MACROECONOMIC STABILITY AND ECONOMIC GROWTH IN CENTRAL AND EASTERN EUROPEAN COUNTRIES: EVOLUTION AND NEW CHALLENGES

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Abstract. The *objective* of this article is to analyse the processes of macroeconomic stabilisation in Central and Eastern European countries over the past thirty years (1991-2021), from the inception of market reforms to the present day. At the same time, the author aims to identify patterns and trends in the macroeconomic policies of these countries, which were formed under the influence of radical structural changes, economic cycles and the global financial crisis of 2008. *Methodology.* In order to analyse the data, the correlation between variables was measured. The volatility of macroeconomic indicators was gauged using the standard deviation. Based on panel regressions with fixed effects, models were created to demonstrate the influence of macroeconomic stability on economic growth in 15 countries across Central and Eastern Europe over a 30-year period (1991-2021). *Results.* The analysis using panel regressions with fixed effects shows a significant impact of macroeconomic stability indicators on economic growth after the 2008 global financial crisis, compared to a very small impact during the 2000-2008 boom. The growth of indicators of the real effective exchange rate and total official reserves have a positive impact on economic growth during the boom, while the impact of these indicators decreases significantly in the post-crisis period, and the impact of the lending rate, the current account balance and the unemployment rate increases. It should be noted that the dominant positive factor influencing economic growth in all periods is the budget balance and the weak influence of the exchange rate. *Practical implications.* The author identifies certain combinations of macroeconomic indicators to create a successful macroeconomic policy for sustainable economic growth in Central and Eastern Europe. *Value / Originality.* The paper assesses and analyses the relationship between macroeconomic stability and economic growth in Central and Eastern European countries during both recession and boom periods, as well as in the post-crisis downturn after 2008, in order to achieve stable welfare, confidence in the future for the whole society and the success of long-term investment projects.

Keywords: macroeconomic stability, economic growth, financial crisis, Central and Eastern Europe, panel models.

JEL Classification: E63, F43, C33

1. Introduction

In the closed and fully regulated socialist economies of Central and Eastern Europe, inflation and exchange rates remained relatively stable. However, there were growing imbalances in budget expenditures and revenues, a significant shortage of goods, and a lack of ability to maintain the desired level of stability. The liberalisation of prices and the opening of the economy to large imports of consumer goods resulted in uncontrolled hyperinflation and a significant devaluation of the exchange rate. Consequently, macroeconomic stabilisation constituted a pivotal component of market reforms throughout the 1990s.

It is important to note that there was a lack of experience and expertise in successful macroeconomic management in post-socialist countries, particularly in those that had been part of the Soviet Union.

More than thirty years of economic reforms in post-socialist countries have determined successful and unsuccessful trajectories of economic development and the achievement of macroeconomic stability based on internal and external balance.

Decentralisation of governance, economic autonomy of business entities, freedom of pricing – all this has created certain shock effects on successful macroeconomic policy to create confidence in investment and a stable income stream for both

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capital owners and employees. Has macroeconomic stabilisation really become one of the key reforms in CEE countries? It is important to assess whether macroeconomic stabilisation has really given a boost, an impetus to economic growth, whether a balanced economy is more successful than an unbalanced one.

The intention was to evaluate and analyse the interaction between indicators of macroeconomic stability and economic growth in the countries of Central and Eastern Europe. This was done in periods of recession and in periods of boom, as well as in the conditions of post-crisis recession after 2008. The process of evolution of the influence of macroeconomic policy on economic dynamics in the countries of Central and Eastern Europe has prompted a re-evaluation of the efficacy of certain instruments of influence, including currency regimes, control of capital movements, inflation targeting, tax rates and customs tariffs.

The occurrence of crises in the economy has prompted the development of effective mechanisms for addressing imbalances and maintaining macroeconomic stability. This has resulted in a notable surge in scientific inquiry, commencing with the work of J. M. Keynes and continuing with the contributions of M. Fleming (1962) and R. Mundell (1960, 1963) and others on the examination of balanced functioning in both closed and open economies, both in a static and dynamic manner. Macroeconomic stability can be defined as the achievement of internal and external equilibrium. An alternative perspective is that it can be regarded as a public good, facilitating the achievement of stable well-being, confidence in the future for the entire society, and the success of long-term investment projects.

J. Ocampo (2008) analyses the evolution of the tools and objectives of macroeconomic stabilisation from J. Keynes to the era of financial globalisation and concludes that the focus now shifted to fiscal balance and price stability, replacing the Keynesian emphasis on *real* activity, which led to the complete suppression of the counter-cyclical role of macroeconomic policy.

W. Buiter et al. (1997) identify the core of macroeconomic stability as a public good, the provision of which cannot be outsourced to the private sector. The production or provision of this good is an inescapable responsibility of national governments and international agencies and institutions.

J. Williamson (2008) summarised the main measures of the Washington Consensus that ensure the transition from stabilisation to economic growth. The most important of these is fiscal discipline, the absence of inflationary taxes with a significant budget deficit.

The initial measurements of macroeconomic stabilisation were conducted by Fisher et al. (1996)

using a fixed-effects model for 25 countries with transition economies for the period 1992-1994. Their findings indicated that the economic growth rates are higher in countries that have implemented macroeconomic stabilisation with the assistance of fixed exchange rates and comprehensive liberal reforms.

In a study conducted in 1997, the renowned American economist J. Sachs identified two key factors contributing to high inflation rates in transition countries: fiscal imbalance and low confidence in macroeconomic management.

In the context of high financial globalisation, the analysis of capital flows between countries is most effectively conducted within the framework of the Mundell-Fleming trilemma. As J. Aizenman et al. (2022) observe, the fundamental contribution of the Mundell-Fleming framework is the impossible trinity, or the trilemma, which states that a country may simultaneously choose any two, but not all, of the following three goals: monetary independence, exchange rate stability and financial integration.

The following section will examine the experience of stabilising a transitional economy with the assistance of an exchange rate. A. Markiewicz (2005) emphasised that, in order to combat inflation, several Central and Eastern European countries (CEECs) opted for an external anchor in the form of pegged exchange rates. Furthermore, he concluded that successful development of the financial sector favours floats in CEECs, while financial openness favours pegs.

S. Slavov (2017) identified in his research that gross international reserves exhibit greater volatility than their euro or dollar exchange rates in Central and Eastern European countries. Additionally, he found preliminary evidence suggesting that many of these CESEE countries may be displaying indications of constrained exchange rate flexibility.

P. De Grauwe and G. Schnabl (2004) identify two reasons why exchange rate stability is conducive to higher economic growth. The evidence suggests that countries in Central and Eastern Europe with relatively fixed exchange rate arrangements have experienced higher average growth.

In the context of financial globalisation, the Mundell-Fleming model is becoming increasingly pertinent. This model extends the open economy Keynesian macroeconomic policy framework to encompass capital flows and the monetary trilemma.

J. Aizenman et al. (2022) conducted a survey of 120 countries over the period 1992-2020, employing the trilemma index and data on international reserves as a share of GDP. Their findings indicate that countries' policy mixes have been diverse and varied over time. Among emerging market economies, the three dimensions of the trilemma configurations are converging towards a "middle ground", characterised by managed exchange rate

flexibility, underpinned by sizable holdings of international reserves, and intermediate levels of monetary independence and financial integration.

The findings of the new endogenous growth theory by P. Aghion and S. Durlauf (2009) emphasise the separation between short-run macroeconomic policy and long-run growth. They also highlight the complementarity between the growth effects of a more countercyclical budgetary policy and those of structural reforms, including product market or labour market liberalisation.

P. Aghion and P. Howitt (2006) argue that excessive macroeconomic fluctuations may prevent firms from carrying out an optimal level of R&D, especially if financial markets are underdeveloped and firms are therefore unable to bridge periods of low earnings with new loans.

2. Measurement of Macroeconomic Stability and Experience of Central and Eastern European Countries

The article reveals certain regularities and trends in macroeconomic policy in CEE countries, determines the level of volatility of macroeconomic indicators in the conditions of economic boom and recession, and assesses the impact of the volume of official reserves and indicators of the institutional environment on macroeconomic stability in different conditions of economic development.

The purpose of the study was to assess the strength of the influence of indicators of macroeconomic stability on economic growth in Central and Eastern European countries in the narrow and broad sense, with the addition of indicators of growth of investment, industrial production and exports before and after the global financial crisis.

For data analysis, the correlation of variables was used and the volatility of macroeconomic indicators was measured by standard deviation.

For the analysis, the group of Central and Eastern European countries that have joined the European Union was selected: Bulgaria, Romania, Poland, Hungary, Czech Republic, Slovakia, Slovenia, Estonia, Lithuania, Latvia, as well as post-Soviet European countries: Ukraine, Belarus, Russia, Moldova and Albania, and conducted a study of economic growth in the period from 1991 to 2021, covering 465 observations.

Data on GDP per capita growth, inflation, current account, lending interest rate, budget balance, unemployment, gross fixed capital formation growth, industrial production value added growth, and exports of goods and services growth based on the World Bank dataset (2024), Real effective exchange rate (REER) data based on Darvas (2021), loan interest rate data for Slovakia, Slovenia, Estonia, Latvia, Lithuania from the ECB (2023), Poland from the NBP (2023), total reserves and foreign direct investment data from the IMF (2023).

In order to form an overall picture of macroeconomic stability in Central and Eastern Europe, the author analysed average economic growth, inflation, budget balance, real effective exchange rate, lending rate, total reserves, unemployment rate and foreign direct investment. Two periods were chosen: the first one is from the beginning of macroeconomic stabilisation, when radical liberalisation reforms were completed and the economy started to grow until the financial crisis of 2008; the second period covers the post-crisis period of economic development in CEE countries.

Table 1 shows the following trends: a sharp decline in economic growth (by 2.5 times), inflation, and negative current account balances and interest rates in the post-crisis period.

As for the real effective exchange rate, fiscal deficit, unemployment, and total reserves, the changes are rather small. The CEE economies have become more balanced since the crisis. Both domestic and external balances have improved. On a positive note, the volume of foreign direct investment has more than doubled, which creates some potential for further successful economic growth.

The objective of macroeconomic stability is not merely the maintenance of such stability in itself,

Table 1

Macroeconomic performance of CEE countries before and after global financial crisis

Macroeconomic indicators, average	1996-2008	2009-2021
GDP growth per capita, (%)	5.45	2.10
Inflation, GDP deflator, (%)	19.99	5.34
Current account, (% of GDP)	-5.23	-1.57
FDI stock, (% of GDP)	28.98	48.40
Real effective exchange rate	90.17	100.63
Lending interest rate, (%)	17.94	7.77
Budget balance, (% of GDP)	-2.09	-2.69
Total reserves, (% of GDP)	18.83	20.53
Unemployment, (%)	9.57	7.59

Source: author's calculations on the basis of World Bank (2024), Darvas (2021)

but rather the advancement of the population's well-being and the economic growth of the state. Table 2 presents the results of the analysis of the influence of indicators of internal balance (inflation, unemployment, interest rate, budget deficit) and external balance (current account balance, real effective exchange rate, total reserves) on economic growth rates for the period 1991-2021 and sub-periods before and after the global financial crisis of 2008.

The prevailing macroeconomic factors are as follows: elevated inflation and elevated lending interest rates serve to diminish the rate of economic growth; conversely, the reduction of the budget deficit and the growth of the real effective exchange rate serve to enhance the rate of economic growth. The impact of unemployment and general reserves is statistically inconsequential. The relationship between macroeconomic indicators and economic growth was studied before and after the global financial crisis. The results showed a notable difference in the impact of inflation and a shift in its direction of influence. While the influence of inflation became positive, albeit insignificant, the influence of the real effective exchange rate on economic growth weakened. Prior to the crisis, the volume of official reserves exerted a considerable influence (0.189), whereas after the crisis, this impact was reduced to 0.041. The influence of the lending interest rate, the current account balance, and the budget deficit does not exhibit a notable discrepancy between the pre- and post-crisis periods. A negative correlation exists between the rate of economic growth and the level of unemployment. In conclusion, the initiation and successful conclusion of radical reforms necessitated a considerable reduction in inflation, the interest rate, the budget deficit, the strengthening of the national currency and the accumulation of substantial foreign exchange reserves. Additionally, a negative balance of the current account can be attributed to a notable inflow of foreign capital. In the aftermath of the crisis, the significance of the exchange rate, official reserves and inflation diminished, whereas the necessity to generate new employment opportunities and to invest in and foster innovative activities increased considerably.

The level of macroeconomic stability can be determined through the volatility of macroeconomic indicators, measured by the standard deviation over the analysed period. The volatility of inflation, GDP growth, interest rates, and the budget balance significantly reduced the average GDP growth rate. After the crisis, the negative impact of GDP growth and budget deficit volatility has been significantly reduced (Table 3).

Table 2
Macroeconomic indicators and economic growth in CEE

Macroeconomic indicators	Correlation coefficients of economic growth with macroeconomic indicators		
	1991-2021	1991-2008	2009-2021
Inflation, GDP deflator, (%)	-0.407*	-0.514*	0.057*
Unemployment, (%)	0.052	0.096	-0.146
Lending interest rate, (%)	-0.334*	-0.448*	-0.309*
Budget balance, (% of GDP)	0.378*	0.396*	0.365*
Current account, (% of GDP)	-0.161*	-0.129*	-0.190*
Real effective exchange rate	0.253*	0.380*	0.099*
Total reserves, (% of GDP)	0.066	0.189*	-0.043

* the correlation coefficient is significant at the 1% level.

Source: author's calculations

Table 3
Volatility of macroeconomic indicators and economic growth in CEE

Types of interactions between variables	Coefficients of correlation		
	1991-2021	1991-2008	2009-2021
s. d. GDP ↔ ΔGDP	-0.35	-0.41	-0.12
s. d. ER ↔ ΔGDP	-0.11	0.05	-0.16
s. d. Inflation ↔ ΔGDP	-0.55	-0.35	-0.19
s. d. CA ↔ ΔGDP	-0.05	-0.19	-0.18
s. d. REER ↔ ΔGDP	-0.11	-0.07	0.19
s. d. Lending interest rate ↔ ΔGDP	-0.28	-0.08	0.20
s. d. Budget balance ↔ ΔGDP	-0.28	-0.27	-0.08

Source: author's calculations

The findings of this study demonstrate a notable divergence in the influence of macroeconomic volatility during periods of economic expansion and recovery from crises.

The latest studies in the Mundell-Fleming trilemma field employ official foreign exchange reserves to guarantee exchange rate stability at a high level of financial openness. This approach has revealed intriguing regularity patterns regarding the impact of total official reserves on macroeconomic indicators in Central and Eastern European countries.

Prior to the global financial crisis, the total reserves of CEE central banks exerted a considerable i nfluence on the reduction of inflation, interest rates, and the real effective exchange rate, both in terms of averages and standard deviations. With regard to the current account balance, it is evident that official reserves served to offset the negative balance of the current account, both in terms of average indicators and their standard deviations. An expansion in official reserves serves to stimulate foreign direct investment. In the post-crisis period, the influence of official reserves is markedly reduced, and the sign of the correlation coefficients shifts from negative to positive (see Table 4). It can be concluded that the general reserves of central banks played a significant role in the context of the market transformation of CEE economies and their accession to the European Union. They served as a foundation for macroeconomic stability and the mitigation of excessive fluctuations in inflation, interest rates, and the real effective exchange rate.

Achieving macroeconomic stability requires institutions that promote satisfactory macroeconomic performance. The chronicle of macroeconomic development over the past three to four decades shows failed stabilisation attempts that started strongly but failed to take hold due to the lack of appropriate institutions to ensure continuity (Buiter et al., 1997). This is especially true for transition countries that have inherited "wrong" or "missing" institutions and thus need to build institutions adapted to a market economy.

The most comprehensive account of the elements of the institutional environment is provided by the World Bank (Kaufman, Kraay and Mastruzzi 2010), which serves as the foundation for the global governance indicators. The initial group of indicators encompasses political freedom and political stability; the second, the efficacy and caliber of government regulatory activity; and the third, the rule of law (which assesses the quality of human rights, property, and the quality of justice), law enforcement, and control of corruption, encompassing an evaluation of how state power is utilised for private gain. Governance scores range from about -2.5 (weak) to 2.5 (strong).

An analysis of the institutional framework for macroeconomic stability in Central and Eastern Europe shows that institutional factors have the greatest impact on reducing lending rates and inflation (Table 5).

The efficacy of the government's regulatory activities is most pronounced in their capacity to mitigate inflation, reduce the budget deficit and the interest rate on loans, enhance the real effective exchange rate and stimulate foreign direct investment.

3. Modelling the impact of macroeconomic stability on economic growth in CEE countries

Models of the influence of macroeconomic stability on economic growth have been constructed

Table 4
Total reserves and macroeconomic stability in CEE

Types of interactions between variables	Coefficients of correlation		
	1991-2021	1991-2008	2009-2021
Total reserves ↔ s. d. Δ GDP	-0.07	-0.10	-0.26
Total reserves ↔ s. d. ER	-0.17	0.07	0.21
Total reserves ↔ s. d. Inflation	-0.26	-0.59	-0.14
Total reserves ↔ s. d. CA	0.17	0.36	-0.20
Total reserves ↔ s. d. REER	0.02	-0.20	0.10
Total reserves ↔ s. d. Lending interest rate	-0.26	-0.23	0.09
Total reserves ↔ s. .d. Budget balance	0.12	-0.00	-0.17
Total reserves ↔ Δ GDP	-0.10	-0.03	0.15
Total reserves ↔ Inflation	-0.31	-0.66	-0.09
Total reserves ↔ CA	-0.14	-0.43	-0.13
Total reserves ↔ REER	-0.32	-0.60	0.17
Total reserves ↔ Lending interest rate	-0.24	-0.42	0.12
Total reserves ↔ Budget balance	-0.18	-0.19	0.10
Total reserves ↔ DI stock	0.42	0.64	0.26

Source: author's calculations

Table 5
Institutional environment and macroeconomic performance in CEE

Macroeconomic indicators	Correlation coefficients of institutional variables with macroeconomic indicators				
	Control over corruption	Government effectiveness	Rule of law	Political stability	Regulatory quality
Inflation, GDP deflator, (%)	-0.36*	-0.52*	-0.48*	-0.44*	-0.57*
Unemployment, %	0.08	0.25	0.17	0.13	0.30
Current account, (% of GDP)	0.37*	0.47*	0.36*	0.14*	0.30*
Lending interest rate, %	-0.69*	-0.75*	-0.72*	-0.71*	-0.70*
Real effective exchange rate	0.21*	0.31*	0.35*	0.30*	0.46*
Total reserves, (% of GDP)	-0.32*	-0.21	-0.19	-0.11	-0.06
Budget balance, (% of GDP)	-0.07	-0.12	-0.21	-0.16	-0.21
FDI stock, (% of GDP)	0.42*	0.43*	0.46*	0.36*	0.61*

* the correlation coefficient is significant at the 1% level.

Source: author's calculations

using panel regressions with fixed effects. An important advantage of panel data over time series or cross-sectional data is that it allows the identification of certain parameters or questions without having to make restrictive assumptions. Panel data make it possible to analyse changes at the individual level. This means that panel data are suitable not only for modelling or explaining why economic units behave differently, but also for modelling why a given unit behaves differently in different time periods (Verbeek, 2002).

Studies have shown that estimates based on panel data are in most cases more efficient than when the same amount of data is available, but the data are generated by selecting different units in each time period. Models with panel data are more robust to omitted variables, measurement errors, and the presence of endogenous variables among the regressors.

To analyse the impact of macroeconomic stabilisation on economic growth in Central and Eastern Europe, a number of indicators have been selected: dependent variable is $GDPCG_{ti}$ – growth in gross domestic product per capita, % in period t for country i; independent variables: $Reer_{ti}$ – real effective exchange rate, $Treserve_{ti}$ – total official reserves % to GDP, $Lendinginterestrate_{ti}$ – lending interest rate, %; $Currentaccountbalance_{ti}$ – current account balance, % to GDP; $Inflation_{ti}$ – deflator, %; $Budgetbalance_{ti}$ – budget balance, % to GDP; $Unemployment_{ti}$ – unemployment, % to labor force; all independent variables for period t and country i. To determine the trends in the impact of macroeconomic indicators on economic growth, several periods were selected for the study: the general period of 1991-2021; the period of radical market reforms, overcoming a significant level of internal and external imbalances and before the global financial crisis of 1991-2008; the period of boom and highest economic growth in 2000-2008; the last period covers the recession and downturn after the global financial crisis of 2009-2021 (Table 6).

The results of the panel regression with fixed effects are as follows. The strongest impact over the entire thirty-year period is the budget balance, its improvement, and the negative current account balance, which is associated with the significant financial openness of CEE countries to foreign capital.

The analysis revealed that indicators of inflation and the real effective exchange rate exert a negative and statistically significant influence on economic growth. Conversely, the lending interest rate, unemployment and total official reserves were found to be statistically insignificant in their influence.

The period of radical economic reforms and catching up with developed countries has certain differences from the general period: the role of official reserves is growing, unemployment and inflation are statistically reducing economic growth, although budget balance remains a dominant factor.

Interesting results were obtained during the period of the highest economic growth rates: the negative impact of rising loan interest rates and the real effective exchange rate increased. Unemployment, inflation, and the current account balance have little impact on economic growth.

In the post-crisis period, one can observe a general increase in the influence of macroeconomic stability indicators on the growth of gross domestic product per capita. The impact of the interest rate on loans has increased almost sixfold, and the impact of the current account deficit has also increased significantly. It is particularly important to note that rising unemployment and inflation have a statistically significant positive impact on economic growth.

In order to quantify the impact of macroeconomic stability in the current economic growth paradigm, indicators of investment, exports, and industrial production growth were added to the model. The dominant factors of economic growth in countries with the fastest GDP growth rates also theoretically correspond to the Keynesian economic model.

Table 6

Indicators of macroeconomic stability and economic growth in CEE countries

Independent variables	Dependent variable $GDPCG_{ti}$			
	For the period 1991-2021	For the period 1991-2008	For the period 2000-2008	For the period 2009-2021
$Reer_{ti}$	-0.024 (-1.88)	-0.023 (-1.29)	-0.054 (-2.34)	-0.038 (-0.96)
$Treserve_{ti}$	-0.023 (-0.93)	0.113 (2.59)	-0.025 (-0.61)	-0.020 (-0.60)
$Lendinginterestrate_{ti}$	-0.008 (-0.93)	-0.025 (-2.67)	-0.108 (-2.07)	-0.647 (-5.99)
$Currentaccountbalance_{ti}$	-0.156 (-3.43)	0.139 (2.03)	-0.025 (-0.37)	-0.432 (-4.18)
$Inflation_{ti}$	-0.009 (-4.25)	-0.012 (-6.23)	0.008 (0.34)	0.109 (3.03)
$Budgetbalance_{ti}$	0.612 (8.04)	0.261 (2.35)	0.505 (3.85)	0.696 (6.09)
$Unemployment_{ti}$	0.035 (0.47)	-0.202 (-1.95)	-0.005 (-0.06)	0.231 (2.10)
$Constant_{ti}$	7.417 (4.48)	9.443 (4.64)	14.090 (5.09)	10.164 (2.36)
Within R^2	0.25	0.42	0.23	0.45
Between R^2	0.14	0.08	0.12	0.10
Overall R^2	0.24	0.25	0.16	0.33
Statistical tests F-test	18.60	20.39	4.9	19.22
Number of observations	401	216	135	185

Source: author's calculations

Some new variables have been added to the model: $Exportgrowth_{ti}$ – growth rates of exports of goods and services, % in period t and for country i; $Grossfixedcapitalgrowth_{ti}$ – growth rate of gross fixed capital formation, % in period t and for country i; $Industrygrowth_{ti}$ – growth rates of value added in industry, % in period t and for country i.

In general, the results of the calculations based on this model, presented in Table 7, show that the coefficients for macroeconomic stability indicators decrease for all analysed periods, although the relative importance remains the same as in the previous model, with the exception of inflation and unemployment, the coefficients for which change from positive to negative in the post-crisis period.

The coefficient of determination R2 in this model increases significantly in the post-crisis period. It is worth noting the growing influence of exports and fixed asset investment on economic growth. It is interesting to note the lack of influence of macroeconomic stability indicators, except for the budget balance, during the boom of 2000-2008. After the global financial crisis, the impact of interest rates, the current account balance, and unemployment increased dramatically. If one quantifies the impact of macroeconomic stability, it explains less than 20% of the fluctuations in GDP per capita growth during a boom and about 35-40% during a recession.

Market reforms, decentralisation of the economy and, above all, the liberalisation of prices and the process of transformation of property relations in the national economic systems of post-socialist countries can only be effective if the government pursues a policy of macroeconomic stabilisation. This includes tight budget restrictions, a significant reduction in government spending, a reduction in lending to industrial enterprises, the creation of a modern banking system and a reduction in bank interest rates.

The findings of this study indicate that the exchange rate exerts a relatively weak influence on economic growth. Consequently, the effectiveness of macroeconomic policies that are solely focused on stabilising the exchange rate is constrained, particularly in post-Soviet countries.

The use of exchange rate stabilisation alone for macroeconomic stabilisation does not solve the problem of the long-term stable functioning of the economy. J. Frenkel and M. Mussa (1980) point out that "...while government policies can reduce exchange rate fluctuations, even to the extent of pegging an exchange rate, it cannot be assumed that such policies will automatically eliminate the disturbances currently reflected in the turbulence of exchange rates. Such policies may merely transfer the effects of disturbances from the exchange market to some other part of the economic system. There is no assumption that

Table 7

The current model of economic growth and macroeconomic stability in CEE

Independent variables	Dependent variable GDPCG$_{ti}$			
	For the period 1991-2021	For the period 1991-2008	For the period 2000-2008	For the period 2009-2021
Exportgrowth$_{ti}$	0.108 (7.48)	0.093 (5.12)	0.029 (1.40)	0.163 (6.97)
Grossfixedcapitalgrowth$_{ti}$	0.000 (0.05)	-0.028 (-2.18)	0.077 (3.62)	0.062 (3.41)
Industrygrowth$_{ti}$	0.403 (15.86)	0.394 (10.95)	0.234 (6.11)	0.244 (6.35)
Reer$_{ti}$	0.000 (0.06)	-0.012 (-0.99)	-0.016 (-0.92)	-0.016 (-0.75)
Treserve$_{ti}$	-0.001 (-0.09)	0.063 (2.06)	0.001 (0.03)	0.002 (0.12)
Lendinginterestrate$_{ti}$	-0.010 (-1.95)	-0.020 (-3.00)	-0.040 (-0.99)	-0.217 (-3.36)
Currentaccountbalance$_{ti}$	-0.119 (-4.58)	-0.022 (-0.46)	-0.007 (-0.14)	-0.208 (-3.60)
Inflation$_{ti}$	-0.005 (-4.08)	-0.005 (-3.94)	0.005 (0.30)	-0.014 (-0.69)
Budgetbalance$_{ti}$	0.280 (5.72)	0.170 (2.07)	0.326 (3.23)	0.214 (3.22)
Unemployment$_{ti}$	-0.082 (-1.95)	-0.189 (-2.61)	-0.049 (-0.67)	-0.110 (-1.75)
Constant$_{ti}$	2.723 (2.83)	4.925 (3.30)	6.498 (2.96)	5.521 (2.35)
Within R^2	0.77	0.75	0.58	0.84
Between R^2	0.65	0.22	0.57	0.59
Overall R^2	0.76	0.69	0.58	0.80
Statistical tests F-test	125.19	53.9	15.82	85.58
Number of observations	384	199	135	185

Source: author's calculations

the transfer of disturbances will reduce their overall impact and social cost."

This research on exchange rate volatility is very similar to that of R. Flood and A. Rose (1995), who find that exchange rate volatility often changes sharply while the volatility of macroeconomic variables does not, and they cannot find a strong trade-off between exchange rate volatility and the volatility of various macroeconomic variables (e.g., interest rates, relative prices, money, reserves, and stock returns).

The author agreed with W. Easterly (2005) who argued that traditional fiscal and financial instruments, except for the exchange rate, have little impact on resource mobilisation, including investment. Inefficient macroeconomic policies can persist for an extended period due to their capacity to generate substantial revenues, dividends, and privileges for small, influential groups. Conversely, the associated losses are often distributed among a relatively small number of individuals, as observed by the renowned economist A. Dixit (1996). In the absence of institutional reforms and free-market institutions that

effectively mobilise resources and drive economic growth, the state may assume a leading role in mobilising and increasing investments.

It is important to note that the impact of macroeconomic stability during the economic boom of 2000-2008 and after the global financial crisis of 2008 is significantly different. The moderate impact of macroeconomic indicators on economic growth during the economic boom and the significant growth in the post-crisis period.

F. Coricelli and I. Masten (2004) posit that the elevated volatility of macroeconomic indicators in the CEE is attributable to the underdeveloped state of financial markets. In their 2004 study, F. Coricelli and E. Ianchovichina highlight the influence of significant flows of foreign capital, terms of trade, and institutional changes on macroeconomic volatility.

It is this author's contention that, in periods of economic crisis, a different approach to regulating the volatility of macroeconomic indicators is required in comparison with that employed during periods of economic expansion. In the context of economic recovery from a crisis, it is of greater consequence to

maintain equilibrium between internal and external economic factors.

It is crucial to underscore the argument put forth by J. Ocampo (2008), namely that pro-cyclical macroeconomic policies have not proven effective in fostering growth. This phenomenon has become a common occurrence in the context of financial globalisation, particularly in Central and Eastern Europe. Therefore, a combination of countercyclical fiscal and monetary policies, complemented by an appropriate intermediate exchange regime and a set of capital management techniques, is essential to reduce the accumulation of public and private sector risks in the context of pro-cyclical access to international capital markets (Ocampo, 2008).

According to the author, macroeconomic stability, prudent fiscal policy with effective industrial and export policies will ensure sustainable economic growth.

4. Conclusions

This study has identified certain trends in the processes of macroeconomic stabilisation in the countries of Central and Eastern Europe over the past three decades. The period in the history of post-socialist countries was characterised by a multitude of economic reforms, as well as a series of external and internal shocks, periods of economic expansion and contraction.

Several indicators of internal and external equilibrium are used in the analysis of macroeconomic stability: GDP growth per capita, inflation, unemployment, lending interest rate, budget balance, current account, real effective exchange rate, and total reserves. Some indicators showed significant differentiation before and after the global financial crisis of 2008. After the crisis, there was a sharp decline in average GDP per capita growth, inflation, the current account deficit, and the lending interest rate, indicating that macroeconomic stability improved after the crisis, and economic growth declined by 2.5 times.

Overall, inflation, the lending interest rate, and the budget balance remain the dominant factors affecting economic growth, with the impact of the real effective exchange rate declining.

The total reserves held by countries in Central and Eastern Europe play a comparatively minor role in comparison to those of other emerging market economies. It can be concluded that the general reserves of central banks played a significant role in the context of the market transformation of CEE economies and their accession to the European Union. They served as a foundation for macroeconomic stability and the mitigation of excessive fluctuations in inflation, interest rates, and the real effective exchange rate.

The study concluded that successful economic growth required a sharp decline in inflation, interest rates, budget deficits, a strong national currency and accumulation of significant foreign exchange reserves, and a negative current account balance, which was driven by a large inflow of foreign capital. Since the crisis, the importance of the exchange rate, official reserves and inflation has been declining, although the need to create new jobs and the need for investment and innovation have increased significantly.

Indicators of the quality of the institutional environment: control of corruption, government effectiveness, rule of law, political stability and regulatory quality significantly affect macroeconomic stability in the countries of Central and Eastern Europe. In particular, the high quality of the institutional environment significantly reduces inflation and the lending interest rate.

After the crisis, the importance of the current account balance and lending interest rate in influencing economic growth has increased significantly, as evidenced by our panel fixed-effects regressions.

This paper confirms that the exchange rate plays an insignificant role in boosting economic growth, so linking macroeconomic stabilisation to the exchange rate does not ensure the same effectiveness of macroeconomic policy as interest rate targeting.

For a country to experience successful economic growth, it is essential to combine macroeconomic stability with the creation of an investment and industrial foundation for the economy. In order to achieve this, governments must implement appropriate policies, not only in the areas of fiscal and monetary policy, but also in the field of industrial policy. This latter area requires further research.

It is important to highlight that the primary positive factor influencing economic growth in all periods is the balance of the budget. Consequently, fiscal policy in the countries of Central and Eastern Europe should be a central focus.

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