

Capitalization of Romanian companies and macroeconomic variables: friends or foes?*

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Abstract. *Adequate capitalization of non-financial companies represents one of the main vulnerabilities of the Romanian economy. Estimating its impact on macroeconomic variables could give hints about how transmission mechanisms of fiscal and monetary policies as well as financial stability could be strengthened. Using empirical evidence for Romania, in the period 2009-2024, the paper investigates the relationship between capitalization needs, economic growth and budget deficit and shows that by reducing undercapitalization, budget deficit could decrease by around 0.3-0.4 percentage points – non-ESA2010/consolidation effects, operating directly through higher taxes of undercapitalized companies and indirectly through second-round effects of more buoyant economic growth. Moreover, it is proved that adequately capitalized firms are more resilient, less dependent on external financing, and better able to sustain investment and absorb shocks. Strengthening corporate capital buffers may therefore support policy effectiveness, macroeconomic resilience, and sustainable economic growth.*

Keywords: companies' capitalization, transmission mechanism, economic growth, budget deficit.

JEL Classification: G32, O47, E62, H62, O16.

* Generative Artificial Intelligence (AI)

We confirm that in accordance with the Taylor & Francis AI Policy, we used Generative AI tools (ChatGPT) in the preparation of our manuscript to enhance the language of our manuscript, improving its clarity and readability.

1. Introduction

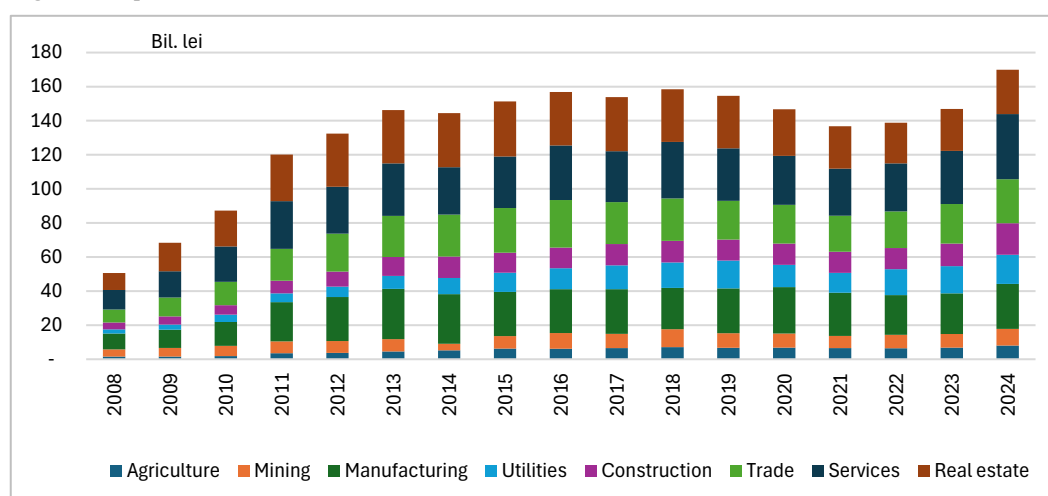
The continuation of the fiscal consolidation process, necessary to reduce the imbalances affecting the national economy, depends on increasing tax revenues. This goal can be achieved by broadening the tax base and/or improving tax collection: (i) in the case of VAT, where Romania has the largest VAT gap among EU Member States, at around 30%⁽¹⁾, significant reduction in the VAT collection gap could generate additional revenues of more than 1.5% of GDP, and (ii) in the case of corporate income tax, where the collection gap is likewise the highest in the EU, at 43.6%⁽²⁾, improved collection can generate at least 0.5% of GDP. In addition to changes in tax legislation, following the example of other countries in the region that have significantly reduced tax evasion and the shadow economy (Romania records one of the highest shares of the shadow economy in GDP among EU Member States, at around 29% of GDP⁽³⁾, after Bulgaria at 33.1% and Croatia at 29.7%), it is also necessary to strengthen the financial health of companies, in line with Recommendation R/2/2018 of the National Committee for Macprudential Oversight. Additional legislative changes, that could eliminate the significant existing arbitrage opportunity between capital and labour taxation, as well as curbing the extreme regressivity of the Romanian tax system – that has an additional benefit of higher labour market participation⁽⁴⁾ – would also partially function by improving the real sector capitalisation.

Adequate capitalization of the corporate sector is a fundamental condition for the efficient functioning of the macroeconomic policies transmission mechanisms, as the soundness of companies' financial positions and balance sheets directly influences their capacity to absorb shocks, access sources of financing and adapt decisions on investment, production, employment and financial structure in response to changes in the economic policy framework. From this perspective, an adequate level of equity capital contributes to reducing the financial vulnerability of firms and increasing their capacity to respond to the incentives generated by fiscal, monetary and macroprudential policies. Conversely, the prevalence of a high degree of undercapitalization can affect the effectiveness of these policies by limiting the capacity of companies to transform economic policy impulses into real investment and development decisions, by restricting access to credit and by amplifying the constraints associated with high levels of indebtedness. Thus, the capitalization of companies should not be analyzed exclusively as a microeconomic characteristic of the corporate financial structure, but also as a determinant of the functioning of the channels through which macroeconomic policy measures are transmitted to the real economy, with direct implications for economic growth, financial stability and the sustainability of the fiscal position. According to the June 2026 edition of the Financial Stability Report the main vulnerability of the national economy is represented by the low payment discipline in the economy and the vulnerabilities in the balance sheets of companies. Undercapitalized companies invest less, operate with fragile liquidity and are more exposed to insolvency, which reduces the tax base and increases the risk of non-payment and evasion. Moreover, the low level of capitalization affects the ability of companies to access external sources of financing, limiting both investment possibilities

and financial resilience in times of stress. Restricted access to bank lending and other market financing mechanisms contributes to the perpetuation of a financing model based predominantly on domestic funds or trade credit.

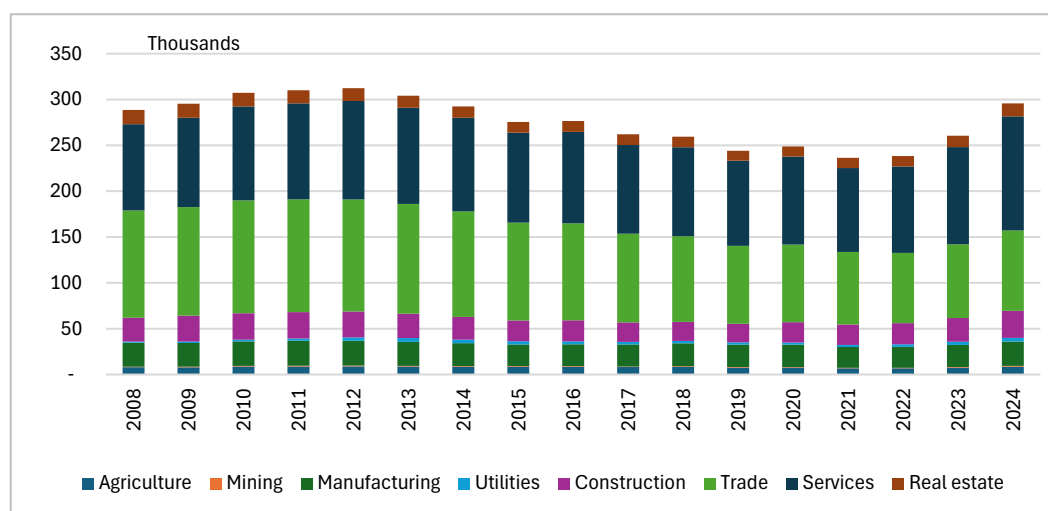
According to Romanian Ministry of Finance data, the economy-wide recapitalization need of Romanian companies amounted to RON 170 billion in 2024 (Figure 1), equivalent to approximately 9% of GDP, and was generated by nearly one-third of all companies in the economy (Figure 2).

Figure 1. *Capitalization needs*



Source: Ministry of Finance, authors calculations

Figure 2. *Number of undercapitalized companies*

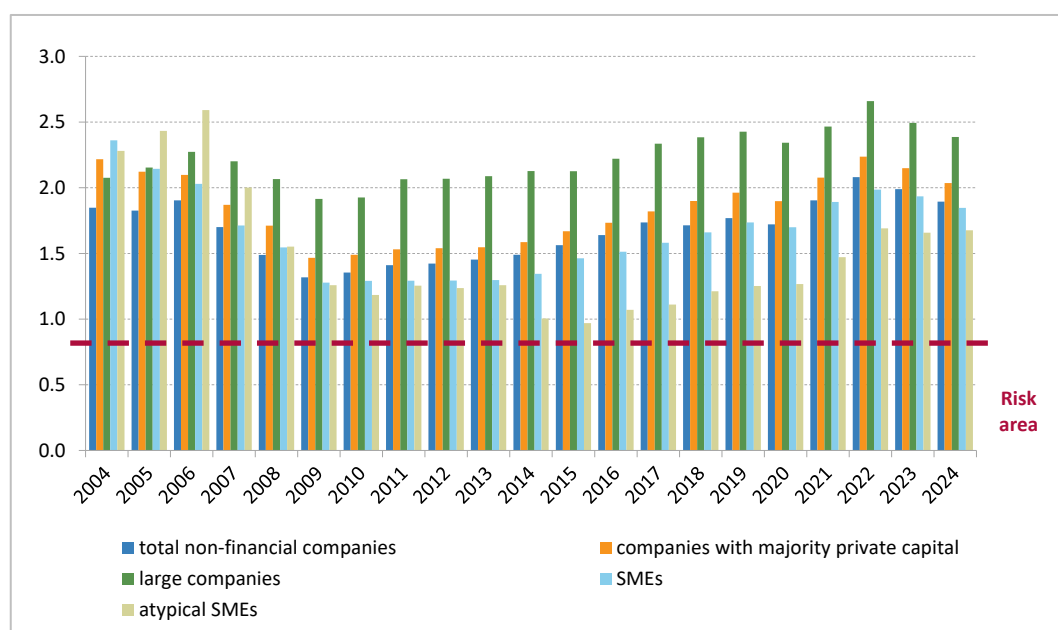


Source: Ministry of Finance, authors calculations

These companies also play a significant role in economic activity, contributing around 7% of the gross value added, holding approximately 10% of total assets, and employing more than 12% of the total number of employees. From a sectoral perspective, services account for the largest share of recapitalization needs, at 23%, followed by manufacturing at 16%, while trade and real estate account for approximately 15%.

Regarding the financial health indicator of the Romanian companies, using the Altman (2000) methodology as a proxy, the data points towards a deterioration in 2024 compared with the previous year, although it remained above the 1.2 threshold – associated with the distress zone (Figure 3). Nevertheless, several sectors continue to remain within the risk zone, including agriculture, utilities, and real estate.

Figure 3. Financial health measure by company size



Note: The overall financial health measure of the non-financial companies sector was determined based on the methodology developed by Edward Altman – “Predicting financial distress of companies: Revisiting the Z-score and ZETA models”, 2000. Considering that the non-financial companies sector in Romania comprises overwhelmingly unlisted firms, the indicator was calculated by using the method adapted for private companies: Z-score was built based on the following formula: $Z' = 0.717(X1) + 0.847(X2) + 3.107(X3) + 0.420(X4) + 0.998(X5)$, where: X1 –Net current assets/Total assets; X2 –Net retained earnings/Total assets; X3 –EBIT/Total assets; X4 –Equity/Debt; X5 –Sales/Total assets.

Source: Ministry of Finance, authors calculations

According to the Fiscal Council (2026), certain measures, such as those enacted in 2025⁽⁵⁾, by Law 239/2025, may help address this structural vulnerability. However, the effects of this legislation are expected to materialize gradually over an implementation horizon of

approximately two years, and it's estimated that even steadfast implementation could reduce undercapitalization by one third. Therefore, its positive impact on public finances will depend on the rigorous enforcement of sanctions for non-compliance with the legal requirements.

The paper aims to examine how adequate corporate capitalization in Romania may influence key macroeconomic variables, namely economic growth and the fiscal deficit. These effects may occur directly through a *friction channel*, represented by the outstanding tax and budgetary obligations of undercapitalized companies, as well as indirectly through *second-round effects* operating via economic growth. This indirect transmission mechanism includes *capitalization channel*, the *financial channel* through access to bank credit, and the *performance channel* through improvements in corporate profitability. The remainder of the paper is structured as follows: Section 2 reviews the relevant literature on the transmission mechanisms between the real economy and macroeconomic variables; Section 3 discusses the methodology and data used in the analysis; Section 4 presents the empirical results and the potential effects associated with adequate corporate capitalization; and the final section discusses the conclusions and policy recommendations aimed at addressing the problem of undercapitalization of companies in Romania.

2. Literature review

The interaction between corporate capitalization and the transmission of macroeconomic policies has attracted considerable attention in the literature, given the central role of firms' financial soundness in supporting both corporate resilience and macroeconomic stability. Adequate capitalization strengthens firms' balance sheets, enhances their capacity to absorb adverse shocks, and reduces their dependence on external financing, thereby limiting the amplification of economic disturbances. In the context of monetary policy, financially sound firms may be better able to respond to changes in interest rates and credit conditions, facilitating the transmission of policy impulses to investment and economic activity. Similarly, adequate capitalization can support the effectiveness of fiscal policy by increasing firms' capacity to withstand temporary shocks and respond to fiscal measures without being constrained by excessive financial vulnerabilities. From a financial stability perspective, stronger corporate balance sheets reduce default risk and limit the potential transmission of corporate distress to the banking and financial sectors. Consequently, adequate capitalization contributes not only to firm-level resilience but also to a more effective implementation of macroeconomic policies and to the mitigation of systemic risks, ultimately supporting broader economic stability.

How monetary policy affects different industries and whether differences in their financial and economic characteristics influence the strength of monetary policy transmission is presented in the paper of Choi et al. (2022). The authors use an industry-level differential approach, exploiting variation across industries in characteristics such as their dependence on external finance, asset structure, and sensitivity to interest rates. The evidence shows

that the effects of monetary policy are heterogeneous across sectors: industries that are more financially constrained or more dependent on external financing tend to react more strongly to changes in monetary conditions. Monetary transmission mechanism does not affect all parts of the economy equally, and that analyzing differences across industries provides important evidence on the channels through which monetary policy influences real economic activity. Furthermore, the findings of Thurwächter (2022) and Lakdawala et al. (2022) reinforce this conclusion by showing that differences at the individual firm level are also important for understanding how monetary policy is transmitted through the economy. Firms with different financial conditions, levels of indebtedness, and access to external finance do not respond equally to changes in monetary policy, with more financially constrained firms generally being more sensitive to changes in interest rates and credit conditions. Durante et al. (2020), show that young firms are more vulnerable to monetary policy shocks, highlighting the existence of the credit channel of monetary policy, but also in terms of goods they produce, firms producing durable goods tend to react more than others, which is consistent with the traditional interest rate transmission channel. Moreover, the paper suggests that monetary policy shocks are longer lived for firms that are durable goods producers than for young firms indicating that demand effects last longer than credit effects. In terms of firms' level of labor share, Steininger and Matzner (2025), show that the composition of labor and capital within firms affects their response to monetary policy. Because labor cannot be used as collateral like fixed capital, labor-intensive firms face stronger borrowing constraints and are more negatively affected by tighter monetary conditions, leading to lower investment, debt, and profitability. Griffith-Jones et al. (2025), highlights the importance of differences in firms' financial positions, particularly their capitalization, for the transmission of monetary policy. Firms with stronger capital buffers and healthier balance sheets are generally better able to absorb increases in interest rates and tighter credit conditions, while poorly capitalized or highly indebted firms are more financially vulnerable and may face greater difficulties in accessing external finance. The paper therefore suggests that the degree of corporate capitalization is an important factor in determining how firms respond to monetary policy shocks.

For the case of macroeconomic policies transmission channels to firms balance sheet, Chatelain et al. (2001) estimate for the case of Germany, France, Italy and Spain neo-classical investment relationships, explaining investment decision by cost, sales and cash flow, and the main conclusion is that investment is the most sensitive to user cost changes, meaning that there is an operative interest rate channel in all those Euro area countries, but only in Italy smaller firms react to cash flow movements, so the credit channel might not be as generic in all countries in the monetary union.

From a financial stability perspective Storz et al. (2017) examines the relationship between zombie firms and financially stressed banks in Europe, asking whether weak banks help keep unproductive firms alive by continuing to provide them with credit. Using a large dataset that combines firm-level and bank-level information across several European

countries, the authors identify zombie firms based on persistent financial weakness and analyze their lending relationships with banks of different financial conditions. Their econometric results provide evidence that stressed banks are more likely to continue lending to weak and potentially non-viable firms, partly because recognizing losses on these loans would further damage their own balance sheets. Zombie firms and weak banks can reinforce each other's problems, creating a negative cycle that misallocates credit, reduces productivity, and slows economic recovery; consequently, resolving weaknesses in the banking sector and addressing non-performing loans is important for preventing the continued survival of inefficient firms.

In order to see the interaction between fiscal policy and adequate capitalization, the paper of De Mooij and Liu (2021), examines how thin capitalization rules, which limit the tax deductibility of interest payments to discourage excessive debt financing and profit shifting, affect firms' real economic decisions. Using cross-country data and changes in thin capitalization rules as a source of variation, the authors apply econometric analysis to compare firms affected by these rules with less affected firms and identify their impact on corporate financing and investment. The evidence shows that these rules reduce firms' use of debt and limit tax-motivated profit shifting, but they also generate real economic costs, particularly by reducing investment and potentially affecting firm growth. Capitalization rules can be effective in protecting the corporate tax base and reducing excessive debt, but policymakers face an important trade-off: stricter rules can improve tax enforcement while also increasing firms' cost of capital and negatively affecting productive investment.

For the case of Romania, Georgescu (2018) highlights corporate undercapitalization as an important structural vulnerability and emphasizes the need to strengthen firms' own capital base. In this context, capital is closely linked to labor, as sustainable economic growth and productivity depend on the combination of adequate investment and capital accumulation with the efficient use and remuneration of labor. Better-capitalized firms are more resilient to shocks, less dependent on debt and external financing, and better positioned to invest and maintain employment, which also supports the effectiveness of fiscal and monetary policies and contributes to overall financial stability. Also, the latest financial stability report, from June 2026, highlights undercapitalization as the main vulnerability of the national economy. European Commission in its 2026 country report for Romania identifies the weak capitalization of firms as one of the structural constraints of the economy, along with high financing costs and low financial development.

3. Data and methodology

In order to determine *prima facie* evidence of the relationship between the capitalization conditions of non-financial companies and selected macroeconomic variables, the econometric method employed is Ordinary Least Squares (OLS) regressions. The analysis focuses on the relationship between changes in corporate recapitalization needs and macroeconomic outcomes, particularly real economic growth and the fiscal balance. OLS

provides a transparent and appropriate framework for estimating the average linear relationship between these variables over the available annual sample (2009-2024), a summary of the variables used are presented in Table 1. The corporate financial variables are expressed as log differences, thereby capturing their relative changes over time, while macroeconomic variables are retained in their economically meaningful units, such as annual real GDP growth rates and the fiscal balance as a percentage of GDP. This specification allows the estimated coefficients to be interpreted as marginal effects of changes in corporate capitalization conditions on macroeconomic performance. Given the relatively limited number of annual observations, a parsimonious OLS specification is preferred to preserve degrees of freedom and avoid over-parameterization. The model also provides a basis for counterfactual simulations assessing how reductions in corporate recapitalization needs may be associated with changes in economic growth and, subsequently, fiscal outcomes. The validity of the estimates is assessed using standard diagnostic indicators, including coefficient and overall model significance, goodness of fit, and residual autocorrelation diagnostics. Accordingly, the results are interpreted as conditional statistical relationships rather than definitive evidence of causality.

Table 1. *Financial and macroeconomic indicators*

Indicator	Formula	Unit of measure	Source
Economic growth	ECG	%	EUROSTAT
Budget balance	DEF	% GDP	EUROSTAT
Capitalization requirements of companies in the economy	NEC_CAP	log difference	Ministry of Finance, authors calculations
Companies credit	CREDIT	log difference	Ministry of Finance, authors calculations
Net profit	PN	log difference	Ministry of Finance, authors calculations
Budget arrears	RESTBUG	log difference	Ministry of Finance, authors calculations

For this study, companies with negative capital represent those companies for which the net asset, determined as the difference between total assets and total liabilities, is below half of the value of the subscribed share capital, in accordance with the provisions of Law No. 31/1990 on companies.

From a theoretical perspective, the analysis is based on a reasoning framework that establishes a link between the economy-wide recapitalization needs of firms and the fiscal deficit, both directly and indirectly. The direct relationship operates through a friction channel represented by the arrears owed to the state budget by undercapitalized companies. The indirect relationship is examined through three transmission channels represented by the following indicators: (i) bank credit to adequately capitalized companies, capturing the financial channel; (ii) the net profit of adequately capitalized companies, representing the performance channel; and (iii) the arrears owed to the state budget by adequately capitalized companies, reflecting the fiscal payment discipline channel.

For the case in which data on adequately capitalized companies are used, the equation describing the interaction between the variables is specified as follows:

$$ECG = \alpha + \beta_1 CREDIT + \beta_2 PN + \beta_3 REST_{BUG} + \varepsilon \quad (1)$$

Economically, this specification examines how the financial conditions of well capitalized non-financial companies are associated with real economic growth. CREDIT captures the role of firms' access to and use of bank financing, while PN reflects their profitability and internal capacity to generate financial resources. REST_BUG measures outstanding obligations to the public budget and can be interpreted as an indicator of financial distress and weakened payment discipline.

The model therefore assesses the extent to which changes in corporate financing, profitability and financial distress are associated with changes in real economic growth, allowing their individual marginal contributions to GDP growth to be evaluated while holding the other factors constant.

On the other hand, an attempt was made to assess the impact of the economy-wide recapitalization needs on economic growth, with the underlying premise that a reduction in these needs could generate significant positive effects on real economic growth. This relationship is described by the following linear specification:

$$ECG = \alpha + \beta NEC_CAP + \varepsilon \quad (2)$$

In the second stage, the current-year fiscal deficit was explained by economic growth and the fiscal deficit in the previous year, reflecting both the dependence of revenues on macroeconomic bases (GDP is the selected proxy) as well as persistence of the deficit values – reflecting the structural inability to reduce the deficit towards sustainable target levels over the period under analysis.

$$DEF_t = \alpha + \beta_1 ECG + \beta_2 DEF_{t-1} + \varepsilon \quad (3)$$

4. Results

This section will follow the steps described in the previous one, namely in the first place was analyzed the relationship between economic growth and three financial indicators of adequately capitalized firms, to represent the ideal situation of the economy from the capitalization point of view.

As presented in table 2, economic growth is positively associated with both the stock of credit granted to adequately capitalized companies and their net profit, while it is negatively associated with their arrears to the public budget. However, the economic and statistical significance of these relationships differs across variables. The coefficient on CREDIT is positive (11.13), indicating that greater access to credit for adequately capitalized firms is associated with higher economic growth, consistent with the idea that financially sound companies can use external financing to support investment, production, ultimately growth; nevertheless, this effect is not statistically significant ($p = 0.460$). Similarly, PN (net profit) has a positive coefficient (7.78), suggesting that higher profitability among adequately capitalized companies may contribute to growth by increasing internal financing capacity and supporting investment, although this relationship is also not statistically significant at

conventional levels ($p = 0.157$). In contrast, REST_BUG (arrears to the public budget) has a negative and statistically significant coefficient (-10.76 , $p = 0.021$), indicating that an increase in tax and budget arrears is associated with lower economic growth. From an economic perspective, this result suggests that even among adequately capitalized firms, the accumulation of arrears may reflect financial stress, weaker payment discipline, or an inefficient allocation of resources, all of which can negatively affect economic activity and fiscal sustainability.

Table 2. *Economic growth and financial indicators of adequately capitalized companies*

Independent Variables	Dependent variable: Economic growth (ECG)
CREDIT	11.13 (14.60)
PN	7.78 (5.18)
REST_BUG	-10.76** (4.10)
Observations	16
R-squared	0.5311

Note: Standard errors are reported in parentheses, ** indicates statistical significance at the 5% level.

Source: authors calculations

In the second stage, the paper captures the influence of the capital need of non-financial companies on economic growth, presented in table 3, column 1. The estimated coefficient suggests that reducing the capitalization gap could have a meaningful positive effect on economic growth. Specifically, a 10-percentage reduction in the capitalization gap is associated with an increase of approximately 1.54 percentage points in economic growth, *ceteris paribus*. From an economic perspective, this result indicates that strengthening firms' capital bases may enhance their financial resilience, reduce their dependence on debt and improve their capacity to invest and face shocks. Consequently, policies aimed at strengthening capitalization could support more sustainable economic growth, which could improve the fiscal position of the country, as we will see from the estimation available in table 3, column 2. Nevertheless, given that the estimated relationship is statistically significant at the 10% level, this result should be interpreted as suggestive evidence rather than definitive proof of a causal effect.

Table 3. *Estimated relationships between capitalization need, economic growth and budget balance*

Independent Variables	Dependent variable: Economic growth (ECG)	Dependent variable: Budget deficit (DEF)
NEC_CAP	-14.62* (6.91)	
ECG		0.24 (0.16)
DEF(t-1)		0.66*** (0.18)
constant	2.4836*** (0.86)	-2.29* (1.19)
Observations	16	15
R-squared	0.2425	0.62

Note: Column (1) presents the relationship between the corporate capitalization need and economic growth for 2009–2024. Column (2) estimates the relationship between economic growth and the budget balance for 2010–2024, controlling for the persistence of the fiscal position through its lagged value. Standard errors are reported in parentheses, * indicates statistical significance at the 10% level, ** indicates statistical significance at 5% level and *** indicates statistical significance at 1% level.

Source: authors calculations

The two regressions suggest an indirect transmission channel from firms' capitalization to fiscal performance through economic growth. A reduction of 10 percentage in the capitalization need is associated with an increase of approximately 1.54 percentage points in economic growth. Applying the estimated relationship between economic growth and the budget deficit, this increase in economic activity would, in turn, be associated with an improvement of approximately 0.38 units in the budget balance⁽⁶⁾ – non-ESA2010/consolidation effects, operating directly through higher taxes of undercapitalized companies and indirectly through second-round effects of more buoyant economic growth. The results suggest that reducing the capitalization need may strengthen firms' financial resilience and investment capacity, thereby supporting economic growth and, indirectly, public finances through higher tax revenues and lower expenditure pressures.

Given the potential simultaneity among the variables and the fact that the estimated coefficients may reflect a sample-dependent combination of concurrent demand and supply-side shocks, the results should not be interpreted as providing a precise quantitative measure of the magnitude of the underlying effects; rather, they provide evidence on the relevance of the transmission channel and, importantly, on the direction in which recapitalization needs, economic growth and the fiscal balance are associated.

5. Conclusions

The study of the influence of adequate capitalization of companies in Romania on macroeconomic variables is relevant in the current national and international context, marked by crises and exogenous shocks, because the corporate sector represents an important component from the perspective of the contribution to the national budget, respectively of the budgetary consolidation process, but also from the perspective of external competitiveness, well-capitalized companies can be relevant internationally, helping to reduce the external imbalance.

Through the mode of action of the capitalization requirement of companies, a decrease in it can lead to a higher level of economic growth, which would imply an increase in tax revenues, respectively a reduction in the budget deficit. The results confirm the economic logic, a 10 percent improvement in the capitalization of companies can lead to a reduction in the budget deficit by up to 0.4 percentage points, helping the budget correction process. Further research should address potential simultaneity and better disentangle the

underlying shocks, thereby strengthening the quantitative interpretation of the identified transmission mechanisms.

In terms of policy proposals that can support this structural reform, the measures provided for in NCMO Recommendation R/2/2018 are welcome, as are those applied by Law 239/2025, but whose application is gradual and requires strict application of sanctions in case of failure to adequately apply the legal provisions.

Adequate capitalization plays a central role in strengthening the transmission mechanisms and interactions among fiscal, monetary and financial stability policies. Well-capitalized firms are generally more resilient to adverse economic and financial shocks, less dependent on excessive debt and external financing, and better able to maintain investment and employment when financing conditions tighten. Consequently, stronger corporate balance sheets can enhance the effectiveness of monetary policy by reducing financial vulnerabilities and supporting a more efficient allocation of credit, while also improving fiscal outcomes through stronger economic activity, profitability and tax compliance. At the same time, adequate capitalization contributes to financial stability by increasing firms' capacity to absorb shocks and reducing the risk that corporate distress is transmitted to the banking sector. Overall, strengthening firms' capital can therefore create a virtuous transmission channel between macroeconomic policies, supporting economic resilience and enabling fiscal, monetary and financial stability objectives to reinforce one another more effectively.

Notes

- (1) VAT gap in Europe - Publications Office of the EU, 2025 and Mind the Gap Report. Challenges and opportunities for tax compliance and tax expenditure in the EU - Romania - European Commission, 2025
- (2) Mind the Gap Report - Taxation and Customs Union - European Commission, 2025 and The Corporate Income Tax Gap report - European Commission, June 2025.
- (3) Mind the Gap Report - Taxation and Customs Union - European Commission
- (4) At the European level, Romania registers a participation rate, as a percentage of the total population, of only 67.1 percent in 2025, ranking in the penultimate position, only Italy with a participation rate of 66.7 percent ranking below.
- (5) Such measures could include the conversion of shareholder loans into equity for companies that fail to comply with the legal requirement to maintain equity of at least 50% of their share capital; restrictions on the repayment of loans provided by shareholders or associates in the case of undercapitalized firms; limitations on dividend distributions for companies reporting accumulated losses or failing to meet capitalization requirements; and an increase and differentiation of minimum capital requirements according to turnover, for example, RON 5,000 for limited liability companies with turnover exceeding RON 400,000 and RON 500 for newly established limited liability companies.

- ⁽⁶⁾ Following Wooldridge (2020), percentage changes in a variable expressed in logarithms can be approximated by changes in its logarithm. For a discrete 10% reduction, the exact logarithmic change is used, $\ln(0.9) = -0.10536$. Hence, a 10% decline in the real recapitalization requirement increases economic growth by approximately 1.54 percentage points, $(-14.62 \times \ln(0.9))$, which, through the estimated economic-growth coefficient, improves the fiscal balance by approximately 0.38 percentage points of GDP, (1.54×0.244) .

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