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Current Account Solvency and the Feldstein – Horioka Puzzle

1. Introduction

The large literature triggered by the original Feldstein – Horioka (Feldstein and Horioka, (1980)) paper entitled "*Domestic saving and international capital flows* centred on the measurement of international capital mobility, the possible re-interpretation of the findings, constraints and deficiencies observed in this respect. From the more than 20-year perspective two main strains of the FH[1] dilemma become apparent, i.e. the macroeconomic and econometric. The former arises from the interpretation first proposed by the Authors, then continued by followers, which sees the significant positive correlation between savings and investment as confirmation of low capital mobility between economies. The econometric aspect is connected with a broad range of approaches and techniques used to verify the FH dilemma and yielding contradictory results. Based on a line of reasoning derived from the dynamic current account model (see Sachs (1981), Sinn (1992), Obstfeldt and Rogoff (2000)) it was inferred that over a long period savings and investments are correlated through the condition of the balance of payments liquidity, also called the intertemporal external equilibrium condition. The condition is both logical, and intuitively comprehensible: no country can incur debt infinitely.

This study attempts to reassess evaluation of the FH dilemma based on the reasoning derived from current account dynamic model for the European countries, Central and Eastern European Countries included. If the so-called 'external budget constraints' are held binding, the CA data generating process should be stationary (I(0)) and the investment and saving ratios will be subject

[1] Hereafter FH.

to 'forced' cointegration with the cointegrating vector of [1,-1]. In the event cointegration of investments and savings is questionable, or the elements of the cointegrating vector substantially deviate from [1,-1], it is recommended to examine two supplementary linear regressions: (i) CA to the saving rate, and (ii) CA to the investment rate. For (i) the estimate of the parameter should be positive, as increase in the domestic savings should be positively correlated to the share of the current account in the GDP, i.e. diminish it if negative, or increase it if positive. In case of regression (ii) one anticipates the estimate of the parameter will be negative for the investment ratio, as an increased share of investments in the GDP entails increased imports, hence deterioration of the current account balance. The data set covers 15 + 8 newly incorporated Central and East European Economies over the period of 1991-2001.

The paper is organised as follows. Section two provides a theoretical background and section three presents an empirical results. Finally, conclusions are summarised in the last section.

2. Evaluation of International Capital Mobility via Feldstein–Horioka Approach

In the paper which triggered substantial subsequent research on the topic, Feldstein and Horioka (1980) put forward the hypothesis that national saving and domestic investment are not correlated in the case when international capital is infinite mobile. The saving accumulated in the country respond to the world changes in investment opportunities (global real interest rate), and investment are financed from the global capital pool. Conversely, if international capital mobility is low, then additional savings tend to be invested in the country of origin.

To verify the hypothesis the authors suggested employing the following cross-section regression of investment and saving rates:

$$i_i = \alpha + \beta s_i + u_i \tag{1}$$

where lower case letters represent the share of investments (I_i) and savings (S_i) in the GDP of country *i*. FH consider saving and investment in both their gross and net values. Their sample was composed of 16 OECD countries in the years 1960-1974, and the variables - investment and savings rate, were averaged over time so as to neutralise the effects of the business cycle. Model (1) for the whole period and three sub-periods five years each was estimated by the ordinary least squares and instrumental variable methods. The parameter of interest β, the so-called s*aving-retention coefficient* reflects the portion of additional national saving invested domestically. Feldstein and Horioka interpret high estimates of parameter β as indicative of non-existence of

international capital mobility. Consistent with the interpretation of the regression coefficient $\beta = 1$ indicates that all accumulated savings are appropriated to financing domestic investments. Their estimate of the s*aving-retention coefficient* was $b = 0.89$ for the entire sample period of 1960-1974 and 16 countries of the OECD group[2]. They also found comparable results for five-year sub-periods, though the estimates tend to go down slightly over consecutive 5-year samples.

The Feldstein-Horioka article evoked vivid reaction from both theoreticians of economy, and researchers dealing with empirical evaluation of economic hypotheses. A series of subsequent empirical studies carried out between 1980 and 1991, all originating from the same line of thought (cross-section regression) support the conclusions drawn by Feldstein-Horioka. That period of interest in the FH dilemma is exhaustively described by Tesar (1983)[3]. The '80s also marked attempts to reassess the FH hypothesis based on the time-series regression analysis. Studies by Obstfeldt and Rogoff (1986, 2000) can be pointed to as representative for the trend and at the same time presenting a critical overview of the empirical results.

Considering the broad spectrum of economic constructions that "rely on the correctness of the infinite capital mobility hypothesis, no wonder its serious criticism on theoretical level additionally supported with empirical findings was almost instantaneous, as it was first voiced as early as in the '80s. (see Coakley, Kulasi and Smith (1996)). Based on a line of reasoning derived from the dynamic current account model (see Sachs (1981), Sinn (1992), Obstfeldt and Rogoff (1995)) it was inferred that over a long period savings and investments are correlated through the condition of the balance of payments liquidity, also called the intertemporal external equilibrium condition. The transfer of the debate on the FH findings adequacy onto the dynamic current account model caused modification of the commonly formulated view: in the world subject to the rule of infinite capital mobility every country can afford a deficit in its balance of payments whenever its consumer and investment needs cannot be financed from the domestic savings (see Sachs (1981), Sinn (1992), Ghosh (1995)) as long as it recognises that the process cannot continue infinitely. There must come a period when the current account is balanced and the debt repaid. Consequently, in the long run investments are equal to savings plus constant, and cross-section regression employing averaged data reveals the existence of averaged interrelation which, however, does not indicate the extent of international capital mobility.

In the '80s., based on other economic theories a number of economic factors were identified (see Obstfeldt (1986)), all of which affect the savings and

[2] The determination coefficients of the regression containing gross variable range from 0.83 to 0.91;for net value from 0.75 to 0.91.

[3] Also see Frankel (1992), Krol (1996), Ho (2002).

investments causing their seeming long-term correlation. These included e.g.: the growth rate, demographic structure, relative prices, taxes, impact and size of the government sector, or supply shocks. The theory-rooted criticism drew the researchers' attention to the potential specification error which may cause positive correlation between savings and investments in the FH cross-section regression. Towards the late '80s a commonly shared conviction evolved that the FH cross-section regression cannot be considered the foundation for concluding about international capital mobility, hence search for new measures began, primarily at the econometric level.

With the conclusive capacity of cross-section regression for international capital mobility questioned, researchers' attention naturally shifted towards applying the time-series based regression model. The earliest studies employing classic estimating techniques supported the conclusions formulated by Feldstein-Horioka (see Obstfeldt and Rogoff (1995)). Moreover, the issue of savings endogeneity noted by Feldstein-Horioka themselves enhanced the depth of macroeconomic knowledge triggering discussion on the macroeconomic factors which simultaneously affect both values and drawing attention to non-homogeneity of economies, even those of the OECD group. The discussion further contributed to reaching consensus about inappropriate interpretation of the FH cross-section regression results which did not account for heterogeneity of the examined country group.

Together with the spreading awareness of the conducted integration and cointegration studies in the late '80s a tool seemed to have been devised to enable empirical evaluation of the conclusions drawn from the dynamic model of the current account. When accepting the condition of the current account liquidity one must acknowledge that the data generating process is integrated I(0), hence nonstationary savings and investments must be conintegrated with the cointegrating vector of [1, –1] (see Coakley, Kulasi and Smith (1996)). The published findings of the FH dilemma studies initiated in the '90s, employing unit root tests and the Engle – Granger procedure support non-stationarity of savings and investments, as well as of the savings and investment rates. On the other hand, studies of cointegration did not yield any unequivocal conclusions. Instead, their results are highly diverse depending on the country group, period, and the applied techniques (see Ho (2002)).

With continuing inconclusiveness of the obtained results macroeconomic debates started to emphasise ever more often the weight of other economic factors, which when combined with the external budget constraints cause the emergence of the relationship linking average long-term investment and saving rates. Consequently, in line with the development of model-building technologies making use of data panels researchers shifted their interest to them. The first study which published the findings of empirical evaluation of the FH dilemma based on panel model was Krol (1996). Using a fixed-effect panel model (FE) for non-averaged annual data Krol found the statistically significant *savings-retention coefficient* of $b = 0.20$ – for a group of 21 OECD

countries in the period 1962–1990. The result was thus much lower than any published theretofore. The conducted tests indicated significance of individual effects, however not time effects.

Very much like in the case of time-series based regression models the subsequent step involved evaluation of nonstationarity of investment and saving, and application of panel cointegration tests (see Ho (2002)). Unfortunately, this line of study did not yield any meaningful results primarily because of the specific construction of the hypotheses in the panel cointegration tests. The representative publication for this line of study included in the references is Ho (2002). The most recent works falling in the panel model line of thought are studies by Coakley, Fuertes and Spagnolo (2001), which employ the nonstationary, heterogenic panels and Amirkhalkhali (2003) – the random coefficient model. While the former supports international capital mobility, the other concludes that the capital mobility is relatively low, even though slightly on the rise towards the late '90s. The appearance of these studies proves that the Feldstein-Horioka dilemma continues to stir interest among researchers and provides an exquisite ground for testing new econometric methods.

The evaluation of FH puzzle was performed with the use of univariate and multivariate unit roots and panel cointegration tests. In the multivariate setting, three statistics proposed by Im, Pesaran and Shin (2003; hereafter IPS), Levin, Lin and Chu (2002; hereafter LLC) and Hadri (2000, hereafter H) are employed. The first two tests assume that all series are non-stationary under the null hypothesis, whereas the third one assumes stationarity under the null. Im-Pesaran-Shin (IPS) unit root test allows for residual serial correlation and heterogeneity of the dynamics and error variances across groups. IPS is based on the average of the (augmented) individual Dickey-Fuller statistics computed for each unit in the panel. It is worth stressing, that the two tests, i.e. LLC and IPS have the same null hypothesis, but the alternatives are different. In the LLC test, the alternative assumes that all individual series are stationary with identical first-order autoregressive coefficient, while the individual first-order autoregressive coefficients in IPS are allowed to vary under the alternative. The formulation of the alternative hypothesis in the IPS test is more general than the homogeneous alternative hypothesis of LLC. It allows for some (but not all) of the individual series to have unit roots under the alternative hypothesis[4]. Due to the heterogeneous nature of the alternative hypothesis, as the Im, Pesaran and Shin stressed in his paper, rejection of the null hypothesis does not necessarily imply that the unit root is rejected for all $\boldsymbol{i}$, but only that the null hypothesis is rejected for the $m < N$, units in the analysed group. Hadri test has a null of stationarity. The series may be stationary around a deterministic level, specific to the unit (FE panel model) or around a unit-specific deterministic trend. The error process may be assumed to be homoscedastic across the panel, or heteroscedastic across units. This residual-based test is based on the squared

[4] See Im, Pesaran, Shin (2003), p. 55.

partial sum process of residuals from a demeaning (detrending) model of level (trend) stationarity.

In order to investigate potential long-term relation between investments, savings, and current account balance, we applied the panel cointegration tests[5] proposed by Kao (1999), Pedroni (1995), and McCoskey & Kao (1998). Kao (1999) proposes DF and ADF types of cointegration tests for the panel data, i.e. DF_r^*, DF_t^* and ADF, which are for cointegration with endogenous regressors, while DF_r and DF_t are based on the assumption of strictly exogenous regressors. Pedroni provides two test statistics $TN1_r$ and $TN2_r$, building up on the assumptions that regressors are strictly exogenous. The asymptotic distribution of Kao and Pedroni statistics converge to a standard normal distribution.The null hypothesis for the Kao (1999) and Pedroni (1995) tests is that the variables are not cointegrated. The detailed description of the mentioned statistics can be found in Kao and Chiang (1998), Kao (1999) and Pedroni (1995) and therefore are not reported here. While the Kao and Pedroni tests assume no cointegration in the null hypothesis, the McCoskey & Kao test assumes occurrence of cointegration in H_0 and no cointegration at H_A. Saying that, we need to bear in mind that following the Authors' recommendations, one must retain much caution with respect to the MCK test outcomes for panels containing less than 50 observations in time (T<50).

The approach adopted in the panel cointegration tests is analogous to the Engel-Granger procedure, hence requires estimation of the investigated relation, then testing of the residual stationarity. To estimate the FH regression and the relation between: CA and investment ratio, and CA and saving ratio, we used the OLS and two versions of the Dynamic OLS methods: with the homogeneous (DOLS) and heterogeneous variance-covariance matrix (DOLS-H), proposed by Pedroni (2001), and Fully-Modified OLS with the heterogeneous long-run variance-covariance matrix (FM-H). Kao and Chiang (1998) derive limiting distributions for the ordinary least square (OLS), fully modified (FM) and dynamic ordinary least square (DOLS) estimators in a cointegrated regression and show that they are asymptotically normal. As for the finite sample superiority of these estimators, Kao and Chiang (1998) find that: (i) the finite sample bias of the OLS is not-negligible, (ii) the FM does not improve over the OLS in general and (iii) the DOLS may be more promising then OLS or FM in estimating the cointegrated panel regression.

[5] An overview of the principles governing inference based on the panel cointegration tests can be found, alongside the a/m original works of the Authors, in Strzała (2005a).

3. Empirical Results

The database explored in the analysis comprises 15 'old' + 8 newly-admitted EU members over the period of 1960-2001[6]. For the current account aspect 22 countries are considered, i.e. excluding Luxembourg whose CA time series is exceptionally short. The data comes from the World Bank statistical database, *World Development Indicators*, 2003. Individual time series apply to the investment and saving rates viewed gross, and the share of the current account in GDP (%). The newly associated EU states the study comprises include: the Czech Republic, Estonia, Lithuania, Latvia, Poland, Slovakia, Slovenia, and Hungary[7].

The analysis of stage one focused on stationarity of individual time series with the application of the Leybourne test[8]. Applied were critical tables developed by Cook and Manning (2004), which recognize the optimization rule proposed by Ng and Perron (1995). None of the analysed series, except for two i.e. the saving rates for Luxembourg and the investment rates for Sweden, can be deemed stationary. No analyses of individual series of the CA balance of payments were conducted for the new member states because of the extremely short series. On the whole, one needs to note that the time series we have at our disposal are very short in the case of Central and East European countries, ranging from 11 observations for Slovenia to 22 for Lithuania. This forces very cautious interpretation of the stationarity analysis outcomes for new EU member states, particularly in view of the well-known shortfalls of the unit root tests. It was for this reason that at stage two we based our stationarity analysis on the panel unit root tests[9]. The conclusion-inference process was based on the findings of three panel tests, i.e. IPS, LLC and H[10]. Since the former two tests (IPS and LLC) are built on the assumption of no stationarity in the null hypothesis, and the third and latter one (H) adopts the stationarity assumption, the conclusion process needed to be put in an objective perspective. To do so, the following rule was adopted: the decision determining the nature of the data-generating processes can be made on simultaneous concurrence of the following

[6] The longest of the series spans the years 1960-2001.

[7] The fifteen 'old' EU countries are: Austria, Belgium, Denmark, Finland France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

[8] Leybourne (1995). For brevity, we do not quote the results of the Leybourne test; however, they are always available on request from the Author.

[9] I personally thank Ms Maria Blangiewicz, and Ms Dorota Ciołek, from the Chair of Econometrics, University of Gdańsk, for assistance in analysing the panel integration and co-integration, and valuable comments on the correct selection of the panel data estimation methods.

[10] The description of the panel stationarity and cointegration tests can be found e.g. in Strzała (2005a).

prerequisites: the LLC and/or IPS outcomes indicate H_0 should be rejected, while test H should give no grounds to do so. In this case the combined findings imply stationarity. On the contrary, when the null hypotheses cannot be rejected based on the IPS and/or LLC tests but qualifies to be rejected based on the H test, we can conclude that the series are nonstationary.

In order to assess the impact of the EU enlargement on the shape of the correlation between investments and savings, the stationarity analysis viewed from the panel perspective and the long-run relation (cointegration) between the investment and saving ratios were investigated for the panel composed of 15 'old' EU members states and the enlarged EU made up of 23 countries, all in the period of 1991-2001. As for the current account balance, the memberships were, respectively, 14 'old' EU member states, i.e. excluding Luxembourg, and 22 member countries of the enlarged European Union. The stationarity test results compiled in Table 1 relate to the enlarged EU (N=23 or N=22 for CA), and the isolated 'old' EU states (N=15 or N=14 for CA) for the levels and first differences of the original series.

The results of the H test for the variable levels, i.e. for the investments, savings, and the current account to GDP ratios, enable us to reject null hypothesis which assumes stationarity at each of the routinely accepted significance levels (1%; 5 %; 10 %). The results of the IPS and H tests in terms of the investment ratio are found consistent for the panel composed of both 23 and 15 countries. This leads us to conclude that the inclusion of the 8 new states into the European Union does not alter the nature of the nonstationarity throughout the whole panel – we find the panel unit-root, i.e. the entire panel should be deemed nonstationary.

The test results obtained and shown for the first differences confirm the integration degree I(1) of the investments for 23 countries, however are not unequivocal for the 'old' 15 EU states[11]. Correctness of the formulated conclusion finds confirmation in the analysis of the stationarity tests for individual series (subject to the above-stated restrictions). With respect to savings and the current account to GDP ratios, we can conclude that the data generating processes for both the '15' and the enlarged EU are nonstationary, since even though the test findings are mutually contradictory at levels (N=23 and N=22), based on the results for the first differences we can conclude that the investment and CA to GDP ratios are I(1) for the '23' countries. Taking into account the results of Krol (1996), the results of univariate stationarity testing and the fact that time series for Luxembourg with respect to CA is exceptionally short, in the next steps our sample exclude Luxembourg as envisaged by Coiteux and Olivier (2000).

[11] In this case the findings of the LLC and IPS tests allow for ruling out the hypothesis claiming that series is I(2) for I(1); simultaneously, test H does not allow for ruling out the hypothesis stating that $y_t \sim I(1)$ at the 1% significance level.

Table 1. Results of panel unit root tests

Test	Statistics	p-value	Statistics	p-value	Statistics	p-value	Statistics	p-value
Investments								
	Levels				First differences			
	N=23		N=15		N=23		N=15	
LLC	-0.282	0.020	-0.304	0.002	-0.983	**0.000**	-0.843	0.000
IPS	-1.469	**0.570**	-1.898	**0.064**	-2.275	**0.000**	-2.224	0.007
H-A	16.817	0.000	10.227	**0.000**	1.747	**0.040**	7.114	0.000
H-B	10.770	**0.000**	7.272	**0.000**	4.387	0.000	5.090	0.000
H-C	6.609	**0.000**	3.744	**0.000**	2.020	**0.022**	3.569	0.000
Savings								
	Levels				First differences			
	N=23		N=15		N=23		N=15	
LLC	-0.494	0.000	-0.171	0.001	-0.946	**0.000**	-1.026	**0.000**
IPS	-2.860	0.000	-1.446	**0.586**	-3.135	**0.000**	-2.205	**0.008**
H-A	14.311	0.000	18.962	**0.000**	3.392	0.000	-0.014	**0.506**
H-B	10.804	0.000	10.664	**0.000**	1.049	**0.147**	0.515	**0.303**
H-C	5.874	0.000	7.285	**0.000**	3.623	0.000	1.389	**0.083**
Current account								
	Levels				First differences			
	N=22		N=14		N=22		N=14	
LLC	-0.537	0.000	-0.281	0.000	-1.151	**0.000**	-1.112	**0.000**
IPS	-2.380	0.000	-1.580	**0.387**	-2.015	0.014	-2.348	**0.002**
H-A	9.811	0.000	15.191	**0.000**	0.412	0.340	1.435	**0.076**
H-B	8.247	0.000	9.174	0.000	1.199	**0.115**	1.899	0.029
H-C	4.673	0.000	5.694	**0.000**	2.127	0.017	2.445	0.007

Note: H-A – homoscedastic disturbances across the panel, H-B heteroscedastic disturbances across units; H-C autocorrelation of individual disturbances. Own calculations in the GAUSS program, procedure NPT 1.2, Kao and Chiang (2000)

Table 2 gives an overview of only those results of cointegration analysis which represent significant estimate of the parameter of interest. In case of both panels, i.e. for the enlarged EU and the 'old' EU[12], it is remarkable to find a very low value of the determination coefficient for the FH regression, which might be considered acceptable for the '15' panel models, as in this case

[12] Even though elimination of Luxembourg left the enlarged EU composed of 22 countries and the pre-accession EU made up of 14 countries, to discuss the findings we continue to use the acronyms: '23' and '15'.

adjusted R^2 is 0.27. In case of the 'enlarged' European Union, when DOLS estimator with a homogeneous long-run variance-covariance matrix is used, the savings retention coefficient estimate is positive, however it can only be deemed as statistically significant at the 0.09 significance level.

Table 2. Results of the cointegration tests

estimate	p-value	adjusted R^2	estimation method	CI
EU enlarged N=22				
FH regression				
-0.118	0.002	0.03	OLS	6/3
0.110	0.090	0.02	DOLS	6/3
-0.011	0.000	0.03	DOLS-H	6/3
CA=f(SAV)				
0.349	0.000	0.08	OLS	6/3
0.518	0.000	0.14	DOLS	5/4
CA=f(INV)				
-0.759	0.000	0.34	OLS	8/1
-0.740	0.000	0.69	DOLS	8/1
-0.478	0.000	0.29	FM-H	8/1
„15 except for Luxembourg N=14				
FH regression				
0.416	0.000	0.27	OLS	7/2
0.404	0.000	0.27	FM-H	7/2
CA=f(SAV)				
0.223	0.005	0.04	OLS	5/5
0.436	0.023	0.21	DOLS	5/5
CA=f(INV)				
-0.726	0.000	0.28	OLS	4/5
-0.701	0.000	0.21	DOLS	4/5
-0.495	0.000	0.25	FM-H	5/5

Note: Own calculations in the GAUSS program, procedure NPT 1.2, Kao & Chiang (2000). In column marked CI: expression 6/3 indicates that 6 out of the 9 applied tests point to cointegration of the analysed relation, 3 indicate no cointegration.

In the case when OLS and DOLS-H estimation is performed, the coefficient of determination is slightly better, the parameter of interest is statistically significant at 5 % significance level but the 'savings retention coefficient' estimate becomes negative, which could be viewed as contradicting the anticipated sign of the parameter. The estimates of the 'savings retention coefficient' for the '15 states' are statistically significant and oscillate around 0.4 irrespective of the employed estimation method and 0.11 for the enlarged

EU. These findings seem to support the formulated hypothesis that with the 8 countries of Central and Eastern Europe included in the panel the estimate of 'savings retention coefficient' goes substantially down. The lower estimate of saving retention coefficient for developing countries is sometimes in the literature treated as a second degree puzzle of the FH puzzle (see e.g. Rocha (2005)), however in this case a very thorough interpretation is offered by Blanchard and Giavazzi (2002).

Considering the outcomes of the cointegration tests one may be inclined to conclude that the investment and saving ratios are cointegrated. Their actual cointegration finds support in 6 out of 9 tests applied against 3 tests indicating no cointegration for the enlarged EU. The same proportion for the 'old 15' is 7 to 2. Saying that, it is worth noting that in each of the cases examined the MCK test always points to nonexistence of cointegration, though this may come as the outcome of too few observations in time. The estimates of the cointegrating vector seriously diverge from the [1.-1] values being [1.-0.11] for the enlarged EU, and [1.-0.4] for the 'old 15'. Now, bearing in mind that the current account is not stationary, it is hard to interpret the cointegration of the investment and saving rates as 'forced' by the condition of the current account liquidity.

On the other hand, the parameter estimates in the CA line regression on the saving ratio, are statistically significant. Moreover, they have the appropriate signs ranging from 0.3 – 0.5 for '23 states' and 0.2 – 0.4 for the 'old 15', even though the coefficient of determination is low for any models, panel ones included (0.04 to 0.21). The estimates of the CA regression parameter on the investment ratio are far more clear-cut. The estimates oscillate around -0.7, and the determination coefficient values range from (0.3 – 0.7) for the enlarged EU, and approximate 0.3 for 'the 15'. Regression *CA=f(INV)* for the broadened European Union may be recognised as a long-run relationship, since all tests except for the MCK point to cointegration between the share of the current account balance in the GDP and the investment to GDP ratio. As goes for the 'old' EU without the new member states the conclusions are not that unequivocal. Even if the MCK test is disregarded, the results obtained stay at 4/4, which means that 4 tests imply the existence of cointegration, while 4 disclaim it. Any conclusion-making effort focused on existence or non-existence of a long-run relationship between the GDP share of the current account balance on the one hand, and the saving to GDP ratio on the other hand is far more tricky. The estimated relationship is characterised by a) a lower coefficient of determination, b) more diverse estimates (depending on the applied estimation method), c) much less clarity in the outcomes of the panel cointegration tests. On the whole, while retaining the due caution needed in the light of scarce observations in time, one can conclude that the domestic savings and investments are mutually related in the long run, and this relationship is not „forced by the condition of the liquidity of the current account balance of payments considering that the CA data generating process must be recognised as nonstationary. Were we to take up the challenge of interpreting the obtained

results, we might venture to say that with the 'enlarged EU' included in the panel, the estimate of the 'saving retention coefficient' is substantially reduced going down from 0.4 to 0.1, which in turn indicates substantial flow of capital (savings) to the new member states of the European Union.

4. Conclusions

The performed stationarity study of the series representing the investment, saving and the current account to GDP ratios for the 'old' versus 'enlarged' European Union, based on the applied univariate and panel tests indicates the examined processes are nonstationary. The panel cointegration tests and the additionally CA regressions allow only for formulating a highly tentative conclusion that once the new member countries which absorbed substantial savings originating from the international capital pool back in the 90's were included in the panel, the 'saving retention coefficient' estimated for the '23' members went down compared to its value for the 'old 15'. The relation between investments and savings for the enlarged EU meets the prerequisites of being deemed a long-run relationship. On the other hand, the hypothesis claiming that the dependence was 'imposed' by the condition of the current account liquidity was disproved.

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