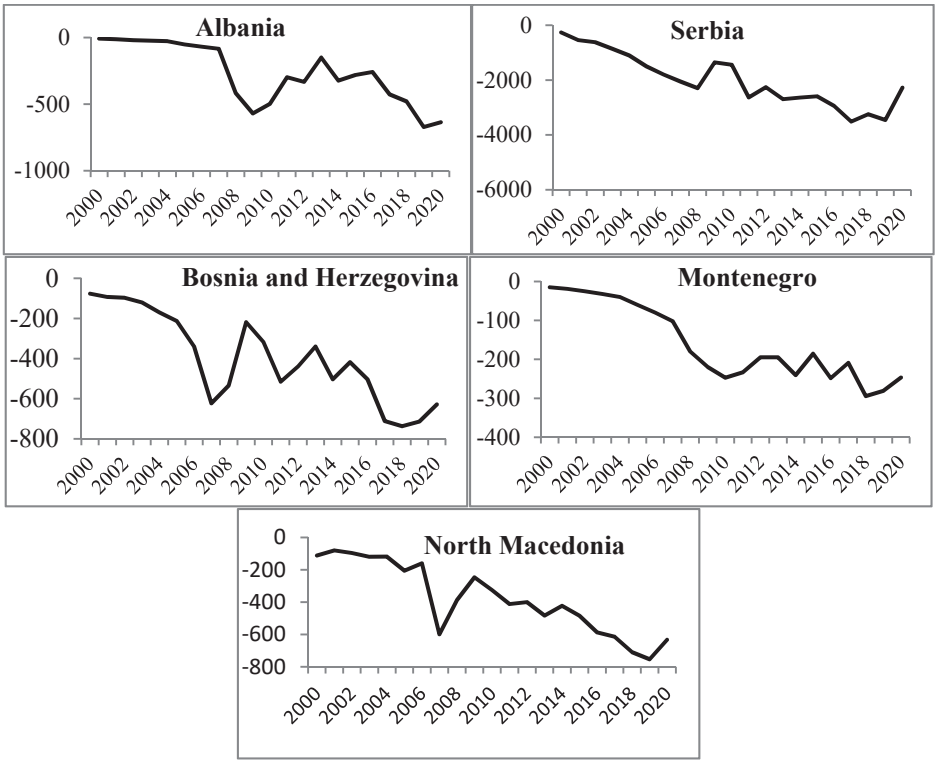
Note: Foreign direct investment refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Data are in current U.S. dollars.

Source: Own elaboration based on data of the World Bank. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart Accesed 23/05/2022.

On the other hand, FDI inflows, motivated by lower labour costs and economies of scale, increase the country's participation in international trade. For production purposes, raw materials and intermediate goods are imported directly, and often through local component suppliers. The final products are then exported. Some studies show that FDI strongly influences exports (Vukšić, 2005; Apostolov, 2016), while in other studies there is no convincing evidence that FDI influences export (Christova-Balkanska, 2009; Estrin & Uvalic, 2013). However, the possible withdrawal of capital during a crisis or the downward phase of the business cycle may harm the CA balance (Bedir & Soydan, 2016). The FDI inflows in the privatisation process in most SEE countries have contributed to the deterioration of the CA, as part of the privatisation proceeds have been spent on imports of goods. Calvo et al. (1996) prove that an increase in the CA deficit is one of the less desirable macroeconomic effects of large capital inflows into debt countries. The persistence of the CA deficit raises the question about its sustainability in the case of sudden reversals of capital flows (Aristovnik,

2006). In most SEEs, the FDI stock generates increasing dividend payments to a foreign resident, which increases the liability in the primary income account (Figure 2).

Figure 2: Primary income account of selected SEE countries - payments, in millions of dollars



Note: Primary income payments refer to employee compensation paid to nonresident workers and investment income (payments on direct investment, portfolio investment, other investments).

Source: Own calculation based on The World Bank data, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart (Accessed 23/05/2022).

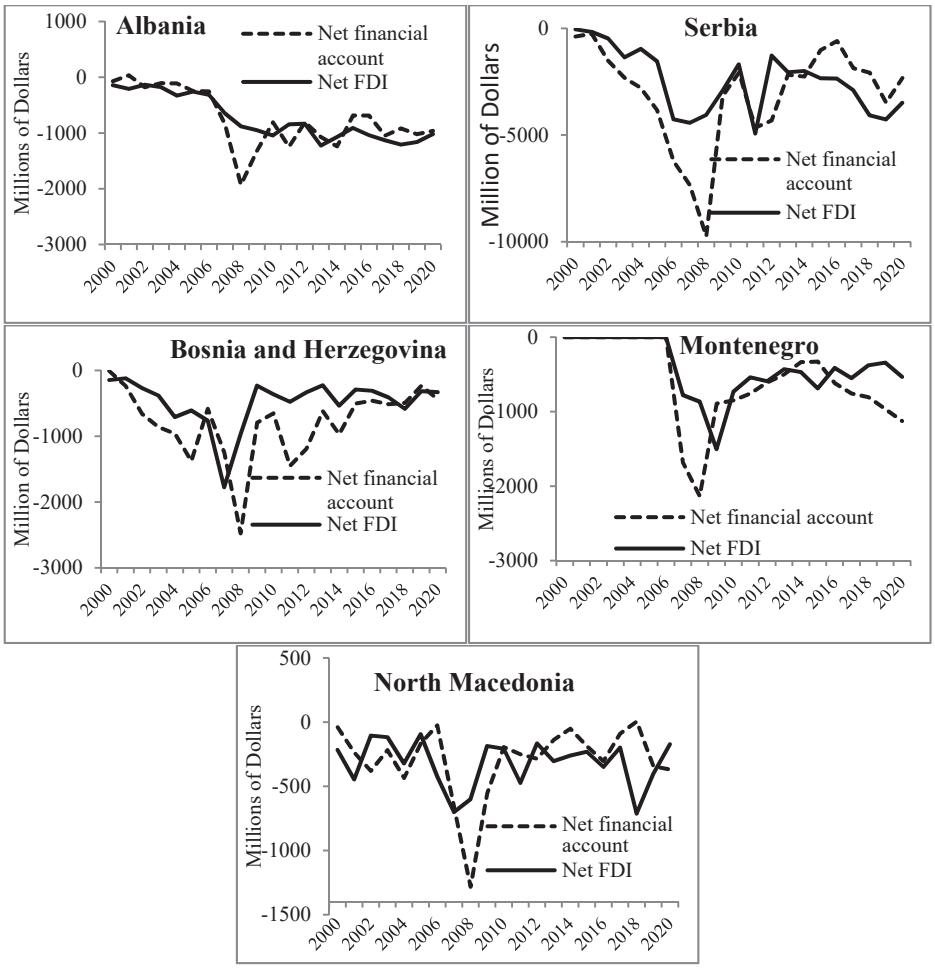
Figure 2 shows an increase in payments in the primary income account of SEE countries until 2008. Since the reduction of payment amounts in 2009 and 2010, the payment trend in SEE countries has been increasing again. A part of this income is reinvested (retained earnings) in the countries where it was created,

thus increasing the financial account balance.[4] The increase in the stock of FDI in these countries increases the dividend payouts to foreign investors, which increases the negative current account balance.[5] Other types of foreign capital inflows into SEE also contribute to the negative balance in the primary income account. Given the importance of FDI in total foreign investment in SEE countries, Figure 3 provides a comparative overview of the financial account balance and the net FDI balance (net FDI inflow minus net FDI outflow) for SEE countries. Coordinated development of these two variables can be observed in all SEE countries. This means that the net financial inflow to SEE countries largely depends on the net inflow of FDI. This confirms the important role of the net FDI inflow for the balance of payments stability of these countries.

[4] Dividend reinvestment is an internal generation of financial resources to finance additional investments in expanding the production of a foreign branch of a multinational company (Nguyen, 2016). Most emerging markets have a negative balance of primary income (Behar & Hassan, 2022).

[5] The dividends and reinvested earnings based on FDI stock in Serbia amounted to 2.7% and 3.3% of GDP in 2020 and 2021, respectively (author's calculation according to NBS data, https://nbs.rs/sr/drugi-nivo-navigacije/statistika/platni_bilans/ (The dividends and reinvested earnings data);
https://www.nbs.rs/export/sites/NBS_site/documents/publikacije/ioi/izvestaji/ioi_05_2022.pdf (GDP data, Table B, p. 82) (Accessed 22/06/2022). The growth of the CA deficit during the crisis can lead to the instability of the exchange rate due to the possible sudden capital flight (Gervais et al., 2016)

Figure 3: Net financial account and net FDI for SEE countries, in million dollars



Note: 1) The negative values of the financial account balance and the FDI account indicate a net inflow of capital into the country; 2) The net financial account shows net acquisition and disposal of financial assets and liabilities. It measures how net lending to or borrowing from nonresidents is financed and is conceptually equal to the sum of the balances on the current and capital accounts. Data are in current U.S. dollars (According to the World Bank methodology).

Source: Own calculation based on the World Bank data, https://data.worldbank.org/indicator; Data for Serbia for the period 2000-2006 from https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/platni_bilans (Accessed 23/03/2022).

The research question addressed in this paper is whether net FDI inflows cause CA imbalances in SEE. The main research hypothesis of this study is that net FDI inflow in SEE countries may harm the CA balance through the primary income account. The process of hypothesis testing begins by examining whether a long-run relationship between FDI and the CA in SEE countries exists, with the intention of revealing the direction of causality between these two variables. The empirical research is conducted using the vector autoregressive (VAR) model. As a first step, unit root tests have been applied to test the stationarity of the panel time series. The results indicate that the time series has one unit root each. In trying to determine whether the time series are cointegrated, the Johansen cointegration test will be used. Then, the direction of causality will be tested using the Granger causality test in the VAR model. Finally, we estimate the relationship between the CA and the net FDI inflow in the VEC model. This study aims to contribute to the literature by examining the relationships between the CA and FDI net inflow in terms of the implications of net FDI inflows on the CA in SEE. The remainder of this paper is organised as follows. Section 2 provides the theoretical and empirical literature on the relationship between the CA and FDI. Section 3 discusses the data and research methodology. The fourth section presents the empirical results and discussion. Finally, the fifth section contains the conclusion and policy recommendations.

2. LITERATURE REVIEW

In this part of the paper, we provide an overview of relevant research for countries at a similar level of economic development as SEE countries, measured by per capita gross national income (GNI). (UN methodology cited in footnote 1). SEE countries, according to per capita GNI as of 1 July 2021, belong to upper-middle-income economies. The existing literature does not pay enough attention to the study of the causality relationship between FDI inflows and the CA, nor does it adequately examine the impact of FDI inflows on the primary income account. In the available studies, there are mixed results about the directions of influence between FDI and the CA. The published papers can be divided into two groups. One contains papers that investigate the relationship between certain types of capital inflows and the CA for groups of countries. The second group comprises empirical research on the relationship between FDI and the CA for individual

countries. The literature review presents research findings for countries at a similar level of development as SEE.

Lau and Fu (2011), examining four emerging markets, concluded that Granger causality exists from a financial account (FA) to a CA. These authors also concluded that causality runs from the CA to FDI and portfolio investment in Indonesia, and from the CA to portfolio investment in the Philippines. Lyroudi et al. (2004) examined the effects of FDI on the rate of growth in a panel of countries in transition using Bayesian analysis. The findings of this study show that there is not any significant relationship between FDI and economic growth. The paper does not point out the effect of FDI inflows on the CA, although one might intuitively expect it to be unfavourable.

Bayraktar-Saglam and Yalta (2015) examined the causality between the CA and international capital flows for emerging countries in the period 1980-2012 by applying the heterogeneous panel Granger causality framework. In addition to total capital flows, the links between different types of capital flows (FDI and portfolio investment) and the CA were examined. These authors found that causality between foreign capital flows and the CA is highly heterogeneous.

Ercegovac and Beker Pucar (2021) investigated the mutual relationship between FDI and the external balance of selected emerging European economies. The research hypotheses are tested using a robust micro panel model in the period before and after the structural break caused by the global financial crisis (GFC). The results obtained show that substantial FDI inflows are significantly related to the negative trade balance. This conclusion also applies to the countries of the Western Balkans. This resulted in the recommendation that attracting greenfield investments in particular should be primarily focused on exports in order to stabilise the trade balance.

The second group of results consists of papers that investigate the relationship between FDI and the CA for individual countries. Seabra and Flach (2005) examined the existence of causality between FDI and profit remittance in Brazil using the Granger causality test procedure. Quarterly data for the period 1979-2003 were used in the research. The findings of this study show that FDI causes repatriation of profits, as well as that there are significant negative long-term effects of FDI-stimulating policies for the Brazilian economy.

Garg and Prabheesh (2015) on the example of the Indian economy concluded that there is no causal link between the CA and the FA, but that there is causality from non-debt flows to the CA, through the real effective exchange rate. They also noted that the volatility of capital flows may worsen the CA balance, which led to the recommendation that the stability of the financial sector should be strengthened before full capital account convertibility is introduced. Mukherjee et al. (2014) also analysed the relationship between FDI and India's CA. The empirical testing was conducted on quarterly data in the period 1990-2011. Their research found that there is a unique long-term relationship between FDI and the current account balance, with two endogenous structural breaks. It was also found that there is a one-way causality from the FDI to the current account at a significance level of 5%. Despite believing that FDI is beneficial as a source of financing the CA deficit, these authors, nevertheless, concluded that FDI can also lead to a balance of payments problem. They believe that the large foreign exchange outflow based on the repatriation of profits has increased the concerns of economic policymakers in the CA balance. Kaur et al (2012) analysed the relationship between FDI and the CA in India. Using the Toda-Yamamoto Granger causality technique (Granger causality technique) for the period 1975-2009, they showed that FDI and the CA are cointegrated in the long run. They also established the existence of unidirectional causality from FDI to the CA. These findings were confirmed by an additional analysis of the relationship between FDI and the components of international trade (exports and imports).

Ersoy (2011) analysed the relationships between the components of the FA and the CA of Turkey in the period 1987-2010 using quarterly data. The findings of this study show that there is a one-way causality that runs from FDI to the CA. These findings, according to the author, suggest that capital inflows affect the formation of the CA deficit and that the sustainability of this deficit in Turkey requires better management. Karahan and Colak (2020) investigated the direction of the causality between the FA and the CA in Turkey. The research is based on quarterly data using the vector error correction (VEC) model. The empirical results confirm that the FA causes the CA, with the authors concluding that capital inflows in Turkey can worsen CA performance. Yalta (2011) found that FDI in the case of Turkey leads to an increase in imports and profit remittances outflow, which leads to the destabilisation of the CA.

3. THE RESEARCH METHODOLOGY AND DATA

3.1. Methodology and Empirical strategy

To study the relationship between the CA and FDI net inflow, we use a VAR model (panel data) with two-time series: CA and net FDI inflow. There are numerous approaches to VAR analysis in the literature (for details, see Lütkepohl, 2005). To test for Granger causality between two variables, we will first estimate the VAR model of order p based on the bivariate panel series. The VAR model of dimension *k* and order *p* can be described as follows:

$$x_t = A_1 x_{t-1} + A_2 x_{t-2} + \ldots + A_p x_{t-p} + B y_t + \varepsilon_t \quad (1)$$

where

$x_t = (x_{1t}, x_{2t}, \ldots, x_{kt})'$ is a k x 1 vector of endogenous variables,
$y_t = (y_{1t}, y_{2t}, \ldots, y_{dt})'$ is a d x 1 vector of exogenous variables,
$A_1, \ldots, A_p$ are k x p matrices of lag coefficients,
B is a k x d matrix of exogenous variable coefficients,
$\varepsilon_t = (\varepsilon_{1t}, \varepsilon_{2t}, \ldots, \varepsilon_{kt})'$ is a k x 1 random component of the model, with $E(\varepsilon_t) = 0$. Thus, it is a vector of innovations.

If time series have a unit root, it is necessary to examine whether there is cointegration between them. Based on the Granger representation theorem (Johansen, 1991), two variables that possess a unit root are cointegrated only if there exists a VEC representation of that time series.

If we denote the vector of time series (px1) which contain a unit root by X_t, then the VEC model of X_t, according to Hoffman, L.D. and Rasche, H.R. (1997, p. 1-2), can be presented as:

$$\Delta X_t = \mu + \alpha\beta' X_{t-1} + \sum_{j=1}^{k} \Gamma_j \Delta X_{t-j} + \varepsilon_t \quad (2)$$

where Γj are (pxp) coefficient matrices (j=1, ..., k), μ is a (px1) vector of constants that includes any deterministic components in the system, and α and β are (pxr) matrices. 0 < r < p, where r is the number of linear combinations of the elements of X_t that are affected only by transitory shocks. The term $\beta' X_{t-1}$ is the error correction and represents mean-reverting weighted sums of cointegrating vectors

and data from the period t-1. α is the matrix of error correction coefficients. In the absence of cointegration, the VEC model is a VAR in the first differences, and the number of independent permanent shocks is equal to the number of variables (p). Because the time series in this paper (each individually) have one unit root, i.e. they are integrated I(1), we will apply the Johansen cointegration test. This test determines the number of cointegration relations (the cointegration rank). The output of the Johansen cointegration regression shows the long-run relationship and co-movement of variables.

In the next step, we will apply the VEC model. Since the VEC includes the number of identified cointegration relations in the specification, it also restricts the long-term behavior of endogenous variables in the direction of convergence to their cointegration relationship, allowing for short-run adjustment dynamics. The cointegration term is known as the error correction term (this parameter contains cointegration information) since the deviations from long-run equilibrium are corrected gradually through several series of smaller short-run adjustments. To simplify, let us consider a system of two variables with one cointegration equation, and without lags. The cointegration equation in this case is:

$$x_{2,t} = \beta x_{1,t} \tag{3}$$

and the corresponding VEC model is:

$$\Delta x_{1,t} = \alpha_1\left(x_{2,t-1} - \beta x_{1,t-1}\right) + \varepsilon_{1,t} \tag{4}$$

$$\Delta x_{2,t} = \alpha_2\left(x_{2,t-1} - \beta x_{1,t-1}\right) + \varepsilon_{2,t} \tag{5}$$

In the simplified model, the expression on the right side of the equation represents the error correction term. If x_1 and x_2 deviate from the long-run equilibrium, the error correction term will be different from zero, and each variable adjusts to restore the long-run equilibrium. The coefficient α_i measures the speed of adjustment of the *i*-th endogenous variable in the equilibrium direction.

The Granger causality test will be applied in the estimated VEC model (Granger, 1980). This concept does not mean that one variable directly affects another, but only that there is causality in the sense that the future values of one variable can

be predicted more accurately if the lagged values of the other variable are used (x Granger causes y if the lagged values of x can improve the explanation of y). Thus, this concept measures the connection between variables but does not imply that y is the result of x. According to IHS Global (2017), the bivariate regressions in the panel take the form:

$$x_{i,t} = \alpha_{0,i} + \alpha_{1,i}x_{i,t-1} + \cdots + \alpha_{k,i}x_{i,t-k} + \beta_{1,i}y_{i,t-1} + \cdots + \beta_{k,i}y_{i,t-k} + \varepsilon_{i,t} \quad (6)$$

$$y_{i,t} = \alpha_{0,i} + \alpha_{1,i}y_{i,t-1} + \cdots + \alpha_{k,i}y_{i,t-k} + \beta_{1,i}x_{i,t-1} + \cdots + \beta_{k,i}x_{i,t-k} + \varepsilon_{i,t}\,, \quad (7)$$

where t denotes the time dimension of the panel and i represents a cross-sectional dimension.

Then, we will perform the Granger causality test in a panel data model using a method that assumes that all coefficients are same across all cross-sections, ie the joint hypothesis is (IHS Global, 2017, p. 1011):

$$\alpha_{0,i} = \alpha_{0,j},\ \alpha_{1,i} = \alpha_{1,j}, \ldots, \alpha_{l,i} = \alpha_{l,j}, \forall_{i,j} \quad (8)$$

$$\beta_{1,i} = \beta_{1,j}, \ldots, \beta_{l,i} = \beta_{l,j}, \forall_{i,j} \quad (9)$$

Finally, the adequacy of the model will be tested.

3.2. Data Analysis

The following SEE countries are included in the paper: Albania, Bosnia and Herzegovina, North Macedonia, Montenegro, and Serbia. The empirical analysis in this paper is carried out by using the annual data for SEE countries for 2000-2020. Natural logarithms of the CA and net FDI inflow are denoted as LCA and LFDI, respectively.[6] The data are drawn from the World Development Indicators

[6] According to the World Bank methodology, foreign direct investment refers to direct investment equity flows in the reporting economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship.

database of the World Bank.[7] The data on FDI net inflows are based on the sixth edition of the Balance of Payments Manual (IMF, 2014). The FDI net inflows are the value of inward direct investment made by non-resident investors in the reporting economy.

4. EMPIRICAL RESULTS AND DISCUSSION

In this study, two second-generation panel unit root tests were used for checking the stationarity of time series LCA and LFDI: the Bai and Ng (2004) – PANIC test and the Pesaran (2007) – CIPS test[8]. The intercept and trend were applied as deterministic components. The tests were conducted at the level of each variable and its first difference. The findings indicate the presence of a unit root in the levels of both variables in both tests, at the significance level of 5%. Then we proceeded to check the stationarity of the first difference of a time series, and we found both variables are stationary at the first difference. For this reason, the next step was to apply the Johansen cointegration test within the VAR model. Before that, we started with the VAR (2) model to choose the optimal lag length. The results are given in Table 1.

[7] Retrieved from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart 23/05/2022.

[8] The second generation of panel unit root tests assumes the existence of a cross-sectional dependence between individual panel units, which is a more realistic assumption for analysing the relationship of macroeconomic variables in a panel of open countries.

Table 1: VAR Lag Order Selection Criteria

Lag length	LogL	LR	FPE	AIC	SIC	HQ
0	-172.7000	NA	0.740548	5.375384	5.442288	5.401782
1	-129.6440	82.13748	0.222693	4.173663	4.374375	4.252857
2	-120.6656	16.57558	0.191156	4.020480	4.355001*	4.152470
3	-112.8813	13.89207	0.170326	3.904039	4.372368	4.088825*
4	-111.7741	1.907686	0.186537	3.993050	4.595188	4.230632
5	-104.0846	12.77639*	0.167018*	3.879527*	4.615473	4.169905
6	-101.8709	3.541991	0.177225	3.934489	4.804243	4.277663
7	-99.72159	3.306593	0.188739	3.991434	4.994997	4.387404
8	-96.78306	4.339990	0.196562	4.024094	5.161466	4.472860

Note: * indicates lag order selected by the criterion. LR- sequentially modified LR test statistic (each test at 5% level); FPE (final predictor error); AIC-Akaike information criterion (Akaike, 1974); SIC-Schwarz information criterion (Schwarz, 1978); Hannan-Quinn information criterion (Hannan-Quinn, 1979).

Source: Author's calculation.

In Table 1, it can be seen that the three information criteria indicate that the optimal lag order should be five, and the SIC criterion suggests two as the optimal lag length for the Johansen cointegration test. However, for lag five there is autocorrelation in the VAR model. That is why we opted for the two lag lengths, according to the SIC information criterion. Starting from the VAR optimal lags, according to the Johansen test, we chose the deterministic components of the VAR model. We made the selection according to the values of the AIC and SIC criteria. The results are given in Table 2.

Table 2: Selection of Cointegrating Relations by Model

Data Trend:	None	None	Linear	Linear	Quadratic
Test Type	No Intercept	Intercept	Intercept	Intercept	Intercept
Model	1	2	3	4	5
Akaike Information Criteria by Rank (rows) and Model (columns)					
0	3.991594	3.991594	4.024698	4.024698	4.068355
1	3.848849*	3.857364	3.871252	3.869060	3.891279
2	3.930104	3.918904	3.918904	3.935374	3.935374
Schwarz Criteria by Rank (rows) and Model (columns)					
0	4.213799	4.213799	4.302455	4.302455	4.401663
1	4.182157*	4.218448	4.260111	4.285695	4.335690
2	4.374514	4.418866	4.418866	4.490887	4.490887
Number of cointegration relations selected by the model (significance at the 0.05 level**)					
Test Type					
Trace	1	1	1	1	2
Max-Eig	1	1	1	1	2

Note: *Suggested cointegration model. ** Critical value according to MacKinnon-Haug-Michelis (1999).

Source: Author's calculation.

Based on the AIC and SIC criterion (minimum value), model 1 suggests a single cointegration relationship, where the cointegration equation includes neither an intercept nor a trend.

Having decided for model 1, using the Johansen cointegration test, we estimated the long-run relationship between the variables in the environment of the VAR (2) model. The Breusch (1978) and Godfrey (1978) autocorrelation test in the VAR model of order 2 was applied, and it was concluded that there is no autocorrelation at lag one, but that it exists at lag two. The distribution of estimated residuals in the VAR (2) model, according to the results of the Doornik-Hansen (2008) normality test, does not deviate significantly from the normal distribution. The results of the Johansen cointegration test are given in Table 3. The trace statistics test and the max-eigenvalue test reveal that there is one cointegration equation with a 0.05 significance level.

The long-run relationship between the CA and the net FDI inflow can be assessed through the estimation of unrestricted cointegrating coefficients, normalised by $\beta' S_{11} \beta = I$, where S_{11} is defined in Johansen (1995). Each variable is considered individually as an independent variable (the model is estimated twice.) Table 4 shows the long-run parameter estimates. In Relation 1, LCA is a dependent variable, and in Relation 2, the dependent variable is LFDI net inflow. Due to the normalisation procedure, the estimated coefficients have inverted signs, which should be taken into account in conducting their analysis.

Table 3: Johansen Cointegration Test

Trace Test				
Hypothesised no. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
H_0: r=0; None*	0.206763	21.53410	12.32090	0.0011
H_0: r=1; At most 1	0.007605	0.687060***	4.129906	0.4666
Maximum Eigenvalue Test				
	Eigenvalue	Max-Eigen Stat.	0.05 Critical Value	Prob.**
H_0: r=0; None*	0.206763	20.84704	11.22480	0.0008
H_0: r=1; At most 1	0.007605	0.687060***	4.129906	0.4666

Note: * Denotes rejection of the hypothesis at the 0.05 level. ** MacKinnon-Haug-Michelis (1999) p-values. *** The estimated statistics are less than the corresponding critical value; thus a null hypothesis that one cointegration vector exists is accepted.

Source: Author's calculation.

In Relation 1 (Table 4), in which the normalisation is performed on the LCA, a coefficient of LFDI (-1.011) means that an increase in the balance of LFDI (surplus) of 1% leads to an increase in the CA deficit of 1.011% (an increase in net FDI inflows leads to an increase in the CA deficit). Relation 2 shows that an increase in the CA deficit of 1% leads to an increase in the net FDI inflow of 0.988%. Both coefficients are statistically significant and have the expected sign.

According to the sixth edition of the IMF's Balance of Payments and International Investment Position Manual (BPM6)[9], the CA balance is affected

[9] See https://www.imf.org/external/pubs/ft/bop/2007/bopman6.htm

by the trade balance (goods and services), the primary income account balance, and the secondary income account balance. As mentioned in the introduction, the inflow of foreign direct investments affects one part of the trade balance and the other part, as one of the components, the balance of the primary income account. Therefore, the CA balance is influenced by several factors, with the net inflow of FDI being only one of them. For this reason, the obtained econometric results of the link between LCA and LFDI should be viewed as indicative in terms of the direction of causality, with the limited significance of the obtained quantitative values.

Table 4: The Estimation of the long-run relationship between variables LCA and LFDI

	LCA	LFDI
Relation 1	1.000	-1.011 (-156.607)
Relation 2	-0.988 (-157.049)	1.000

Note: t-statistics in parentheses.

Source: Author's calculation.

To verify that LCA and LFDI are endogenously or exogenously determined, we need to apply an appropriate test in a VAR environment. We can now test the following hypothesis: H_0: LFDI does not cause LCA (the hypothesis states that previous movement of LFDI does not affect LCA); H_1: LFDI causes LCA. The test results are given in Table 5.

Table 5: VAR Granger Causality/Block Exogenity Wald Tests

Dependent variable	Chi-sq statistics	Df	Prob.
LCA	18.2816	2	0.0001
LFDI	27.6912	2	0.0000

Source: Author's calculation.

Based on the obtained Chi-square statistics (significant at the level of 1%), the null hypothesis that LFDI does not cause LCA is rejected, and the alternative hypothesis that claims that LFDI causes LCA is accepted. For LFDI as a

dependent variable, the null hypothesis that LCA does not cause LFDI is also rejected (the estimated test statistic is statistically significant). Therefore, the results of the Granger causality test indicate that the variables LCA and LFDI are both endogenous. It shows that a two-way causal relationship between LCA and LFDI exists. Now that the cointegration relationship between variables has been found, in the next step, we will examine the short-run dynamics of their adjustment using the VEC model. Since the variables are cointegrated in the long run and endogenously determined, the VEC model is estimated by taking the variables LCA and LFDI as dependent variables. The lag interval specification in the VEC model refers to lags of the first difference terms, so the VEC model in this paper is a restrictive two-lagged VAR model. Table 6 gives the results of the estimated VEC (1) model.

Table 6: Vector Error Correction Estimates

Variables	**Δ (LCA)**	**Δ (LFDI)**
	Estimate	
Error Correction	-0.265 (-2.875)*	-0.416 (-4.329)*
ΔLCA_{t-1}	-0.080 (-0.791)**	-0.551 (-5.259)*
$\Delta LFDI_{t-1}$	0.330 (2.892)*	0.162 (1.372)**
Summary statistics of estimated equations		
R-squared	0.234135	0.276831
Adj. R-squared	0.217486	0.261110
Sum sq. resids	36.85490	39.38977
S.E. equation	0.632927	0.654331
F-statistic	14.06284	17.60893
Log likelihood	-89.82196	-92.98155
AIC	1.954147	2.020664
SC	2.034795	2.101313
Mean dependent	0.066938	0.043979
S.D. dependent	0.715497	0.761216

Note: t-statistics in (). * Indicates a significance level of 1%. ** Indicates no statistical significance.

Source: Author's calculation.

Table 6 shows that the estimated speed of the adjustment coefficient (error correction term) for the ΔLCA variable is statistically significant at the 1% level. It indicates that every year about 26% of the dynamics in the CA deficit are adjusted to the path of the long-run equilibrium relationship with net FDI inflows. The estimated adjustment coefficient has the expected negative sign, which allows the equilibrium error to pull the variables in the direction of their long-run equilibrium. The estimated coefficient of the first lag of the first difference in the ΔLCA time series is not statistically significant. This means that current changes in the ΔLCA variable cannot be explained by the first-order lag of this variable. Additionaly, the short-run variations of the ΔLCA variable are affected by a first-order lag of ΔLFDI (the estimated coefficients are statistically significant at 1%). The estimated adjustment coefficients show that previous changes in ΔLFDI affect changes in the ΔLCA, thus indicating the existence of Granger causality from FDI to CA.

The estimated speed of adjustment coefficient (error correction term) for the ΔLFDI variable is also statistically significant at the 1% level. It indicates that every year about 41% of the dynamics in the net FDI inflows are adjusted to the path of a long-run equilibrium relationship with CA. The estimated coefficient of the first lag of the first difference in the ΔLFDI time series is not statistically significant. However, the short-run variations of the ΔLFDI variable are affected by a first-order lag of ΔLCA (the estimated coefficients are statistically significant at 1%). The obtained value adjustment coefficients show that previous changes in ΔLCA affect changes in the ΔLFDI, which actually means that there is Granger causality from CA to FDI.

The limitation of the results in Table 6 is the relatively small R-squared value. This means that there are other factors that affect the current account, but these are not included in this analysis. Despite this, the results obtained in Table 6 show that the net FDI inflow significantly affects the CA deficit in SEE countries. The increase in the primary income liability, due to profit repatriation, can increase this impact. This effect is certainly enhanced if foreign portfolio investments are involved, as well as intercompany loans. To ensure CA sustainability in SEE countries, it is important to attract export-oriented FDI. It is equally essential for all SEE countries to keep the trade deficit under control.

To check the validity of the main results, we performed a diagnostic test. The results are presented in Table 7.

Table 7: VEC Model Residual Tests

	Lag	Df	Test Statistic	P-value
Serial Correlation LM Test	1	4	10.5116*	0.0326
	2	4	22.9334*	0.0001
Residual Normality Test (Doornik-Hansen)		4	36.4474**	0.0000
White Heteroskedasticity Test (Includes Cross Terms)	1	27	119.305***	0.0000

Note: * LM-Stat.; **Jarque-Bera; *** Chi-sq.

Source: Author's calculation.

The null hypothesis of no autocorrelation of the residuals at lag one and two is rejected. However, the null hypothesis is not rejected at lag three. The VEC model assumes that the residuals are normally distributed. To check this, we used the VEC Residual Dornik-Hansen test, which indicates a deviation from the normal distribution. Furthermore, the White (1980) heteroskedasticity test shows that there is a residual heteroskedasticity. Including more variables in the model would improve the quality of the diagnostic findings of the assessed model. Nevertheless, the results of the estimated model are indicative and suggest that policymakers in SEE countries should monitor the impact of FDI on the primary income account and the CA account in the macroeconomic context. They should consider policies that stimulate foreign investors to export from SEE countries and to reinvest a certain proportion of their income in those countries. In addition, the increase in repatriation income from FDI may generate strong pressure on the foreign exchange market in SEE countries. Therefore, SEE countries need to have a sufficient amount of foreign exchange reserves to assure foreign investors that they can move their capital out of the country if they so decide.

5. CONCLUSION AND POLICY RECOMMENDATION

We find that FDI net inflow has a negative effect on primary income accounts and the CA in SEE countries. However, FDI inflows in many countries are an

important source of financing for CA deficits. The existing literature indicates that FDI inflows, through an increase in aggregate demand, may contribute to an increase in the CA deficit. This happens when the growth of aggregate demand leads to an increase in imports of goods and services. It is also possible that FDI inflows affect the increase in host country exports, so the net effect on the trade balance may be positive. However, the increase in FDI stocks implies an increase in dividend repatriation in the long run, increasing the CA deficit. If this impact is stronger than the possible positive effect on the trade balance, FDI inflows will lead to an increase in the CA deficit. Therefore, policymakers need to know the direction of conditionality between FDI and CA. The previous studies on the CA of SEE countries focus on the relationship between the financial account balance and the CA balance, whereas this paper pays attention to the relationship between FDI and the CA, which adds to the literature. Also, we provide new insights into the primary income account of SEE in the context of FDI inflows.

The results of the study in this paper show that an increase in net FDI inflows of 1% leads to an increase in the CA deficit of SEE of 1.011%. This finding confirms the results of research by Seabra and Flach (2005), Mukherjee et al. (2014), and Kaur et al. (2012). The Granger causality in our study was tested using the panel VEC model, and the test result indicates a two-way Granger causality between FDI net inflow to the CA balance. For SEE policymakers, the more important finding is that FDI net inflow affects the CA deficit. The transition of SEE countries towards an open market economy has enabled a significant inflow of FDI, which is linked to the privatisation process. The funds obtained from the sale of domestic companies to foreign residents were partly spent on the import of capital equipment, raw materials, and consumer goods. This consumption has directly affected the trade balance in SEE, which has contributed to the deterioration in their CA balance.

The inflow of greenfield investments has also contributed to the increase in the stock of FDI in SEE countries, which has negatively affected the primary income balance due to dividend repatriation. However, reinvested earnings make up a large share of the foreign investment income in SEE, thus reducing CA tensions

in these countries.[10] In this way, foreign companies expand production volume without additional external borrowing. This reduces the pressure on the primary income account and the CA in host countries. In cases where the FDI net inflow is directed to export-oriented manufacturing, host countries can realise an increase in exports. This has a favourable effect on the trade balance, resulting in a beneficial effect of FDI on the CA of a host country through these channels. In a situation where the SEE countries have a CA deficit, it seems that FDI plays an important role in CA sustainability. However, the other side of FDI in the host economy is reflected in potential dividend repatriation, which impacts negatively on the primary income account and the CA balance. Depending on the balance of these opposite FDI effects, each country will face either a negative or a positive FDI contribution to the CA balance.

The other forms of international capital in the SEE also affect the primary income account balance, and thus the current account balance. However, unlike portfolio investments and short-term and medium-term debts, FDI is more stable during a crisis and global economic turmoil. FDI may not be withdrawn from the host country as quickly as the other two types of international capital mentioned above. Therefore, FDI has a stabilising effect during the crisis.

Our findings have some policy implications. Namely, policymakers in SEE host countries should make more efforts to channel new FDI into export sectors, as it would have a positive effect on the CA balance. Also, it is necessary to continuously improve the investment environment and facilitate business in the country to encourage foreign investors to reinvest more of their dividends. Our results indicate not only the consequences of FDI net inflow on payments in the primary income account (liability) but also draw attention to the risks that may arise in the host SEE countries in the case of a crisis and sudden reversals of capital flows.

The limitation of this study is that it examines the impact of FDI net inflows on the primary income account and the CA without more detailed consideration of

[10] According to the BPM6 balance of payments methodology, reinvested earnings are entered twice and with opposite signs. Once in the primary income account (outflow) and the second time in the financial account (inflow). In this way, reinvestment has a neutral effect on the overall balance of payments.

other components of the financial account that also impact on the primary income account and the CA. Therefore, future research should examine the impact of individual components of the financial account on the primary income account and the CA balance. Comparing the individual impacts of various types of capital inflows for each country would provide a clearer picture of the proportional contribution of FDI to the CA imbalance. A more detailed analysis could reveal to what extent and in what direction FDI net inflow affects the country's trade balance, and thus the CA balance. Another line of research could be, for example, an analysis of the impact of FDI on exports by sectors, which could suggest measures to attract more FDI in competitive export-oriented industries in SEE countries. It is also important to examine how the structure of FDI affects the outflow of funds in the primary income account, as well as the issue of sectoral profitability of FDI. On the other hand, it would be interesting to analyse the role of FDI for domestic companies in SEE and the effects of these connections on the exports of domestic companies. It could contribute to a more complete understanding of the impacts of FDI on the CA and the primary income account of SEE countries.

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