

Determinants of Market Capitalization in Central and Eastern European Countries: Dynamic Panel Evidence from 2014–2023

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Abstract: This study examines the determinants of market capitalization in seven Central and Eastern European countries over 2014-2023. Using a dynamic panel model estimated by System GMM, the paper tests the effects of domestic credit, banking-sector stability, inflation, GDP growth and a COVID-19 dummy. The results show that banking-sector stability has a strong positive and statistically significant effect on market capitalization, while domestic credit to the private sector is insignificant. Inflation is positively associated with market capitalization, whereas GDP growth has a negative short-run effect. The COVID-19 dummy is not statistically significant, indicating that the pandemic and post-pandemic period did not create a lasting structural shift in market capitalization after controlling for macro-financial determinants.

Keywords: Market capitalization, Banking stability, Financial development, System GMM, COVID-19

INTRODUCTION

Capital market development remains a strategic issue for transition and emerging European economies because it affects savings mobilization, investment allocation and the diversification of corporate financing sources. Market capitalization is commonly used as a proxy for capital market depth, since it captures the market value of listed domestic firms and reflects the capacity of the financial system to support market-based financing. In Central and Eastern Europe, capital markets are still relatively small, less liquid and institutionally heterogeneous compared with advanced European markets. At the same time, banks remain the dominant source of external finance for firms and households. This structural feature makes the interaction between banking-sector conditions and capital market development especially relevant.

The paper addresses the following research question: to what extent do domestic credit, banking-sector stability, inflation, GDP growth and the COVID-19 period explain market capitalization dynamics in selected Central and Eastern European countries? The issue is important because the literature provides two competing interpretations. One view treats banks and capital markets as complementary components of financial development, where a stable banking sector reduces uncertainty, improves monitoring and strengthens investor confidence. Another view suggests a substitution effect in bank-centred economies, where firms rely on bank lending instead of equity financing. This ambiguity remains insufficiently clarified for Central and Eastern European economies.

The objective of the study is therefore to distinguish between the quantity of bank credit and the quality of banking stability as determinants of capital market development. The analysis also incorporates macroeconomic variables because inflation and economic growth influence investor expectations, nominal asset valuation and the transmission between the real and financial sectors. A COVID-19 dummy variable is added to control for the common external shock generated by the pandemic and the subsequent adjustment period. The contribution of the study lies in its regional focus, its dynamic specification and its emphasis on the empirical difference between credit expansion and banking-system resilience.

METHODOLOGY

The empirical analysis covers Poland, the Czech Republic, Slovenia, Croatia, Hungary, Romania and Bulgaria. The sample period extends from 2014 to 2023, providing a recent and comparable time frame that includes pre-pandemic years, the COVID-19 shock and the post-pandemic recovery. Data are taken from the World Bank database, specifically the World Development Indicators. The Baltic states are excluded because of the limited size of their capital markets, while Slovakia is omitted due to data availability constraints.

The dependent variable is market capitalization of listed domestic companies. The explanatory variables are domestic credit to the private sector by banks, the banking-sector Z-score, the consumer price index, GDP growth and a COVID-19 dummy. Domestic credit measures the scale of bank intermediation, while the Z-score is used as a proxy for banking stability because it compares capitalization and profitability with the volatility of returns. Inflation is measured by the consumer price index and captures the macroeconomic price environment. GDP growth represents real economic activity. The COVID-19 dummy equals zero in the pre-pandemic period and one during the pandemic and post-pandemic period.

Because market capitalization may adjust dynamically and because financial variables may be endogenous, the model is estimated using the System Generalized Method of Moments. This estimator is appropriate for dynamic panels with country-specific heterogeneity, lagged dependent variables and potential simultaneity between financial and macroeconomic variables. Model adequacy is evaluated through the Wald test, the Sargan test of instrument validity and Arellano-Bond tests for first- and second-order autocorrelation. Correlation analysis is used to check multicollinearity, while unit root testing confirms that the variables can be treated as stationary in levels.

Table 1. Variables and expected relationship

Variable	Model role	Operational meaning
MAC	Dependent variable	Market capitalization of listed domestic companies
DC	Banking indicator	Domestic credit to the private sector by banks
Zsc	Banking indicator	Banking-sector stability measured by Z-score
CPI	Macroeconomic indicator	Consumer price index and inflation environment
GDP	Macroeconomic indicator	GDP growth and real economic activity
COVID-19 dummy	Shock control	Pandemic and post-pandemic period indicator

Reference: Authors' calculation (2025).

FINDINGS

The research results provide clear evidence that banking-sector stability is the strongest determinant of market capitalization in the analysed countries. In Model 1, excluding the COVID-19 dummy, the Z-score coefficient is 2.959734 and statistically significant at the 1% level. In Model 2, including the COVID-19 dummy, the coefficient increases to 3.282108 and remains significant at the 1% level. This confirms that the positive effect of banking stability is robust across specifications. A more stable banking system appears to reduce systemic risk, support financial confidence and create conditions under which investors and listed firms can participate more effectively in capital markets.

Domestic credit to the private sector does not have a statistically significant effect on market capitalization. The coefficient is negative in both models, equal to -0.2699836 in Model 1 and -0.2216841 in Model 2, but the associated t-values show that the effects are statistically insignificant. This indicates that credit expansion alone is not sufficient to deepen capital markets. In the observed economies, credit

may be directed toward sectors with limited stock market relevance, or firms may use bank loans as a substitute for market-based financing.

Inflation has a positive and statistically significant effect in both models. The CPI coefficient equals 1.748802 in Model 1 and 1.609658 in Model 2, with significance at the 5% level. This result differs from the classical expectation that inflation reduces real returns and weakens capital market performance. In this sample, inflation may reflect nominal asset repricing, monetary expansion and post-pandemic price adjustment. Consequently, increases in market capitalization during inflationary periods should be interpreted carefully, since they may indicate nominal valuation effects rather than genuine improvements in liquidity, depth or efficiency.

GDP growth has a negative and statistically significant short-run effect on market capitalization. The estimated coefficient is -0.8455613 in Model 1 and -0.7775267 in Model 2, both significant at the 1% level. This suggests that real-sector expansion does not automatically translate into higher market capitalization in transition economies. Economic growth may initially be financed through retained earnings or bank lending, while capital markets react with a delay. Institutional rigidities, limited liquidity and a narrow investor base may weaken the transmission from GDP growth to market value.

The COVID-19 dummy is positive but statistically insignificant, with a coefficient of 1.120369 and a t-value of 0.83. Therefore, the pandemic and post-pandemic period did not produce an additional structural shift in market capitalization after controlling for banking stability, credit activity and macroeconomic variables. Diagnostic tests support the model specification: the Wald tests are significant, the Sargan tests indicate valid instruments, and AR(2) tests are insignificant, suggesting no second-order serial correlation. Overall, the results show that market capitalization in the selected CEE countries is driven more by banking resilience and macro-financial conditions than by credit volume or the COVID-19 shock itself.

Table 2. Dynamic panel results and diagnostic tests

Variable / test	Model 1	Model 2	Interpretation
MAC(t-1)	-0.3343996** (-2.15)	-0.3446928** (-2.36)	Negative short-run adjustment
DC	-0.2699836 (-1.27)	-0.2216841 (-1.09)	Insignificant credit effect
Zsc	2.959734*** (3.74)	3.282108*** (5.04)	Positive banking-stability effect
CPI	1.748802** (2.10)	1.609658** (2.07)	Positive nominal channel
GDP	-0.8455613*** (-2.97)	-0.7775267*** (-2.75)	Negative short-run growth effect
COVID-19 dummy	-	1.120369 (0.83)	No statistically significant shift
Wald test	99.10 (0.0000)	394.21 (0.0000)	Overall model significance
Sargan test	17.1685 (0.5785)	15.90206 (0.6638)	Instrument validity not rejected
AR(1) / AR(2)	-1.6708 (0.0948) / -0.21393 (0.8306)	-1.7269 (0.0842) / -0.18041 (0.8568)	No second-order autocorrelation

Notes: t-values are reported in parentheses. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively.

Reference: Authors' calculation (2025).

CONCLUSIONS

The findings lead to several conclusions. First, sustainable capital market development in Central and Eastern Europe depends more on banking-sector stability than on credit expansion. A resilient banking system reduces systemic risk and strengthens confidence, thereby supporting market capitalization even in economies where banks dominate financial intermediation. Second, the insignificant effect of domestic credit implies that increasing lending volumes is not enough to stimulate capital market development. Policymakers should focus on improving the quality of financial intermediation, strengthening market infrastructure and encouraging firms to diversify financing sources.

Third, the positive inflation effect shows that nominal increases in market capitalization must be interpreted cautiously. Higher valuations during inflationary periods do not necessarily mean that markets have become deeper, more liquid or more efficient. Fourth, the negative short-run GDP effect confirms that real economic growth does not automatically translate into capital market development when institutional and structural constraints are present. Finally, the insignificant COVID-19 effect suggests that

the pandemic was a temporary disruption rather than a permanent change in the determinants of market capitalization.

These results also imply that capital market policies should be coordinated with banking regulation, monetary policy and institutional reforms. Isolated efforts to increase market size are unlikely to be effective unless they are supported by transparent listing rules, stronger investor protection, better disclosure standards and deeper market infrastructure. For CEE policymakers, the priority is not merely expanding credit, but creating a financial architecture in which stable banks and capital markets jointly support productive investment and more resilient long-term economic convergence in Europe.

The main limitations of the study are the small country sample, the use of aggregate country-level variables and the simplified treatment of COVID-19 through a dummy variable. Future research could expand the country coverage, include liquidity and institutional quality indicators, test nonlinear effects and compare firm-level with country-level evidence. Despite these limitations, the study provides evidence that capital market development in Central and Eastern Europe requires banking stability, credible institutions and stronger integration between banks and capital markets.

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