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Current Account Reversals and Growth: The Direct Effect Central and Eastern Europe 1923-2000

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Current Account Reversals and Growth: The Direct Effect Central and Eastern Europe 1993-2000*

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Abstract

According to economic theory, the capital inflows reversal – so-called sudden stop – has a significant negative effect on economic growth. This paper investigates the direct impact of current account reversals on growth in Central and Eastern European countries. Two steps to conduct the analysis are applied. In the first step we estimate the standard growth equation augmented by an effect of the current account reversal. We find that after a current account reversal the growth rate declines by 1.10 percentage points in the current year. The subsequent analysis of the adjustment dynamics builds upon the notion of convergence. We find the unconditional and conditional convergence coefficients to be -0.47 and -0.52, respectively. This implies that the consequences of the reversal are likely eliminated after 3.3 years when the actual growth rate is back at its equilibrium level, *ceteris paribus*. Finally, the cumulative loss associated with a sudden stop in capital flows is about 2.3 percentage points. We infer that Central and Eastern European countries are relatively flexible in terms of adjustment and reallocation of resources given the findings in similar literature examining either a more general sample or concentrating on rather different regions.

Keywords:
Current Account Reversals, Economic Growth, Emerging Market Economies, Adjustment Dynamics, Panel Data Analysis

JEL Classification:
F32, C23, O40, O52

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1. Introduction

The past two decades have been very rich in events with both positive and negative consequences for the world economy. This period experienced several extensive reforms. Some were structural – privatization and liberalization of domestic capital markets and capital transactions, with portfolio investment gaining in significance – while others macroeconomic and cyclical, including increased openness of developing economies. Growing importance of institutional investors and securitization were also visible in this period.

During this period a renewal of capital flows into developing economies occurred. These flows accelerated sharply in the mid-1990s, in a way triggering financial crises with devastating consequences, particularly in South-East Asia. These became some of the most important events of that period and attracted extraordinarily wide attention from economists and the mass media.

Currency crises – brought about chiefly by speculative attacks on officially controlled exchange rates – caught the attention of the world public and research that has been in motion to explain such events. These currency crises have often made policy makers abandon the peg of their currency which has resulted in large exchange rate depreciation and sharp reductions in current account imbalances, so-called reversals. Such reversals are then often related with a depressed economic performance of the affected country (see e.g Calvo (1998, 2000), Calvo and Reinhart (1999) and Moreno (1999)).

The sudden stop phenomenon involves a reversal in capital inflows associated with a currency and balance of payments crisis. Although currency crises and current account reversals are very closely related, in such a way that the latter event often follows the former, Milesi-Ferretti and Razin (1999) argue that these two have to be treated as different events. And as the theoretical literature dealing with potential effects of the two events on growth

implies, the effect of currency crises is rather ambiguous, whereas that of the reversal is purely negative.

There are several reasons why one would expect a sudden stop to cause a severe recession. Calvo (1998, 2000) analyses several mechanisms through which a sudden stop in international capital flows may cause a currency and balance of payments crisis and the reasons for which an output collapse may emerge.

The first mechanism may be called the traditional Keynesian effect whereby a fall in credit, attributable to the sudden stop in capital inflows combined with an external financing premium and a "financial accelerator", reduces aggregate demand and causes a fall in output.

The second mechanism, termed the "Fisherian" channel, emphasizes that a sudden stop enhances the severity of a currency crisis since it hits the financial sector and, given collateral constraints, induces a debt-deflation and a real contraction.

Furthermore, firm bankruptcies may cause negative externalities - banks may become more cautious and reduce loans. This in turn induces a further fall in credit - the "vanishing credit effect" (Calvo, 2000) - and contributes to recession. Credit that would automatically be rolled over is now conditioned upon passing more in-depth viability tests. The resulting "highway congestion" in credit markets add up to a negative supply shock.

The paper is organized as follows. Section 2 presents an overview of recent empirical work on the effects of external crises on growth and summarizes main approaches and findings. Section 3 contains the empirical analysis comprising the estimation of a static effect of a sudden stop in capital flows on growth and inspection of the subsequent adjustment dynamics. Section 4 concludes and discusses potential policy implications.

2. Overview of Recent Empirical Literature

Recent theoretical work accentuate the possible impact of financial crises on output growth. Such event (currency/balance of payments crisis, banking crisis or current account reversal) may have a contractionary effect on output. The effect then operates through such channels as a wealth effect on aggregate demand, higher production costs (imported inputs), disruption in credit markets and consequent credit crunch, or a sudden cessation in capital inflows limiting imported capital goods.

Barro (2001) analyses the effect of currency and banking crises on growth and investment in 9 East Asian countries using a five-year grouped panel from 1980 to 2000 for 67 countries. The Author uses three stage least square without country fixed effects as the estimation procedure and investment, initial GDP, male upper-level schooling, life expectancy, a total fertility rate, government consumption, a rule-of-law index, openness, inflation and a growth rate of terms of trade as control variables. He finds that a combined currency and banking crisis typically reduces economic growth over a five-year period by 2 % per year, compared with 3 % per year for the 1997-98 crisis in East Asia. Further, he explores dynamics using lagged dummies. The broader analysis found no evidence that financial crises had effects on growth that persisted beyond a five-year period. However, when analyzing the effect of banking and currency crises separately the estimates suggest that both may have small positive effect on growth. Additionally, estimates of the lagged banking crisis' dummy in investment equation suggest small negative effect on investment.

Edwards (2001) conducts an analysis of the circumstances surrounding major current account reversals. In particular, he investigates how frequent and how costly these reversals have been. The empirical analysis is based on a data set that covers over 120 countries over more than 25 years. He uses OLS with fixed effects and the Arellano-Bond procedure to estimate the effect of reversals on investment and feasible GLS to estimate the effect of

reversals on economic growth. Regarding the growth equation he uses investment, government consumption, international trade and the initial level of GDP as a set of control variables. In his estimates of the investment equation the coefficients of the contemporaneous and lagged reversal dummies are significantly negative, with point estimates –2.06 and –0.84 percentage points, respectively. Although both private and public sector investments are negatively affected, he finds that the impact is significantly higher on private investment. Concerning the estimates of the growth equation the results obtained support the hypothesis that current account reversals have had a negative effect on GDP per capita growth, even after controlling for investment.

Hutchison (2001) investigates the output effect of IMF-supported stabilization programs associated with a severe balance of payments and/or currency crises. His panel data set spans over the 1975-97 period and covers 67 developing and emerging-market economies. The Author applies the GEE methodology (General Evaluation Estimator) to use OLS with and without country specific effects to estimate the model. Even when controlling for macroeconomic developments (lagged GDP growth) and political (change in the budget surplus, credit growth and inflation) and external (external growth rate, real exchange rate overvaluation) factors he finds that currency crises significantly reduce output growth for 1-2 years. Namely, the decline in output reaches 1.2 % during the crisis year and 0.8 % in the following year. Further, he estimates an equation for credit growth as a policy reaction function and finds that the currency crisis reduces the credit growth by 15.6 % in the year following the crisis.

Hutchison and Neuberger (2001, 2002a and 2002b) analyze the impact of currency crises, currency and banking crises (twin crises) and current account reversals, currency crises and the so-called “sudden stops” on output growth. In all three papers they use a panel data set over the 1975-97 period covering 24 emerging market economies. They employ lagged real

GDP, a change in budget surplus, credit growth, external growth rates, real exchange rate overvaluation and openness as control variables when estimating the growth equation with the relevant impulse dummies. They employ Arellano and Bond, and Hausman and Taylor procedures for estimation and explore the dynamics of the events under consideration by leading and lagging the crises' dummies. In the first paper they find that currency crises reduce output by about 5-8 percent over a two-three year period. Typically, growth tends to return to trend by the third year following the crisis. In the second paper they conclude that twin crises do not adversely impact on output over and above the independent effects associated with a currency and banking crisis taken together. They find that currency (banking) crises are very damaging, reducing output by about 5-8 (8-10) percent over a two-to-four year period. The cumulative output loss of both types of crises occurring at the same time is therefore very large, around 13-18 percent. The investigation undertaken in the third paper implies that sudden-stop crises have a large negative, but short-lived, impact on output growth over and above that found with currency crises. A currency crisis typically reduces output by about 2-3 percent, while a sudden stop reduces output by an additional 6-8 percent in the year of the crisis. The cumulative output loss of a sudden stop is even larger, around 13-15 percent over a three-year period.

Milesi-Ferretti and Razin (1998) deal with a sample of 105 low and middle-income developing economies and analyze the current account reversals. They attempt to both explain the reversals and estimate the effects on output and exports resulting from sudden sharp reversals. In their "before-after" analysis they relate output growth after the reversal to its level before the reversal and to a set of explanatory variables. The latter are GDP per capita before the event, the current account deficit, interest payments, level of U.S. interest rates, the real exchange rate and the degree of openness. Estimating the cross-section sample by OLS they find that countries that had a less appreciated level of the exchange rate, higher

investment and more trade openness before the event are likely to grow faster after the event. Moreover, the median change in growth between the period after and before the event is around zero; however, they detect very heterogeneous output performance.

3. Empirical Analysis

The up-to-date results of research on effects of currency crises or reversals in a current account are associated with a use of a large data set comprising low and higher income countries and different regions. Thus, such estimations ignore plausibly significant regional specifics (i.e. social, historical and institutional characters of analyzed samples or sub-samples)[1]. Further, most papers that deal with the effect of current account reversals on growth are largely devoted to countries of East Asia and Latin America (see the references in the Overview of Recent Empirical Literature above).

In this section we explore the relation of reversals in current accounts and economic growth in Central and Eastern European countries. Even though the analyzed sample is somewhat narrow compared to similar work on East Asia or Latin America, it should be of higher homogeneity. We would like to support or to some extent modify general results that have been recently attained in related literature in the light of specifics of the selected sample.

The method applied to identify current account reversals here is similar to that of e.g. Edwards (2001). Edwards employs two measures of the current account reversal. The first measure the author applies is a positive change in the current account balance-to-GDP ratio of at least 3 % in the particular year. The other measure is less restrictive and identifies the reversal with a positive change in the current account-to-GDP ratio of at least 3 % in three

[1] Except for regional dummies that are only a very limited tool for such purpose.

consecutive years. We use only one threshold of a 2.5% positive reversal in the current-account-to-GDP ratio[2].

3.1 Estimated Regression Equation

To explore and analyze the effect of current account reversals and its dynamics on economic growth we first estimate the following equation using the panel data approach:

$$GROWTH_{it} = \beta_1 GDP_{it-1} + \beta_2 GOVCONS_{it} + \beta_3 INVEST_{it} + \beta_4 OPEN_{it} + \beta_5 REV_{it-j} + \xi_{it} \quad (1)$$

where the dependent variable is percentage growth of real GDP, GDP is the level of actual GDP (in percentage) approximating a control for the influences of the business cycle that is still present in the data due to their frequency. Technically, it represents the convergence term. *GOVCONS* is the ratio of government expenditure to GDP, and OPEN is the ratio that captures the degree of openness of the economy. This ratio is calculated as a sum of imports and exports per GDP. Finally, *REV* is an impulse-dummy variable that takes the value of one if the particular country has experienced a current account reversal, and zero otherwise. *i* stands for individuals (countries), *t* for the time period, *j* for the considered lag length and ξ is the residual term. We assume that the error term of equation (1) takes the following form:

$$\xi_{ti} = \varepsilon_{ti} + \mu_{ti} \quad (2)$$

where ε_{ti} is a country error term and μ_{ti} is a disturbance of standard characteristics. It may appear that the coefficient of the lagged dependent variable will be upward biased

[2] Initially, I used the 3% threshold, however, the significance of the 2.5% threshold seems to be higher. In other words, economic growth in Central and Eastern European countries is sensitive to the reversal in the CA-to-GDP ratio starting from 2.5%.

because of the country specific element in equation (1). Handling this problem, we employ the basic approach of a fixed-effect model combined with cross-section weights (estimation by feasible GLS). Although a bias resulting from possible correlation of *REV* variable with the error term may occur we do not explicitly handle this problem due to the limited size of the panel. Nevertheless, the possible bias is eliminated to some extent by the use of the feasible GLS method. Since the primary interest is in the analysis of Central and Eastern Europe, we also assume that the sample is not taken out of some larger homogenous sample and thus an use of the fixed effect approach does not introduce a bias compared to the estimation involving random effects. Finally, since the residuals of the individuals' regression equations can be correlated due to plausible interdependency in the analyzed region, the robustness of acquired results is checked by applying the SUR estimation technique as well.

Further, a common time trend may be present in the data so that one option would be elimination of such a trend. This can be done by some kind of transformation of the estimated data, getting rid of the problem with random versus fixed effect specifications along with. However, this would result in a loss of some information and in the case of an unbalanced panel even in the data series bias. Thus, we prefer to control for the possible presence of a joint trend by simply including the common time trend as an explanatory variable.

3.2 Data Description and the Estimation Results

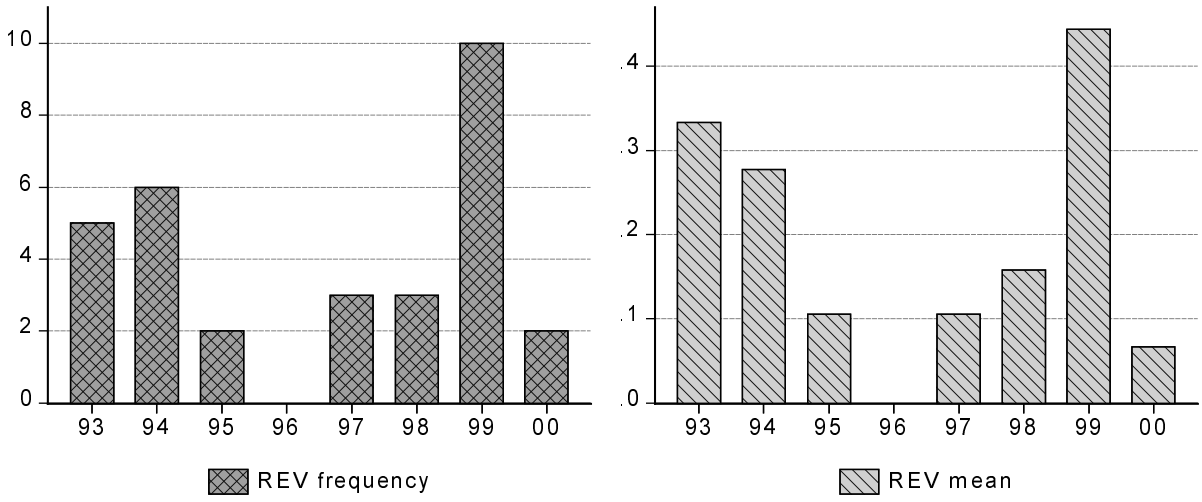
It is common practice to focus rather on the long-run relationships among considered variables when modeling economic growth, i.e. performing the analysis in terms of 3-5 year averages. Regarding the properties of the data pool we have no other choice than using yearly observations, though. Since only a limited sample of countries is at hand when dealing with the region under consideration and the available observations in many cases are for slightly

different periods, an unbalanced panel approach is applied to exploit the entire data pool for estimation.

Figure 1 describes episodes of reversals in current accounts during years 1993-2000 presenting emergence frequency of the event in each period for the whole group of Central and Eastern European countries and per country as well due to the unbalanced data pool applied. This would give us a picture of the most exposed periods in terms of reversals in current accounts[3].

Figure 1

Frequency and Mean of Current Account Reversals Occurrence



We can see in Figure 1 that the density concerning the occurrence of current account reversals is higher at the beginning of the analyzed sample and reaches its peak during the year 1999. The first period in question is most probably an outcome of substantial changes in economic environment of countries under consideration since most of them just initiated their transformation from central planing to market economies. Unlike this, the latter case was caused by weak economic fundaments of particular countries, unsustainable macroeconomic

[3] Table A1 in the Appendix provides the number of observations, the number of current account reversals and their ratios for all countries considered in the analysis.

policies and also possibly by a contagion effect resulting from relative homogeneity of the examined region.

Estimates of equation (1) using feasible GLS with fixed effects and seemingly unrelated regression are presented in Table 1 below:

Table 1

Estimations of Equation (1) using FGLS with fixed effects and SUR

Variable	FGLS fixed effects	SUR
GDP(-1)	-0.339 (0.027)***	-0.270 (0.006)***
INVEST	0.221 (0.063)***	0.115 (0.007)***
GOVCONS	-0.381 (0.123)***	-0.020125 (0.009)**
OPEN	-0.052 (0.019)***	0.006 (0.001)***
REV	-1.078 (0.347)***	-1.066 (0.056)***
T	1.481 (0.105)***	1.449 (0.021)***
Constant	NA	19.966 (0.540)***
R2 adj.	0.507	0.308
DW-stat.	1.764	0.898
White Test	0.2016 (0.9758)	0.5666 (0.7563)
No. of obs.	152	152

*,**,*** - indicate 10%, 5% and 1% level of significance respectively (standard errors are in parentheses). The presented White's test (F-test) on heteroscedasticity has been performed without the inclusion of cross-products. The probability of the F-statistic is in parentheses.

Both estimates presented in Table 1 show a reasonable fit and the respective null hypotheses of non-heteroscedastic residuals are not rejected. However, the SUR estimate is

affected by present autocorrelation of residuals as indicated by the DW-statistic[4]. We emphasize the results obtained by using FGLS with fixed effects since it shows better diagnostic properties and such approach is likely more sensible given the heterogeneity of very long-run determinants that we assume to be fixed over time according to the frequency of observations. These are e.g. population growth, education, dependency rate, initial GDP per capita etc.

The convergence term is significant and correctly signed with the estimated coefficient of -0.34. This would mean that countries with higher GDP level tend to grow relatively slower or we can simply perceive this variable as a control for the cyclical part given the yearly frequency of observations. Fixed capital accumulation is confirmed to be a well-established engine of economic growth with a significant positive coefficient of 0.22. The size of the government sector and its increasing consumption is according to our estimates associated with a significant negative impact on GDP growth with a coefficient of -0.38. This is likely a too strong impact and the control on robustness of such estimates confirms this suspicion. Even with findings of an important negative influence of government consumption on economic growth we cannot be very confident of its magnitude due to possible endogeneity of the government-consumption-to-GDP ratio with respect to growth.

The results further imply that there is statistically significant influence of the applied measure of openness on economic growth, though its economic significance is likely negligible. This is possibly due to large differences in the impact of openness (on growth) among countries considered. When allowing for heterogeneity of the openness coefficient across countries the results (not reported for brevity) essentially confirm this notion. Such heterogeneity emerges mainly due to a different degree of development in the considered

[4] I cannot deal with the problem of the serial correlation in a standard manner by including lags of the dependent variable due to the small sample available.

group of countries. It is well known from the literature on the dynamics of current account that emerging market countries' trade balance is following so-called U-shape during the catch-up with more developed countries. In the first stage, the country imports capital goods and technology and, in the later stage, starts to export due to increased competitiveness as a result of the technological progress and enhanced productivity. Additionally, the group of countries bears a significant common trend in GDP growth with a slope coefficient of 1.48.

Finally, the main variable of interest, which is the impulse dummy for reversals in a current account, appears to be significant and correctly signed. Exploring the dynamics of the event by leading or lagging the relevant dummy (in the range of +2 and –2) did not bring any significant results. Thus at this stage we conclude that according to the acquired estimates the effect of current account reversals on growth is temporary. Namely, a reversal in the current-account-to-GDP ratio exceeding the threshold of 2.5% is associated with a decrease in output growth of 1.1% on average, in the current year.

This result suggests that there is a relatively high degree of substitutability of foreign and domestic capital and that the economies need only a small amount of time to adjust to the sudden stop in capital inflow. We infer that Central and Eastern European countries are relatively flexible in terms of adjustment and reallocation of resources given the findings in similar literature examining either a more general sample or concentrating on rather different regions. Another point to note may be that foreign investors have more confidence in the analyzed region, and therefore, there is a relatively higher portion of foreign direct investment compared to portfolio investment. Since the former are less reversible we might expect a lower impact of capital inflow reversals on economic growth, *ceteris paribus*.

3.3 The Adjustment Dynamics

This subsection focuses on the dynamics of the direct impacts of the reversal on economic growth. Namely, we attempt to answer the following question: How fast or slow is the adjustment of the actual growth to its equilibrium. The answer coincides with an estimate of the time necessary to "get back on track" given that the economy experienced a sudden stop in capital flows.

In the recent literature the dynamics in response to current account reversals has been mostly analyzed using the leads and lags of the identification dummies. Significance of such leads or lags should have then pointed out whether the reversal had a long lasting or anticipation effect on growth, respectively. Such an approach is, however, likely associated with certain pitfalls. Regarding the implementation of the leads without leading other explanatory variables why would one believe that the dummies pick up just the information bit pertaining to the anticipation effect of the onset of the crisis and not an effect pertaining to the anticipation of higher borrowing costs (interest rates) or a decline in investment. Another issue may be the incorporation of lags for a similar purpose. Even though the economic intuition is clear in this case, the intended outcome may not be achievable due to the fact that the dummies may pick up other effects, regardless whether they are associated with the reversal or not. Given the pitfalls discussed we will follow an approach that we find more time consistent and explicit.

The following estimation is based on the strength of convergence of the analyzed series. We assume that there exists an equilibrium value of economic growth for each country. Occurrence of a negative shock such as a current account reversal makes the actual economic growth deviate from its equilibrium level. However, the economy still converges back to its equilibrium long-run growth driven by fundamentals. Therefore, an overall effect of such

negative shock can be calculated similarly as a dynamic multiplier. Applying the approach suggested we first estimate an equation of the following form:

$$\Delta growth_{i,t} = \delta_1 growth_{i,t-1} + \delta_2 rev_{i,t-j} + \delta_3 \Delta growth_{i,t-k} + \xi_{i,t} \qquad (3)$$

where Δ stands for the first difference and the variables are defined as before. The formal specification includes lagged differences of the dependent variable just to indicate a possible tool for eliminating autocorrelation in residuals. Further, the general specification of equation 3 contains a common constant since we may expect it to be a significant deterministic component due to the common trend in growth (see the estimation results above)[5]. The estimation results using the GLS method are presented in Table 2 bellow:

Table 2

Estimation of Equation (3) Using Panel Data

Variable	Unconditional Estimates	Conditional Estimates
Growth (-1)	-0.468 (0.050)***	-0.516 (0.049)***
DW-stat.	1.943	1.967
No. of obs.	143	137

*,**,*** - indicate 10%, 5% and 1% level of significance respectively (standard errors are in parentheses). Estimated by GLS.

The estimated convergence coefficients presented in Table 2 are fairly close and highly significant. The conditional convergence coefficient[6] is slightly higher suggesting that

[5] I have also considered fixed effects as an alternative to the specification with a common constant (and therefore to a common trend in growth when estimating equation (1)). Inclusion of the common constant seems to be valid regarding the respective coefficients of determination of the two alternatives.

[6] The term conditional referes to the estimate of the convergence coefficinet when additionaly the control variables from equation 1 (in differences) enter equation 3. Unconditional then refers to the estimates when those differences are not included.

under more complex structure the speed of adjustment is rather stronger. Table A1 in the Appendix reports the estimates of the augmented version of equation 3 from which we have obtained the conditional convergence term. Next, we calculate further attributes derived from the size of the initial shock and the strength of convergence of the growth series. Namely, we compute the time necessary for the full adjustment of actual growth back to its equilibrium after the reversal, and the overall cumulative loss. Both attributes computed under the two alternative scenarios, i.e. based upon unconditional and conditional convergence respectively, are presented in Table 3 below:

Table 3

Time Necessary for the Full Adjustment and Cumulative Loss of Performance

Event	Size of Shock	Length of Adjustment	Cumulative Loss
REV	-1.08	2.31	2.33 (1.25)
REV-C	-1.08	2.09	2.21 (1.13)

The size of the shock and the cumulative loss are in percentage points, the length of adjustment is calculated in years. The REV-C row is calculated using the conditional estimates of the convergence term from Table 2.

The intuition beyond Table 3 is as follows. The „Size of Shock“ column gives the magnitude of the deviation in period zero. The resulting time necessary for the full adjustment back to the long-run equilibrium is calculated in the next column. For instance, given that the loss of the output growth in period zero when the current account reversal occurred is 1.08 %, the economy needs additional 2.3 years for the full adjustment. Thus, the length of the period in which the economy suffers from depressed performance is 3.3 years. Finally, we calculate the cumulative loss provided in the last column as a sum of the initial size of the shock and the area of a triangle given by the size of the initial shock and the length of the full adjustment. It is therefore a sum of the loss of growth in period zero and the accumulated loss during the periods of adjustments (provided in parentheses). Given the size of the shock

(reversal) and the speed of the adjustment, the cumulative losses have been moderate in Central and Eastern Europe compared to Latin America, East Asia or emerging and developing countries in general (see the Overview of Recent Empirical Research above).

4. Conclusion and Policy Implications

According to theory, the capital inflows reversal – the so-called sudden stop – has a significant negative effect on growth. Such event is in empirical literature identified by a reversal in current account balance and affects the domestic economy mainly through the following channels: classic Keynesian (credit crunch and financial accelerator), Fisherian (debt deflation and real contraction) and associated negative externalities. This paper has investigated the impact of current account reversals on growth in Central and Eastern European countries. Two steps are applied to conduct the analysis. In the first step, estimation of the instant direct effect of the reversal on economic growth is performed. The growth equation estimated contains a set of control variables similar to Edwards (2001), and further a control for the effect of the business cycle. Concurrently, an impulse dummy to approximating the emergence of a current account reversal enters the equation. Using this approach we find that current account reversals are associated with an output loss of 1.10 percentage points in the current year. The dynamics associated with the reversal is explored in a standard manner but neither leads or lags of the dummy appeared to be significant.

In the second step we assume an existence of some equilibrium value of economic growth. The actual value of growth is then expected to converge to such equilibrium value after a shock. The strength of such convergence is then characterized by the estimates of the relevant unconditional and conditional convergence coefficients that are -0.47 and -0.52, respectively. This implies that the consequences of the reversal are likely eliminated after 3.3 years when the actual growth rate would be back at its equilibrium level. Finally, the

cumulative loss associated with the sudden stop in capital flows is about 2.3 percentage points.

If we assume that the main goals for policy makers are to ensure overall stability (including external one) and enhance prosperity in their country or region then we often find two opposite strands in a related debate in Central and Eastern European Countries. One strand argues for an early adoption of the euro mainly due to the threat of costly external crises (currency crises and/or sudden stops in capital flows). The other favors the later adoption and emphasizes possible costs pertaining to the loss of autonomous monetary policy.

Recent literature suggests that not only dollarization (euroization) but also floating exchange rate regimes do eliminate the threat of an external crisis. While in the former case the economy gives up its own currency in the latter case the authority in charge is assumed to eliminate excessive volatility in the exchange rate market and let the exchange rate fully reflect its fundamental value. The probability external crises would occur is certainly smaller under the full euroization (dollarization). This is primarily due to the fact that sudden stops in capital flows are effectively triggered or even represented by the stop or reversal in short-term capital ("hot money") flows (assuming direct investment is much less reversible). The short-term capital flows are then predominantly determined by interest rate differentials and expected exchange rate (assuming stabilized economy) that do not "exist" any more when the country is fully dollarized.

But what can we say about the other goal concerning prosperity? Nowadays, the determinants of long-run growth are rather in the competence of fiscal policy and monetary policy is assigned to create an appropriate environment for implementation of growth policies. Therefore, we should move towards the effect of possibly much less efficient stabilization policy on prosperity. If we define prosperity as the time spend in expansion we may draw from the recent literature examining the relation among the length of expansions, the

magnitude of long-run growth and the volatility of business cycles (see e.g. Haimowitz, 1998) to get further insights. Namely, by increasing the proportion between the magnitude of long-run growth and the size of the business cycle volatility we can increase the proportion between the time spent in expansions and recessions.

As it has been argued many times the dollarized country looses autonomous monetary policy and thus the ability to efficiently smooth fluctuations of the business cycle[7]. If the real convergence achieves a certain degree and the cycles of the regions (countries) within the prospective union are well harmonized then the fear of inadequate monetary policy would not be of such concern. But if it is not so it may turn out that prosperity of the country can be much more improved under sound and sustainable economic policy[8] within the managed float. Thus, when loosing the ability to precisely fit the monetary policy to the needs of the economy (country or region) and efficiently smooth the cycle we loose the ability to enhance prosperity in the economy.

Answering the question of whether to dollarize or not at the intended moment we should compare the gains resulting from enhanced external stability and the losses resulting from the fact that we sacrifice autonomous monetary policy. Regarding the enlargement of the European Monetary Union the accessing countries should achieve a high degree of alignment

[7] We may object that the country still have fiscal policy to do so but recent development showed the higher efficiency of monetary policy in this respect and it is why the latter authority is assigned to this role fairly exclusively.

[8] Sound and sustainable policy means formulating monetary, fiscal and exchange rate policies with an eye towards limiting current account deficits and managing their financing. The respective countries should make sure that tax policies and reserve requirements applied to financial institutions do not artificially encourage maturity mismatches. They should strengthen market discipline so that banks and companies are compelled to manage their exposures prudently, and they should upgrade the prudential supervision of banks and securities markets to compensate for the inadequacies of market discipline and the moral hazard created by the safety net.

with the Union before they enter the ERM II. It is in view of the fact that before they lock with the euro they will experience a period when external crises will be a threat once again.

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APPENDIX

Table A1

Country	No. of observations	No. of events	Events/observ. in %
1. Armenia	5	1	20.0
2. Belarus	5	1	20.0
3. Bulgaria	8	2	25.0
4. Croatia	7	0	0.0
5. Cyprus	7	2	28.6
6. Czech Republic	7	1	14.3
7. Estonia	7	3	42.9
8. Greece	6	0	0.0
9. Hungary	8	1	12.5
10. Ireland	6	1	16.7
11. Kyrgyz Republic	5	2	40.0
12. Latvia	8	2	25.0
13. Lithuania	7	1	14.3
14. Malta	8	2	25.0
15. Moldavia	5	1	20.0
16. Poland	8	1	12.5
17. Portugal	6	0	0.0
18. Romania	8	3	37.5
19. Slovak Republic	7	2	28.6
20. Slovenia	7	1	14.3
21. Spain	6	1	16.7
22. Turkey	8	2	25.0
23. Ukraine	5	1	20.0
Total	154	31	20.1

Number of observations refers to available observations for the current account to GDP ratio: "Number of events" stands for the number of reversals in the particular country's case.

Table A2

Estimation of Augmented Equation (3)

Variable	Coefficient Estimates
Constant	2.038
	(0.188)***
Growth (-1)	-0.516
	(0.049)***
ΔInvest	0.219
	(0.070)***
ΔGovcons	-0.239
	(0.088)***
R2 adj.	0.484
DW-stat.	1.967
No. of Observations	137

*,**,*** - indicate 10%, 5% and 1% level of significance respectively (standard errors are in parentheses). Estimated by OLS. The parsimonious version is presented.